

1 site known as the Hult Reservoir, then the terms of any then-existing agreement securing  
2 public vehicular transit to and from the lake known as the Hult Log Storage Reservoir shall  
3 be void.

4 (e) Land Use Planning Requirements.—Except as provided in subsection (c), once the Oregon  
5 Coastal land is taken into trust under section 3, the land shall not be subject to the land use  
6 planning requirements of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701  
7 et seq.) or the Act of August 28, 1937 (43 U.S.C. 1181a et seq.).

## 8 SEC. 6. LAND RECLASSIFICATION.

9 (a) Identification of Oregon and California Railroad Grant Land.—Not later than 180 days  
10 after the date of enactment of this Act, the Secretary of Agriculture and the Secretary shall  
11 identify any Oregon and California Railroad grant land that is held in trust by the United States  
12 for the benefit of the Confederated Tribes under section 3.

13 (b) Identification of Public Domain Land.—Not later than ~~18 months~~ 3 years after the date of  
14 enactment of this Act, the Secretary shall identify public domain land in the State of Oregon  
15 that—

16 (1) is approximately equal in acreage and condition as the Oregon and California  
17 Railroad grant land identified under subsection (a); and

18 (2) is located ~~in the vicinity of the~~ within the 18 western Oregon and California Railroad  
19 grant land counties, excluding Klamath County.

20 (c) Maps.—Not later than ~~2~~ 4 years after the date of enactment of this Act, the Secretary shall  
21 submit to Congress and publish in the Federal Register 1 or more maps depicting the land  
22 identified in subsections (a) and (b).

23 (d) Reclassification.—

24 (1) IN GENERAL.—After providing an opportunity for public comment, the Secretary shall  
25 reclassify the land identified in subsection (b) as Oregon and California Railroad grant land.

26 (2) APPLICABILITY.—The Act of August 28, 1937 (43 U.S.C. 1181a et seq.), shall apply  
27 to land reclassified as Oregon and California Railroad grant land under paragraph (1).

**From:** Feldgus, Steve  
**To:** ["Teitz, Alexandra"](#)  
**Subject:** RE: New conversion question  
**Date:** Monday, April 25, 2016 12:21:41 PM  
**Attachments:** [Testimony - ND - Helms.pdf](#)  
[Testimony - La Plata County - Lachelt.pdf](#)  
[Testimony - Rio Blanco County - Bolton.pdf](#)

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I'm not sure it answers my question, since I'm still a little hazy on the conversion from tpy to Bcf in the rule... not sure I see how the composition of the tank vapor makes those numbers agree, but I will admit to not having even tried the math.

Meanwhile, I've attached the three testimonies that we have so far, and here are some of the initial questions that I'm working up for Wednesday... definitely not final, but just wanted you to see what I was thinking.

Ms. Leiter, is the BLM asserting air quality authority with this rule? Is there anything in the rule that relates to air quality?

Ms. Leiter, does BLM current regulate venting and flaring?

*Yes, through NTL-4A.*

When was that issued?

*1979/1980*

So you've been regulating this for over 35 years?

*Yes – although originally it was the USGS, not BLM, but DOI has certainly been regulating it for 35 years.*

[Does BLM have the authority to limit venting or flaring?

*Yes.] – helpful?*

One of the complaints about the current rule is that because it tries to limit methane leaking from storage tanks, it is an air quality rule. Is there anything in the existing regulation about that?

*Yes. The BLM Supervisor is empowered to determine that recovery of vapors released from storage tanks is warranted.*

To your knowledge, has anyone complained about NTL-4A being a regulatory overreach, or something that interferes with state authority?

*No.*

Fascinating that it's coming up now, then.

Ms. Leiter, what has the trend been for methane emissions and flaring on public lands? Has it been going up or down?

*The data indicate that flaring has been going up; the data is not as clear on methane emissions, but EPA now estimates that emissions from the natural gas and petroleum sectors has been increasing in recent years, so federal land likely tracks that.*

I've heard a lot from the oil and gas industry saying that they've been reducing methane emissions – but you saying they are increasing. What's the difference?

*The industry claims were based on older EPA data. The new data show that methane emissions have, in fact, been increasing.*

You know, it's interesting that the industry loved to tout the EPA data when it showed them doing well, but I'm guessing they're going to start questioning its accuracy now.

Ms. Leiter, we hear a lot about pipeline permitting delays being the reason there is so much venting and flaring, particularly in North Dakota. How many pending pipeline applications are there in BLM's North Dakota office?

*There are 5 right-of-way applications currently pending – BLM does not know if those are oil or natural gas, however.*

Only 5. That doesn't sound like a huge backlog. And, in fact, a study by the Clean Air Task Force, using data from the State of North Dakota, found that nearly 60 percent of flaring comes from wells that are already connected to pipelines. It certainly does not appear that pipeline permitting is the real problem here.

Ms. Leiter, how closely has BLM been working with EPA on their proposed rule?

Ms. Leiter, in Mr. Helms testimony he expresses concern that BLM could grant a venting exception that would conflict with North Dakota's rules. Is there any likelihood, or even any way, that could happen? *[There shouldn't be, since operators need to follow state rules on federal leases, so an operator could not vent unless they got approval from the State.]*

**From:** Teitz, Alexandra [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Monday, April 25, 2016 12:03 PM  
**To:** Feldgus, Steve  
**Subject:** Re: New conversion question

Steve,

I just went back through this all, and here's my understanding. The basic story is that we focused on calculating the quantities of natural gas that would no longer be released through venting. In order to turn these into quantities of methane, we looked at specific methane composition numbers in gas vented from various sources. So the gas that comes off tanks, e.g., has much less methane than gas off the wellhead. Does that basically answer your question, or is there more you need?

Thanks,  
Alexandra

Alexandra Teitz  
Counselor to the Director  
Bureau of Land Management  
202-208-3027

On Wed, Apr 20, 2016 at 5:34 PM, Feldgus, Steve <[Steve.Feldgus@mail.house.gov](mailto:Steve.Feldgus@mail.house.gov)> wrote:  
Ok, those numbers seem to work out, but now I guess I'm not sure about the estimate of 164,000 – 185,000 tpy of reduced methane emissions, since that translates to 8.5 – 9.6 Bcf/year, not the 12 – 15 listed on page 9. I'm guessing it's not a 1:1 comparison of additional natural gas production to reduced-methane-emissions?

**From:** Teitz, Alexandra [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Wednesday, April 20, 2016 5:11 PM  
**To:** Feldgus, Steve  
**Subject:** Re: New conversion question

I'm not at all sure this helps, but per our folks, this is what we did:

The percentages were calculated as the % of gas capture and combustion (from vented sources) divided by the total gas loss (from vented sources). See p. 9 of the RIA. The methane reductions are calculated using the emissions reductions factors from the EPA for each source/remedy. The issue raised may be owed to the methane concentrations or to specifics in the reductions factors not meshing with the Inventories emissions factors. Just a thought on the latter. Note that since we were focused on the resource conservation/ waste angle, it made sense to calculate the % of gas now used, rather than the % of methane reduced.

\_\_\_\_\_

Alexandra Teitz  
Counselor to the Director  
Bureau of Land Management  
202-208-3027

On Wed, Apr 20, 2016 at 2:33 PM, Feldgus, Steve <[Steve.Feldgus@mail.house.gov](mailto:Steve.Feldgus@mail.house.gov)> wrote:  
Hi Alexandra,

Another number conundrum for you... the venting estimate for 2013 is 28 Bcf. Using the conversion factors at <https://www3.epa.gov/gasstar/tools/calculations.html>, that works out to approximately 537,000 metric tons of methane per year. The methane emission reductions in the rule are estimated at 164,000 to 185,000 metric tons (depending on the EPA; and even though the short tons/metric tons thing is not specified in the 'tpy' calculation in the FR notice, the conversion of Mcf to tons on page 77 of the RIA confirms it's metric), which is roughly 31 to 34 percent of the 2013 venting number. But the rule states that venting will be reduced by 44 to 52 percent.

Since I'm clearly missing something (and even the extra 0.5 or 1 Bcf combusted instead of vented doesn't get there... although that should still be included in the reduction in venting anyway), how are the "44-46 percent" (w EPA OOOO) and "49-52 percent" (w/o EPA OOOO) numbers calculated? I couldn't find anything about that in the RIA.

Thanks!

--Steve

**Congress of the United States  
House of Representatives  
Committee on Natural Resources  
Subcommittee on Energy and Mineral Resources  
April 27, 2016  
1324 Longworth House Office Building, Washington, DC**

**Testimony by Lynn D. Helms, Director  
North Dakota Industrial Commission  
Department of Mineral Resources**

**Chairman Lamborn, Ranking member Lowenthal, and members of the Subcommittee**

Thank you for this opportunity to provide comments on the Bureau of Land Management proposed regulations that would be codified at 43 CFR subparts 3178 and 3179 to replace the existing provisions related to venting, flaring, and royalty-free use of gas contained in the 1979 Notice to Lessees and Operators of Onshore Federal and Indian Oil and Gas Leases, Royalty or Compensation for Oil and Gas Lost (NTL-4A).

**The State of North Dakota is ranked 2nd in the United States among all states in the production of oil and gas.** North Dakota produces approximately 400 million barrels of oil per year and 465 billion cubic feet of natural gas per year.

**Implementation of this rule will result in an anticipated loss in state revenue from royalties and taxes estimated to be \$24 million per year. The impacts from this loss are expected to extend throughout the entire 30 year development life of the Bakken.** North Dakota's gross production tax and oil extraction tax revenues fund various programs through a series of 12 funds that each must reach a maximum before funds can be appropriated to the next fund in the series. Even a brief revenue delay can result in a high priority fund not reaching the maximum appropriation with lower priority funds then receiving no revenue for the biennium. This forces a reprioritization and fund transfers in future biennium that can take decades to correct. This occurred in 1987-2004 when low oil prices generated only enough revenue to partially fund appropriations to counties and to water resource projects, the top 2 out of 12 priorities for 17 years. **Under current revenue distribution structure the effect would be to eliminate revenue to other funds such as the strategic infrastructure investment fund, oil impact grant fund and property tax relief fund.**

The NDIC, Department of Mineral Resources, Oil and Gas Division has jurisdiction to administer North Dakota's comprehensive oil and gas regulations found at North Dakota Administrative Code (NDAC) Chapter 43-02-03. These regulations include regulation of the drilling, producing, and plugging of wells; the restoration of drilling and production sites; the perforating and chemical treatment of wells, including hydraulic fracturing; the spacing of wells; operations to increase ultimate recovery such as cycling of gas, the maintenance of pressure, and the introduction of gas, water, or other substances into producing formations; disposal of saltwater and oil field wastes through the ND UIC Program; and all other operations for the production of oil or gas.

Mineral ownership of North Dakota lands upon which oil and gas development has occurred consists of approximately 85% private lands, 9% federal lands, and 6% state lands. Many of the private lands in North Dakota upon which oil and gas development has occurred are split estate lands, with more than 30% of the potential development on private surface involving federal minerals and therefore subject to the proposed rule.

**North Dakota has a unique history of land ownership that has resulted in a significant portion of the state consisting of split estate lands that could be adversely affected by the proposed rule.** Unlike many western states that contain large blocks of unified federal surface and federal mineral ownership, the surface and mineral estates in North Dakota were at one time more than 97% private and state owned as a result of the railroad and homestead acts of the late 1800s. However, during the depression and drought years of the 1930s, numerous small tracts in North Dakota went through foreclosure. The federal government through the Federal Land Bank and the Bankhead Jones Act foreclosed on many farms taking ownership of both the mineral and surface estates. Many of the surface estates were later sold to private parties with some or all of the mineral estates retained by the federal government. This resulted in a very large number of small federally-owned mineral estate tracts scattered throughout western North Dakota. Those federal mineral estates impact more than 30% of the oil and gas spacing units that are typically recognized as a communitized area (CA) by the BLM. There are a few large blocks of federal mineral ownership, for which the federal government has trust responsibility and also manages the surface estate through the U.S. Forest Service or Bureau of Indian Affairs. These are on the Dakota Prairie Grasslands in southern McKenzie and northern Billings Counties, as well as on the Fort Berthold Indian Reservation. **See map, Exhibit 1. Even within those areas, federal mineral ownership is interspersed with a “checkerboard” of private and state mineral or surface ownership. Therefore, virtually all federal management of North Dakota’s oil and gas producing region consists of some form of split estate.**

**North Dakota’s unique land ownership situation provides an excellent example of how the proposed rule could have far-reaching adverse impacts on state’s ability to administer their oil and gas regulatory programs.** This is reflected in the preamble to the proposed rule which states:

*“Of the vented and flared gas reported to ONRR, 15.2 percent came from wells extracting only Federal minerals; 9.0 percent from Indian ownership, and **75.8 percent from mixed ownership** (some combination of Federal, Indian, fee (private) and State land). While all of the natural gas flared or vented from the Federal and Indian lands categories originates from the Federal and Indian mineral estates, only a portion of the natural gas flared or vented from the mixed ownership category originates from the Federal and Indian mineral estates.”*

**Federalism:** The preamble to the proposed rule states “The proposed rule would not have a substantial direct effect on the States, the relationship between the national government and the States, or the distribution of power and responsibilities among the levels of government. It would not apply to States or local governments or State or local government entities. Therefore, in accordance with Executive Order 13132, the BLM has determined that this proposed rule does not have sufficient Federalism implications to warrant preparation of a Federalism Assessment.”

However, this contradicts Section **3179.11 Coordination with State regulatory authority which states**, *To the extent that any BLM action to enforce a prohibition, limitation, or order under this subpart adversely affects production of oil or gas that comes from non-Federal and non-Indian mineral interests, the BLM will coordinate, on a case-by-case basis, with the State regulatory authority having jurisdiction over the oil and gas production from the non-Federal and non-Indian interests.*”

**In the proposed rule the BLM anticipates adverse effects on production of oil and gas from non-Federal and non-Indian mineral interests and recognizes potential implications on the state’s regulatory authority. Therefore, a federalism assessment must be done.**

The adverse impacts of the proposed rule on North Dakota’s ability to administer its oil and gas regulatory program are explained below:

**Prescriptive limits on flared volume are not appropriate for unconventional oil production:**

As noted in the preamble to the proposed rule, the primary means by which the BLM proposes to reduce flaring is based on Wyoming and Utah approaches to flaring limits and proposes to limit the average rate at which gas may be flared to 1,800 Mcf/month, per producing well on a lease. BLM states *that operators have multiple avenues to reduce high levels of flaring. One is to speed up connection to pipelines, or another is to boost compression to access existing pipelines with capacity issues. BLM believes there are additional options available to avoid this waste, the economics of alternative on-site capture technologies improve as the quantities of gas increase, and that imposing a limit on the overall rate of flaring on a lease would provide operators an incentive to implement these technologies, where net costs are not prohibitive, to allow the wells to produce oil at the maximum rate. Alternatively, an operator could slow production sufficiently to stay below a flaring limit. Slowing the rate of flaring is likely to conserve gas overall because less gas is lost before capture infrastructure comes on line (or is upgraded, in the case of a field with insufficient capacity).*

Section 3179.10 of the proposed rule states specifically that, if production from a new well would force an existing producing well already connected to the pipeline to go offline, then notwithstanding the requirements in 3179.6 and 3179.7, the BLM could limit the volume of production from the new well for a period of time while gas pressures from the new well stabilize.

**The proposed flare volume limits are based upon Wyoming and Utah limits that were developed in the 1980’s for associated gas produced from conventional oil reservoirs. They are not appropriate for control of flaring from unconventional oil resources. The attached typical Bakken well completion scenarios (Exhibit 2 and Exhibit 3) illustrate how the 1,800 Mcf/month per producing well, or 60 Mcf/day, equals approximately 6-9% of the produced gas volume could be flared at initial production, but due to the very rapid decline rate of such unconventional oil wells, by year four 67% to 100% of the produced gas from a typical Bakken well could be flared.**

NDIC has implemented flaring reduction regulations which utilize declining allowable flare percentages of 20% (4/1/16 through 12/31/17), 15% (1/1/17 through 12/31/17), 12% (1/1/18 through 1/1/20) and 7-9% thereafter. Four years from now the typical well will be allowed to flare 67-100% of the gas produced under the proposed BLM rule, but only 7-9% under NDIC regulations.

**Restricting wells to oil production rates equivalent to 1,800 Mcf/month will result in uneconomic initial production rates of 60 barrels of oil per day or less.**

**Restricting flaring on federal wells to 1,800 Mcf/month and prioritizing existing wells over new wells will force operators to give gas produced from federal wells priority over gas produced from state and private wells, potentially increasing flared volumes from the state and private wells and directly conflicting with state rules designed to increase gas capture from all wells.**

The NDIC strongly recommends that the average rate limits be changed to limit the average percentage of gas captured in order to better manage gas capture from unconventional oil resources and minimize conflicts with North Dakota's flaring reduction regulations.

*§ 3179.103 Initial production testing: This proposed section would clarify when gas may be flared, royalty-free or otherwise, during a well's initial production test. It provides that gas may be flared royalty-free during initial production testing for up to 30 days or 20 MMcf of flared gas, whichever occurs first. Volumes flared during well completion under proposed § 3179.102(a)(2) would count towards the 20 MMcf limit.*

Many North Dakota Bakken wells are capable of producing more than 20MMcf in the 14 days of unrestricted production allowed under NDIC Order No. 24665.

**The 20 MMcf limit in the proposed rule creates a direct conflict with North Dakota's ability to administer its oil and gas regulatory program. In some cases the proposed rule will allow flaring to continue twice as long as NDIC regulations; and in other cases, the proposed rules will require flaring to cease before the full flow back period allowed under NDIC regulations in the well reaches 20 MMcf of flared gas.**

The NDIC strongly recommends that the limit be changed from a total volume to a total time period consistent with NDIC Order No. 24665.

*§ 3162.3-1 Drilling applications and plans: When submitting an Application for Permit to Drill an oil well, the operator must also submit a plan to minimize waste of natural gas from that well.*

The proposed rule duplicates North Dakota's requirement for gas capture plans in part, but the required information under the proposed rule is not entirely consistent with the North Dakota regulations. This requirement could create a direct conflict with North Dakota's ability to administer its oil and gas regulatory program. The proposed rule states that "failure to submit a complete and adequate waste minimization plan is grounds for denying or disapproving an Application for Permit to Drill." **Since North Dakota drilling permits and gas capture plans are only valid for one year, BLM denying or disapproving an Application for Permit to Drill on the basis of information the NDIC believes is unnecessary is likely to result in numerous North Dakota drilling permits expiring.**



**§ 3178.2 Scope.**

*(a) This subpart applies to:*

*(1) All onshore Federal and Indian (other than Osage Tribe) oil and gas leases, units, and*

*CAs, except as otherwise provided in this subpart;*

*(2) Indian Mineral Development Act (IMDA) oil and gas agreements, unless specifically excluded in the agreement or unless the relevant provisions of this subpart are inconsistent with the agreement;*

*(3) Leases and other business agreements and contracts for the development of tribal energy resources under a Tribal Energy Resource Agreement entered into with the Secretary, unless specifically excluded in the lease, other business agreement, or Tribal Energy Resource Agreement;*

*(4) Committed State or private tracts in a federally approved unit or communitization agreement defined by or established under 43 CFR subpart 3105 or 43 CFR part 3180;*

*(5) All onshore wells, tanks, compressors, and other facilities located on a Federal or Indian lease or a federally approved unit or CA; and*

*(6) All gas lines located on a Federal or Indian lease or federally approved unit or CA that are owned or operated by the operator of the lease, unit, or communitization agreement.*

*(b) For purposes of this subpart, the term “lease” also includes IMDA agreements.*

Because wells in North Dakota’s unconventional Bakken play require a 2 mile horizontal lateral to be economic, a large number of wells in North Dakota are commingled down hole, and many have central tank batteries in North Dakota which commingle private, state, and federal mineral interests. Under the proposed rule, many wells in established spacing units and CA will now require a BLM drilling permit and a waste management plan.

**Private mineral interests, as well as the State of North Dakota, will be subjected to these new BLM permitting requirements and directly impacted by BLM permitting delays.**

The NDIC strongly recommends that this section of the proposed rule be rewritten to exclude: State or private tracts in a federally approved unit or CA; all onshore wells, tanks, compressors, and other facilities located on a Federal or Indian lease or a federally approved unit or CA; and all gas lines located on a Federal or Indian lease or federally approved unit or CA that are owned or operated by the operator of the lease.

**§ 3179.6 When flaring or venting is prohibited:** *The operator must flare rather than vent any gas that is not captured with some exceptions.*

The proposed rule duplicates North Dakota’s prohibition of venting natural gas in part. The proposed rule allows venting in four explicit circumstances; NDIC rule and regulations do not allow explicit exceptions but allow the NDIC to grant an exception after notice and public hearing. **Any venting exception granted by the BLM will likely create a direct conflict with North Dakota’s ability to administer its oil and gas regulatory program.**

The NDIC recommends that this section of the proposed rule be withdrawn and BLM work within NDIC regulations to prevent venting as an active participant in any hearings scheduled for venting exceptions on federal wells.

**LEAK DETECTION AND REPAIR (LDAR):** The highly detailed leak detection and repair requirements in the proposed rule may be consistent with EPA 0000 initially, but will likely result in conflicting requirements when either agency makes changes or issues guidance. On March 11, 2016, EPA announced plans for rule making that will duplicate or conflict with the requirements of the proposed rule. In addition, the **BLM has no Clean Air Act authority and the proposed rule contains numerous references to EPA regulations at 40CFR part 60 subpart 0000. The very restrictive requirement to make repairs within 15 days of detecting a leak and then retesting within 15 days does not recognize the seasonal variability of work conditions in North Dakota and could result in exposing workers to very hazardous weather conditions.**

The NDIC strongly recommends that the leak detection and repair requirements be eliminated from the proposed rule.

*§ 3179.8 Measuring and reporting volumes of gas vented and flared from wells: If the operator estimates that the volume of gas vented or flared from a flare stack or manifold equals or exceeds 50 Mcf per day; or if the BLM determines and informs the operator that the additional accuracy offered by measurement is necessary for effective implementation of this Subpart the operator must measure all volumes of gas vented or flared.*

**NDIC oil and gas measurement personnel have not been able to identify any existing meter systems that can accurately determine flare gas volumes over the extreme range of pressures and rates typically encountered on producing wells.** Therefore, NDIC Order 24665 requires operators to accurately measure total gas production, or calculate total gas production from an accurate gas oil ratio, and calculate the gas capture percentage as follows: “The gas capture percentage shall be calculated by summing monthly gas sold plus monthly gas used on lease plus monthly gas processed in a Commission approved beneficial manner, divided by the total monthly volume of associated gas produced by the operator.” NDIC Order No. 24665 and support documents can be viewed under Gas Capture at [https://www.dmr.nd.gov/oilgas/2014Permitting\(2\).asp](https://www.dmr.nd.gov/oilgas/2014Permitting(2).asp) .

**The proposed rule conflicts with guidance issued by the NDIC for compliance with NDIC Gas Capture Order No. 24665. Therefore, this requirement is in direct conflict with North Dakota’s ability to administer its oil and gas regulatory program.**

The NDIC strongly recommends that the measurement requirement be eliminated from the proposed rule.

*§ 3179.401 State or tribal requests for variances from the requirements of this subpart. This proposed section would create a variance procedure, under which the BLM could grant a State or tribe’s request to have a State or tribal regulation apply in place of a provision or provisions of this subpart. The variance request would have to: (1) Identify the specific provisions of the BLM requirements for which the variance is requested; (2) Identify the specific State or tribal regulation that would substitute for the BLM requirements; (3) Explain why the variance is needed; and (4) Demonstrate how the State or tribal regulation would satisfy the purposes of the relevant BLM provisions. The BLM State Director would review a State or tribal variance request. To approve a request, the BLM State Director would have to determine that the State or tribal regulation meets or exceeds the requirements of the provision(s) for which the State or tribe sought the variance, and that the State or tribal regulation is consistent with the terms of*

*the affected Federal or Indian leases and applicable statutes. Paragraph (b) would specify that the decision on a variance request is not subject to administrative appeal under 43 CFR part 4. Paragraph (c) would clarify that a variance granted under this proposed section would not constitute a variance from provisions of regulations, laws, or orders other than proposed subpart 3179. Paragraph (d) would reserve the BLM's authority to rescind a variance or modify any condition of approval in a variance.*

**Discussion of the variance process with BLM personnel has revealed that even if a variance is approved, BLM will inspect and enforce the most strict requirements of the BLM, state, or tribal rule. This process could result in direct conflicts with North Dakota's ability to administer its oil and gas regulatory program.**

The potential adverse impacts of the proposed rule on North Dakota's ability to administer its oil and gas regulatory program are many and the State of North Dakota intends to define its sovereign jurisdiction over oil and gas regulation in any manner necessary.

Sincerely,

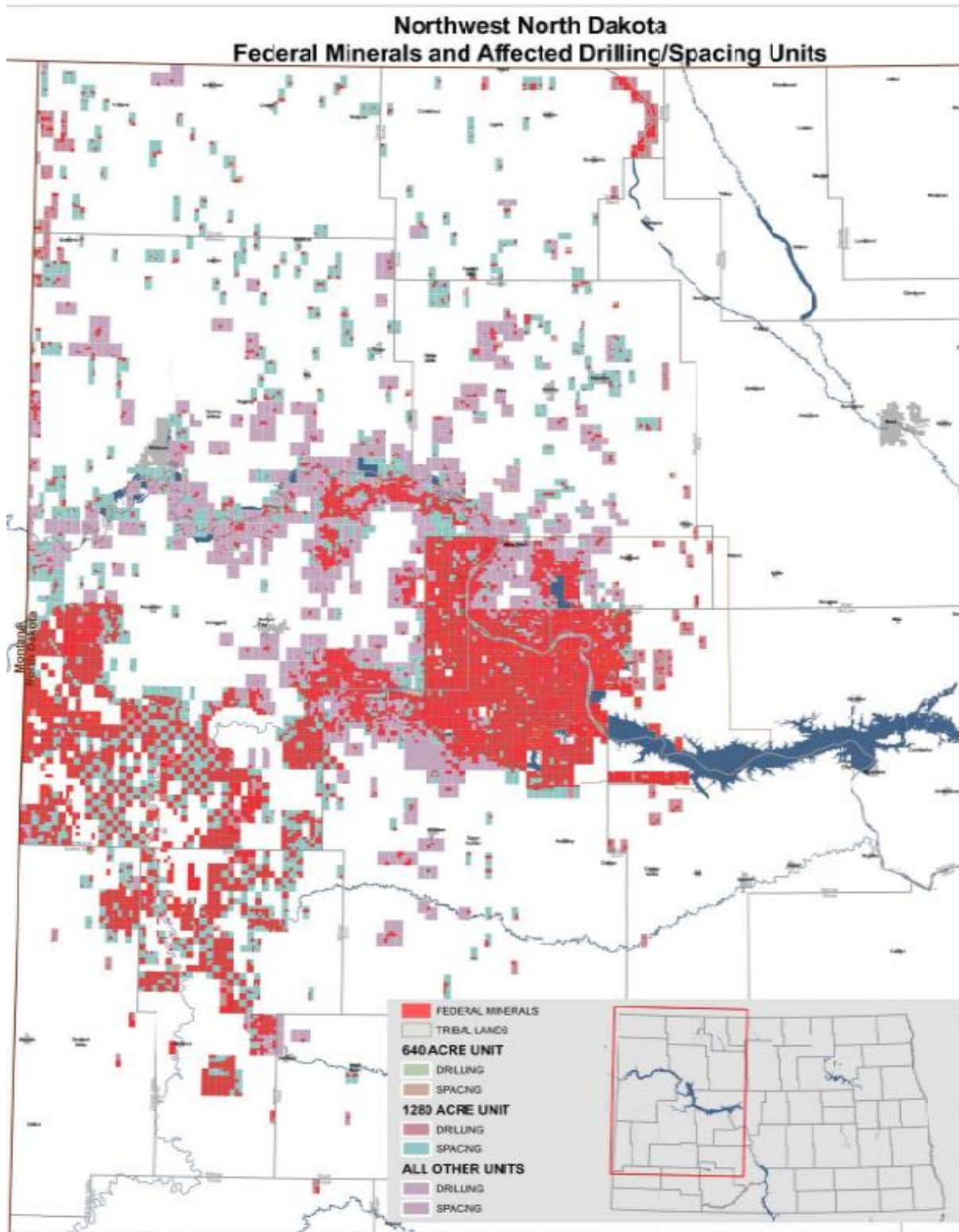
Lynn D. Helms, North Dakota Industrial Commission, Department of Mineral Resources

On behalf of the North Dakota Industrial Commission

Jack Dalrymple, Chairman  
Governor

Wayne Stenehjem  
Attorney General

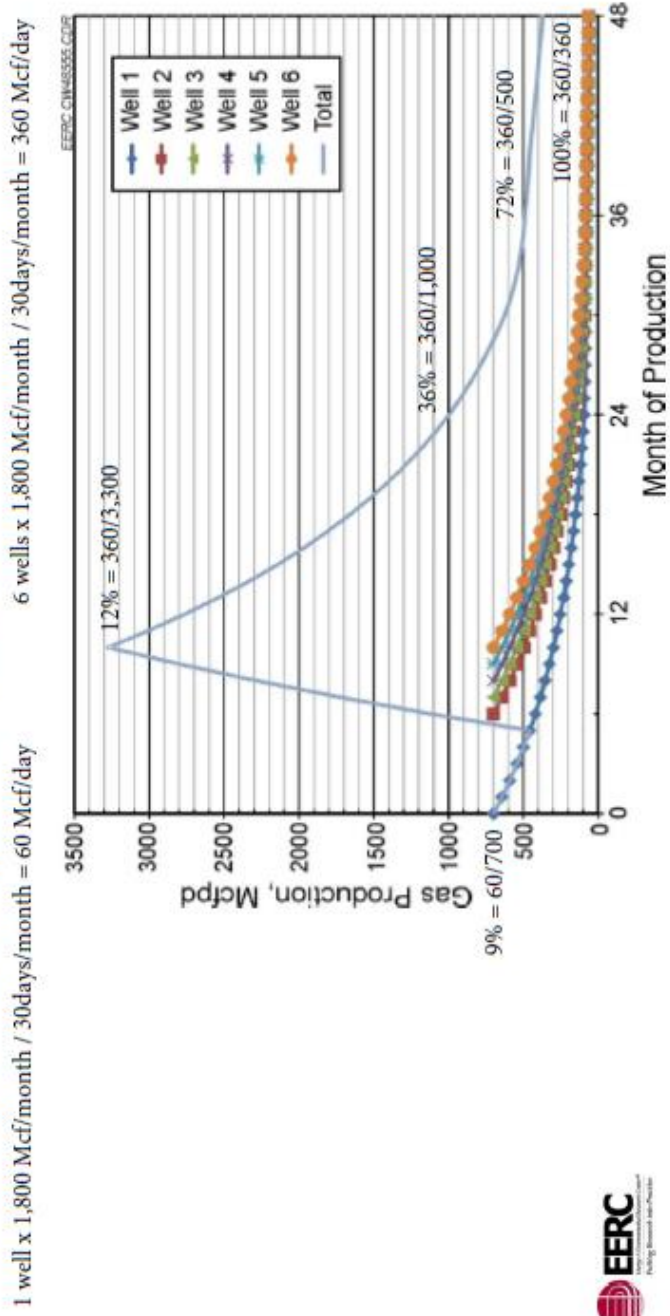
Doug Goehring  
Agriculture Commissioner



# Scenario 1 – Hypothetical Six-Well, 1-month Interval

- Initial well producing for 6 months, followed by five additional wells coming online at 1-month intervals.
- Hypothetical decline curve used.

Exhibit 2



# Scenario 2 – Hypothetical Six-Well, 6-month Interval

- Six wells coming online at 6-month intervals.
- Hypothetical decline curve used.

1 well x 1,800 Mcf/month / 30days/month = 60 Mcf/day  
 2 wells = 120 Mcf/day  
 3 wells = 180 Mcf/day  
 4 wells = 240 Mcf/day  
 5 wells = 300 Mcf/day  
 6 wells = 360 Mcf/day

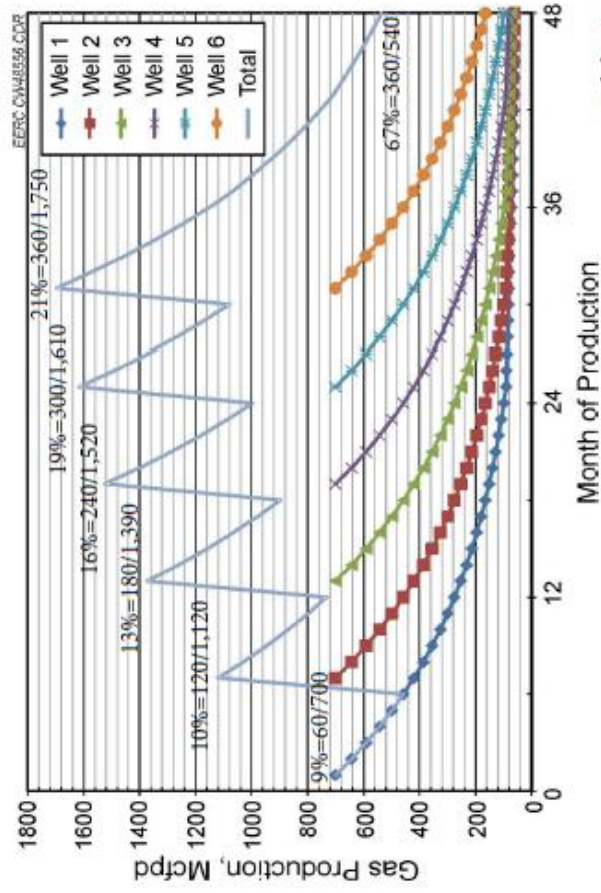


Exhibit 3



[REDACTED]

April 24, 2016

The Honorable Doug Lamborn, Chairman  
United States Representative  
Subcommittee on Energy and Mineral Resources  
1324 Longworth House Office Building  
Washington, DC 20515

Chairman, ranking member, esteemed members of the Committee:

Thank you for the opportunity to speak with you today about the Bureau of Land Management's proposal to limit natural gas waste from oil and gas development on federal and tribal land. As a County Commissioner for La Plata County in Colorado, I know about oil and gas development and the positive and negative impacts it can have on communities and residents. In my county we have more than 3,300 wells, with many of them on tribal and public land and thousands more in the Four Corners region of the San Juan Basin. While oil and gas development can provide jobs for our residents, we must ensure it is done in a safe and responsible manner. We cannot allow the waste of these resources, which belong to all Americans.

As a taxpayer, a mother, and a public official elected to protect the health, safety, welfare, and budget of the residents of La Plata County, it is unacceptable that we currently allow the unfettered venting and flaring of natural gas. These practices result in the loss of millions of dollars in state and federal revenue; money that has a real and significant impact in La Plata County. Fortunately, this administration has drafted regulations that attempt to resolve these problems.

Overall, the proposal put forward by the Bureau of Land Management is an effective one. I believe these guidelines are a significant step in the right direction. We need to ensure that as little natural gas as possible is wasted. Wasted gas is lost money for the American taxpayers and the taxpayers of my state, as well as a public health hazard for citizens nearby.

Through statutes that Congress has passed, like the Mineral Leasing Act and the Federal Land Policy and Management Act, the BLM has an obligation to ensure that our shared resources are used for the public good, not wasted. It is vital that this happens for the people that own our public lands: all of us. By reducing this waste, local governments will see increased revenue from royalties that can go to important necessities, like education, roads, and emergency services.

If implemented, this rule would have the added benefit of safeguarding public health. For example, Wyoming's Upper Green River Basin, which has a population far less than 100,000 people, was designated a non-attainment area due to pollution from oil and gas development, mainly on federal land. In response, the state put in place regional guidelines to reduce emissions, and pollution in the basin decreased dramatically. In the recently released "State of the Air" report from the American Lung Association, Sublette County in Wyoming has a "C" for high-ozone days, which is a marked improvement from the "F" the same county got in 2012.

The problem is that many states have neglected to put forward limits on emissions from oil and gas operations; and many states that have enacted guidelines have done so in a less than comprehensive manner. In the San Juan Basin of northwest New Mexico and southwest Colorado, we have about 40,000 oil and gas wells. According to NOAA and NASA, our region is home to the highest concentrations of atmospheric methane in the country. We are the reddest spot on the map! I don't want to be the reddest spot on the map anymore and this rule can help solve this problem, especially as EPA has recently determined that methane from oil and gas development is more prevalent than previously thought. It makes sense that regulations regarding the land and resources owned by all Americans should be put forward by the federal government, not governed ad hoc, by individual states. BLM has been working with states and other federal agencies to apply best practices to federal land management. These efforts will make sure that energy development on federal land is subject to the highest standards and consistent with other federal and state guidelines.

One state that has stepped up is my home state of Colorado. In fact, Governor Hickenlooper and the oil and gas industry came together to establish the first ever statewide regulations limiting methane emissions from oil and gas facilities. These regulations, which include strong leak detection and repair guidelines, have been extremely successful. According to a survey of operators in the state published by the Center for Methane Emissions Solutions, Colorado's rules have reduced emissions, improved worker safety, and increased the amount of product being sent to market, benefitting the people of Colorado and the oil and gas industry as a whole.

I also support these regulations because of their potential to create jobs and stimulate the local economy. Rules similar to the one proposed by BLM have created a market for economically-viable methane capture and leak detection technologies. As a result, companies want to manufacture and sell this equipment here in the United States. In fact, four of these companies, Well Master Corporation, Apogee Scientific, Nichols-Given Associates and PCS Ferguson, have



located their headquarters along with multiple manufacturing and sales facilities in Colorado and another company is headquartered just over the state line in Farmington, New Mexico. These are American businesses created with American ingenuity, ready to supply a market in desperate need of this technology.

These are some of the many reasons why local elected officials like myself support the administration's approach to reducing methane waste. This includes dozens of local elected officials from across Colorado and New Mexico, including the Park County Board of County Commissioners in Colorado and Rio Arriba County in New Mexico. In fact, according to a recent poll, 80% of all westerners, an overwhelming majority, support reducing federal oil and gas waste.

This proposal is common sense. Everyone knows that you shouldn't waste when you don't have to. And we don't have to. For a penny per MCF (or a thousand cubic feet) of natural gas produced, we can significantly cut the amount of gas that is currently wasted. Smart rules, like the ones proposed by the BLM, will help taxpayers, clean up our air, and create jobs. It's a win-win for everyone.

Thank you again for the opportunity to speak, and I look forward to taking your questions.



RIO BLANCO COUNTY  
BOARD OF COUNTY COMMISSIONERS  
COUNTY ADMIN BUILDING, 200 MAIN  
P.O. BOX I  
MEEKER, COLORADO 81641  
970-878-9430

**COMMITTEE ON NATURAL RESOURCES**  
**Subcommittee on Energy and Mineral Resources**  
**April 27, 2016, 10:00 a.m.**  
**Bureau of Land Management's Regulatory**  
**Overreach in to Methane Emissions Regulation**

April 20, 2016

Committee on Natural Resources  
Subcommittee on Energy and Mineral Resources  
1324 Longworth House Office Building  
Washington, DC 20515

Dear Chairman Lamborn and Honorable Subcommittee Representatives:

My name is Shawn J. Bolton, Chairman of the Board of County Commissioners of Rio Blanco County Colorado. Thank you for allowing me this opportunity to speak with you about the BLM's Regulatory Overreach into Methane Emissions Regulation and how it impacts not only the people of Rio Blanco County, but the people of the State of Colorado.

Rio Blanco County has approximately 6,000 residents. Rio Blanco County covers approximately 3,300 square miles in northwest Colorado. Seventy-Five percent (75%) of our County's land is Federal land. Due to the large amount of federal land, government legislation, polices or procedures directly impact our economic prosperity. The barrage of BLM regulations coming out of Washington and our local field office is negatively affecting Rio Blanco County's economy and directly affects the governmental services we provide to our residents. The BLM Methane Emissions Regulation is an unnecessary, redundant policy which ignores current emission reduction actions already being taken by our energy partners.

Eighty-Five percent (85%) of Rio Blanco County's ad valorem tax valuation comes from the oil and gas extraction industry. The generation of these revenues is critical to maintaining the health and wellbeing of the residents of Rio Blanco County. The revenues generated primarily by the energy industry, are used to develop and maintain over one thousand miles of roads and bridges, provide a Sheriff's Department for the security and safety of the County residents and provide matching funds for Health and Human Services programs required by the Federal Government and/or the State of Colorado.

In the past year, the BLM has hit our County with an onslaught of mandates, policies and directives. Specifically, Rio Blanco County has had to respond to the following issues: Methane Emissions, Sage Grouse protection issues, endangered or threatened species such as the Bladder Pod, the Twin Pod and the Beardtongue Penstemon, Wild Horse Management, Cultural Resources Management, and most recently, the proposed BLM 2.0. The BLM has a team of lawyers, legal and support staff and may take several months or even years to write

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*SHAWN J. BOLTON*  
Chairman

*JON D. HILL*  
Commissioner

*JEFFREY D. ESKELSON*  
Commissioner

[bocc@co.rio-blanco.co.us](mailto:bocc@co.rio-blanco.co.us)

BLM policies and procedures. We have one Natural Resources employee who must respond to these voluminous documents within a Public Comment period of only 60 to 90 days.

The BLM is consistently adding layers of bureaucracy to handicap oil and gas producers. It appears that the BLM's focus is to drive more and more operators from federal lands. There is a direct correlation between the impact of the BLM's overreaching, needless regulations and energy production on federal lands, which already lags far behind production on privately held lands. Additionally, the BLM fails to realize how its actions negatively affect rural communities across the country. Mesa County, Colorado, due to the decrease in oil and gas generated revenues, is projecting a shortfall of at least three million dollars. Garfield County, Colorado derives 65% of its valuations from oil and gas production.

The energy producers in Colorado generate approximately One Hundred Sixty Million in royalty revenues, over Forty Million, of which comes from Rio Blanco County. Let me repeat that, out of One Hundred and Forty Million Dollars, Forty Million comes from Rio Blanco. The remaining amount comes from Garfield County and other counties. These funds benefit all residents in the State of Colorado not just the producing counties. The revenues collected from our oil and gas partners in Colorado help to build infrastructure across the state. Without these revenues, the counties as well as the State of Colorado will see dramatic budget shortfalls.

We fully understand that not everyone likes the fossil fuel industry, but what we want you to understand is that over regulation and overreaching policies are stifling our ability to maintain a healthy, productive economy. We should be drawing energy companies to the federal lands in our counties, not chasing them away to private lands, where they are less regulated.

We know the BLM does not want to destroy our oil and gas industry, kill jobs, and handicap our economy, but the BLM must seriously consider the repercussions of overreaching policies. We support protection of our air, land and water. It's obvious we have done this under the existing policies. Our moose, elk and deer herds are healthy and thriving. Our streams are clean and clear. We are proud of our commitment as well as the efforts of our energy partners in protecting the environment in Rio Blanco County. The BLM's proposed Methane Emissions policy is a needless additional regulation, which if passed will significantly impact the economies of Western Colorado cities and counties and the State of Colorado.

Respectfully,



Shawn J. Bolton, Chairman  
Rio Blanco County Board of County Commissioners

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*SHAWN J. BOLTON*  
Chairman

*JON D. HILL*  
Commissioner  
[bocc@co.rio-blanco.co.us](mailto:bocc@co.rio-blanco.co.us)

*JEFFREY D. ESKELSON*  
Commissioner

**From:** Ripchensky, Darla (Energy)  
**To:** [Patrick Wilkinson \(p2wilkin@blm.gov\)](mailto:p2wilkin@blm.gov)  
**Cc:** [Murfitt, Lucy \(Energy\)](#); [Lane, Michelle \(Energy\)](#); [Brooks, David \(Energy\)](#)  
**Subject:** Questions for the Record Submitted to Mr. Pool from the 4/21/16 SENR Cmte PLFM Subcmte Hearing  
**Date:** Monday, April 25, 2016 1:23:08 PM  
**Attachments:** [QFRs to Mr. Pool from the 4-21-16 ENR Cmte PLFM Subcmte Hrg.docx](#)

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Good afternoon, Patrick. Attached are Questions for the Record which have been submitted to Mr. Pool by Senators Murkowski and Barrasso from last Thursday's PLFM Subcommittee hearing regarding pending legislation. I respectfully request that you provide Mr. Pool's responses to these questions directly to me by **Monday, May 16, 2016** for inclusion in the official hearing record.

Please do not hesitate to contact me if you have any questions. Thank you for your assistance with this request.

Sincerely,

Darla Ripchensky, PMP  
Chief Clerk  
U.S. Senate Committee on Energy and Natural Resources  
304 Dirksen Senate Office Building  
Washington, DC 20510  
202.224.3607

**U.S. Senate Committee on Energy and Natural Resources  
Subcommittee on Public Lands, Forests and Mining  
Hearing on April 21, 2016 regarding Pending Legislation  
Questions for the Record Submitted to Mr. Mike Pool**

**Questions from Senator Lisa Murkowski**

**Question 1:** During your testimony, in response to a question from Senator Barrasso, about ‘potential wilderness’ designations and converting land from potential wilderness to designated wilderness, you cited FLPMA 201 and 603, essentially citing Wilderness Study Areas. FLPMA, however, did not specifically authorize a category of “potential wilderness” for BLM lands. Please explain how BLM would manage “potential wilderness” lands if designated. How would BLM convert “potential wilderness” designated lands in S. 1423, S.1510 and S. 1699 that have non-conforming uses to full designated wilderness?

**Question 2:** Have the areas proposed for wilderness designation or potential wilderness in S. 1423, S.1510 and S. 1699 been assessed for mineral resource potential? If yes, please provide the assessments.

**Question 3:** How does the BLM determine the fair market value of a reversionary interest? Does the BLM include any structures or improvements that have been made to the property in determining the value? Please explain.

**Questions from Senator John Barrasso**

**Question 1:** Department of Defense lands are not typically considered eligible for purposes of Payment in Lieu of Taxes (PILT) allocations, while BLM lands are eligible for PILT. Do you anticipate that the enactment of S. 2383, and any proposed withdrawals, would impact county PILT payments in the State of Utah?

**Question 2:** Please explain how management practices for grazing in wilderness areas, that are the subject of S. 1167, changed following the 2012 BLM wilderness management manual revision. Were impacted stakeholders allowed to comment on the manual revisions? What grazing activities would now be considered reasonable for the use of motorized vehicles?

**From:** Bloom, Greg (Tom Udall)  
**To:** [Lisa Morrison](#)  
**Cc:** [Allen, Beverly \(Tom Udall\)](#)  
**Subject:** Pilot Office Report  
**Date:** Monday, April 25, 2016 1:43:03 PM

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Hi Lisa,

I hope you had a nice weekend.

Can you please check and see if the pilot office report has been released? Oil and gas folks asked me for it back in February. They thought it was due 2/1/16. I'd like to be able to get it to them.

Thank,  
Greg

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**From:** Allen, Beverly (Tom Udall)  
**Sent:** Thursday, March 17, 2016 9:40 AM  
**To:** 'Sheila Mallory' <smallory@blm.gov>; Michael Vermeys <mvermeys@blm.gov>; James Stovall <jstovall@blm.gov>; Lisa Morrison <lmorriso@blm.gov>  
**Cc:** Bloom, Greg (Tom Udall) <Greg\_Bloom@tomudall.senate.gov>  
**Subject:** RE: BLM-NMSO Lease and APD fee allocations

Hey Shelia,

- **I have included our new State Director-Greg Bloom on this follow up email. He needs to get back to a company on an ask that has to do with this bill.**
- **Have you been able to find out any more about that report that was due last month and was part of the bill language? Let our office know if there is anything we can help with and our if you have the language and can share with us any other timelines we need to be in the loop on in case producers ask.**
- **Also, if we can get an update on the timeline with potential dates of the royalties and the permit class at NMJC that is greatly appreciated. I would like for the Senator to see the full circle at NMJC the next time I have him in SENM.**

Thanks again for all your work on this!

Beverly Allen  
SENM Field Representative  
Office of United States Senator Tom Udall  
102 W. Hagerman, Ste A, Carlsbad, NM, 88220  
575-234-0366 (office)  
575-640-5343 (cell)  
[beverly\\_allen@tomudall.senate.gov](mailto:beverly_allen@tomudall.senate.gov)

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**From:** Sheila Mallory [<mailto:smallory@blm.gov>]  
**Sent:** Thursday, March 03, 2016 2:47 PM  
**To:** Michael Vermeys <[mvermeys@blm.gov](mailto:mvermeys@blm.gov)>; Allen, Beverly (Tom Udall) <[Beverly\\_Allen@tomudall.senate.gov](mailto:Beverly_Allen@tomudall.senate.gov)>; James Stovall <[jstovall@blm.gov](mailto:jstovall@blm.gov)>; Lisa Morrison <[lmorriso@blm.gov](mailto:lmorriso@blm.gov)>  
**Subject:** RE: BLM-NMSO Lease and APD fee allocations

Hi Beverly,

Also wanted to let you know that we have reached out to WO regarding the report but have been told there won't be any clear answer for a couple of days. As soon as I know I will let you know.

**From:** Vermeys, Michael [<mailto:mvermeys@blm.gov>]  
**Sent:** Wednesday, March 02, 2016 4:34 PM  
**To:** [beverly\\_allen@tomudall.senate.gov](mailto:beverly_allen@tomudall.senate.gov); Sheila Mallory; James Stovall; Lisa Morrison  
**Subject:** BLM-NMSO Lease and APD fee allocations

Hello Beverly,

Please consider the following information related to APD fees and O/G royalty revenues from leasing (L9141)

APD Fees:

The fee for a single ADP in FY16 (Oct 15-Sept 16) is \$9,500, however 15% is deposited into a PPIF account, 6.8% of that total is transferred to the US Treasury and 25% is available for further allocation.

$\$9,500 \times 15\%$  (deposited to PPI) = \$8,075  
 $\$8,705 \times 6.8\%$  (withheld by US Treasury) = \$7,525.90  
 $\$7,525.90 \times 25\%$  (available for further allocation) = \$5,644.43

Total retained by BLM NMSO for distribution = \$5,644.43

Pecos District, Carlsbad Field Office received 162 APD's @ \$5, 644.43/ea. = \$914,399.28  
Farmington District (including Indian lands) received 27 APD's @ \$5, 644.43/ea.= \$152, 399.61

O/G royalty revenues from leasing (L9141)

Obligations to this account (L9141) must be planned to coincide with the total amount and timing of actual rental

receipts. Sufficient funds must be maintained in the account to accommodate leave surcharge and other obligations incurred. This account is not subject to the standard Bureau indirect surcharge. Administrative costs, if properly authorized, should be direct charged.

The following breakdown displays the accounting treatment or royalty revenues from leasing for the Farmington and Pecos BLM Districts in FY16

Farmington	\$409, 413.53
Pecos (Carlsbad Field Office)	\$729, 853.61

Additionally, BLM NMSO personnel have been working with Robert Rhodes of NMJC on Partnering opportunities in order to enhance the Bureau's ability to process APDs more quickly and efficiently, accelerate the development and completion of master leasing plans in support of BLM's leasing reform efforts, and strengthen its inspection and oversight program. Partnering with NMJC allow's students and/or recent graduates the practical work experience in processing, permitting and management activities related to oil and gas development. NMSO personnel have spent 2 days interviewing several college candidates to possibly work for the Carlsbad Field Office on BLM projects. Proposed project work includes oil and gas permitting, resource survey/monitoring and GIS mapping/modeling. The Carlsbad Office has submitted several projects for review in hopes of receiving funds in order to hire current college students as seasonal interns.

Thank you for your time and consideration. Please feel free to reply or contact me with any further questions or concerns,

Sincerely,

**Michael Vermeys**

**Acting Branch Chief - Minerals**

**New Mexico State Office**

**505.354.2144 desk**

**775.635.3933 cell**

**Assistant Field Manager**

**Mount Lewis Field Office**

**BLM-NV-Battle Mt. District**

**775.635.4178 desk**

**775.635.3933 cell**

**775.635.4034 fax**

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**From:** Moran, Jill  
**To:** [Lincoln, Jack](#)  
**Cc:** [Steve Feldgus](#); [Cooper, Bill](#); [MacGregor, Kate](#); [Patrick Wilkinson](#); [Jill Ralston](#); [Meagan Gins](#)  
**Subject:** BLM testimony  
**Date:** Monday, April 25, 2016 3:53:39 PM  
**Attachments:** [BLM Statement on Methane and Waste Reduction \(FINAL\).docx](#)  
[04.27.16 Disclosure Form \(1\).doc](#)

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Jack,

Attached is Deputy Assistant Secretary Leider's testimony and Disclosure form for Wednesday's hearing.

Thank you,

Jill

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Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

**Statement of  
Amanda Leiter  
Deputy Assistant Secretary, Land and Minerals Management  
U.S. Department of the Interior  
House Natural Resources Committee  
Subcommittee on Energy & Mineral Resources  
April 27, 2016**

Chairman Lamborn, Ranking Member Lowenthal, and Members of the Subcommittee, thank you for the opportunity to discuss the Bureau of Land Management's (BLM) proposed Methane and Waste Prevention Rule and its application to oil and gas operations on public and Indian lands. The BLM oil and gas program's highest priority is ensuring that the operations it authorizes on these lands are carried out in a safe and environmentally responsible manner that provides a fair return on the public resources. This proposed rule is critical to meeting that responsibility as we continue to offer millions of acres of public land for minerals development each year.

In support of the Administration's reform agenda for a cleaner, more secure energy future, the BLM's proposed rule requires oil and gas operators to take simple, cost-effective actions to reduce the venting, flaring, and leaking of natural gas during oil and gas operations on public and Indian lands. Adoption of these practices will help curb waste of our nation's natural gas supplies, provide a fair return on public resources for Federal taxpayers, Tribes and States, and reduce harmful methane emissions that contribute to climate change.

## **Background**

The BLM is responsible for protecting the resources and managing the uses of our nation's public lands, which are located primarily in 12 western States, including Alaska. The BLM administers more land – over 245 million surface acres – than any other Federal agency. The BLM also manages approximately 700 million acres of onshore Federal mineral estate throughout the nation, including the subsurface estate overlain by properties managed by other Federal agencies such as the Department of Defense and the U.S. Forest Service. In addition, the BLM, together with the Bureau of Indian Affairs (BIA), provides permitting and oversight services under the Indian Mineral Leasing Act of 1938 for approximately 56 million acres of land held in trust by the Federal government on behalf of Tribes and individual Indian owners. The BLM works closely with surface management agencies, including the BIA, tribal governments and other stakeholders, in the management of these subsurface resources. The BLM is also mindful of its responsibility for stewardship of public land resources and Indian trust assets that generate substantial revenue for the U.S. Treasury, the States, tribal governments, and individual Indian owners.

The BLM works diligently to fulfill its role in securing America's energy future, coordinating closely with its partners and other stakeholders to ensure that development of public and tribal oil and gas resources occurs in the right places and that oil and gas development projects are managed safely and responsibly. Since 2008, oil production is up 108 percent on lands where drilling requires a BLM permit. This doubling of production represents an even greater increase

than the 88 percent increase in oil production across all lands nationwide during that same time period. Production from mineral deposits managed by the BLM contributes to the nation's energy supplies and provides important economic benefits. For example, in FY 2015, onshore Federal oil and gas royalties exceeded \$2.1 billion, approximately half of which was paid directly to the States in which the development occurred. Also in FY 2015, tribal oil and gas royalties exceeded \$736 million, all of which was paid to the Tribes or individual Indian owners of the land where the development occurred.

In addition to overseeing this development, the BLM is responsible for ensuring that that production from more than 100,000 active wells is conducted in an environmentally responsible manner. To satisfy these responsibilities, the BLM works closely with lessees and operators to ensure that they implement best management practices and mitigate impacts.

### **Waste of Resources and Methane Emissions**

Domestic oil production is at its highest level in nearly 30 years, and the nation is now the largest natural gas producer in the world. Domestic natural gas provides an abundant source of clean-burning fuel to power and heat American homes and businesses. At the same time, venting, flaring, and leaks during oil and gas operations waste natural gas and generate harmful methane emissions. Methane is a powerful greenhouse gas (GHG), which is many times more potent than carbon dioxide. It is the primary component of natural gas and accounts for about nine percent of all U.S. GHG emissions. Almost one-third of U.S. methane emissions are estimated to come from oil and gas operations.

Currently, oil and gas operations on public and Indian lands lose vast amounts of natural gas. According to data provided by the Office of Natural Resources Revenue, between 2009 and 2014, 375 billion cubic feet of natural gas was lost through venting and flaring. This is enough gas to supply more than five million households for a year. Venting, flaring, and leaks of natural gas not only waste a valuable public resource and cause adverse environmental impacts, they also deprive States, Tribes and Federal taxpayers of potential royalty revenues – as much as \$23 million annually in royalty revenue for the Federal Government and the States that share it, according to a 2010 Government Accountability Office (GAO) report.

Absent additional steps to lower methane emissions from U.S. oil and gas operations, their emission levels are projected to increase. In 2015, the Administration announced a coordinated, cross-agency effort to cut methane emissions from the oil and gas sector by 40 to 45 percent from 2012 levels by 2025. The BLM's proposed rule would advance this goal.

### **Rulemaking Background**

The Mineral Leasing Act of 1920 (MLA), as amended, directs the Secretary of the Interior to lease Federal oil and gas resources, and to regulate oil and gas operations on those leases. The BLM has used this authority to develop regulations governing all aspects of oil and gas operations. The Indian Mineral Leasing Act extends this regulatory authority and the resulting rules to oil and gas leases on trust lands (except those lands specifically excluded by statute). Finally, the Federal Land Policy and Management Act of 1976 (FLPMA) directs the BLM to

manage the public lands using the principles of multiple use and sustained yield and to take appropriate actions to prevent unnecessary or undue degradation. In fulfilling these objectives, FLPMA requires the BLM to manage public lands in a manner that protects the quality of their resources, including ecological, environmental, and water resources. This statutory regime requires the BLM to balance responsible development with protection of the environment and public safety. The BLM works hard, together with its partners and stakeholders, to strike the appropriate balance and apply and enforce the applicable requirements fairly and consistently across all the lands where the BLM has oversight responsibilities.

The Mineral Leasing Act further requires the BLM to ensure that oil and gas operators “use all reasonable precautions to prevent waste of oil or gas.” The BLM’s current rules addressing venting, flaring, and leaks of natural gas were adopted over 30 years ago, long before innovative technologies unlocked vast new oil and natural gas supplies in the United States. Recent technological advances allow operators to produce more oil and gas with less waste. In fact, according to the 2010 GAO report, about 40 percent of natural gas now vented or flared from BLM-managed leases could be economically captured with currently available technologies. This GAO report, as well as reviews by the Inspector General, raised concerns about the waste of natural gas from operations on public and Indian lands and found the BLM’s existing requirements insufficient to prevent such waste.

In developing the proposed rule, the BLM conducted substantial outreach, including a series of public forums in 2014 and 2015 to consult with tribal and state governments and to solicit stakeholder views. The BLM held public meetings in Colorado, New Mexico, North Dakota, and Washington, D.C., as well as separate tribal outreach sessions, and accepted informal comments. The BLM released the proposed rule on January 22, 2016. Publication in the Federal Register on February 8 opened a 60-day formal comment period, which the BLM extended to April 22.

### **Proposed Rule**

The BLM’s proposed rule would minimize waste of natural gas from oil and gas operations on public and Indian lands, and reduce emissions that contribute to climate change. The commonsense and cost-effective measures proposed in the rule reflect recommendations from the above-mentioned GAO and IG reports, as well as the views of States, Tribes, industry, and other stakeholders.

The proposed rule aims to reduce flaring by phasing in, over several years, limits on the total quantity of gas that an operator may flare, on average, per well, per month, across a lease. It would also require operators to develop a waste minimization plan before they drill, laying out how the operator plans to capture and use or sell as much produced gas as possible.

The proposed rule also aims to reduce venting of gas. First, it would prohibit venting as a way to dispose of gas in most cases. Second, the proposed rule would require operators to replace outdated equipment, such as high bleed pneumatic devices that vent large quantities of gas to the atmosphere. Operators would also be required to limit venting from storage tanks and use best practices to reduce gas losses when they remove liquids from wells.

The proposed rule aims to reduce leaks by requiring operators to inspect their operations periodically, using currently available methods, such as audio, visual, and olfactory (AVO) methods and infra-red cameras. Operators would then be required to repair any leaks they find.

In addition, the proposed rule would clarify when operators owe royalties on vented and flared gas, thereby eliminating the current requirement for case-by-case approval of royalty-free venting and flaring. Also, consistent with current statutory authority, the proposed rule would give the BLM flexibility to set royalty rates at or above 12.5 percent of the value of production.

## **Projected Results**

Using conservative assumptions, the BLM estimates that the rule's benefits outweigh the costs, with monetized net benefits ranging from \$115 to \$188 million per year. These monetized benefits include revenues for oil and gas operators from the sale of recovered natural gas and the environmental benefits of reducing methane emissions. There are also other benefits from the rule that have not been monetized, such as the benefits to public health from reducing pollutants that form smog, and the visual and noise benefits to local communities from reducing nearby flaring. Many oil and gas operators are already voluntarily taking steps proposed in the rule to reduce wasted gas and improve operations, such as replacing pneumatic controllers. Phasing in certain requirements over several years would also reduce costs as already-planned pipeline infrastructure will come online in the interim, helping operators to meet the requirements. In addition, the rule provides for exemptions for operators that demonstrate that the costs of the requirements would cause them to shut in production. The BLM estimates that the annual cost to industry of implementing the rule will be \$125 to \$161 million, not accounting for the value of the saved gas. Small business operators may see profit margins reduced by roughly one tenth of one percent, on average.

By requiring operators to take these simple, common-sense actions to reduce waste, the BLM expects to reduce wasteful venting, flaring, and leaks by at least 40 percent. This would avoid nearly 170,000 tons of methane emissions per year, roughly equivalent to eliminating the GHG emissions from 860,000 to 890,000 vehicles. In addition, reducing venting and leaks would cut emissions of other air pollutants that contribute to smog and toxic air pollutants that can cause serious health effects. The proposed rule would also help reduce the light and noise impacts of flares on nearby residents and communities.

## **Interaction with EPA and State Regulations**

Several States, including Colorado, North Dakota, and Wyoming, as well as the U.S. Environmental Protection Agency (EPA), have also taken steps to limit venting, flaring, or leaks of natural gas. The BLM has worked to ensure that its proposed regulations would not impose conflicting or redundant requirements. In developing the proposed rule, the BLM looked to the States' requirements and worked closely with the EPA to align the agencies' proposals as much as possible, consistent with each agency's specific statutory authorities and responsibilities. Additionally, the BLM has proposed specific provisions to exempt operations covered by EPA requirements from comparable BLM requirements, and to allow States to apply for variances

from BLM requirements where State requirements achieve the same results. The BLM is continuing to coordinate with the EPA, as well as with individual States, to appropriately align and target the final regulations.

### **Conclusion**

The BLM's proposed regulations will reduce waste, increase returns to Federal taxpayers, Tribes and States, and protect our environment. These much needed updates to existing regulations will reduce impacts on local communities and climate change, while also ensuring continued development of the public's oil and gas resources. Thank you for the opportunity to present this testimony. I will be pleased to answer any questions you may have.

**COMMITTEE ON NATURAL RESOURCES**  
**114<sup>th</sup> Congress Disclosure Form**  
**As required by and provided for in House Rule XI, clause 2(g)(5)**

*“Bureau of Land Management’s Regulatory Overreach into Methane Emissions Regulation.”*

April 27, 2016

**For Individuals:**

Name:  
Address:  
Email Address:  
Phone Number:

\* \* \* \* \*

**For Witnesses Representing Organizations:**

Name: Amanda Leiter  
Name of Organization(s) You are Representing at the Hearing: U.S. Department of the Interior  
Business Address: 1849 C Street, NW, Rm. 5665, Washington, DC, 20240  
Business Email Address: amanda\_leiter@ios.doi.gov  
Business Phone Number: 202.208.3671

\* \* \* \* \*

**For Nongovernment Witnesses ONLY:**

1. Please attach/include current curriculum vitae or resume.
  
2. Please list any federal grants or contracts (including subgrants or subcontracts) related to the subject matter of the hearing that were received in the current year and previous two calendar years by you or the organization(s) you represent at this hearing, including the source and amount of each grant or contract.
  
  
  
  
  
  
  
  
  
  
3. Please list any contracts or payments originating with a foreign government related to the subject matter of the hearing that were received in the current year and previous two calendar years by you or the organization(s) you represent at this hearing, including the amount and country of origin of each contract or payment.



**From:** Feldgus, Steve  
**To:** ["Teitz, Alexandra"; Jill Moran](#)  
**Subject:** RE: quick call tomorrow?  
**Date:** Monday, April 25, 2016 5:13:41 PM

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Yep, sounds good. Any time before 3pm should work. Also, so you see more of my thought processes:

Ms. Leiter, the oil and gas industry has argued that under the Mineral Leasing Act, gas is only wasted if it could be economically captured. Is that what the Mineral Leasing Act says? *[No. There is no reference in the MLA to an economic test for waste. Section 225 says the operator must "use all reasonable precautions" to prevent waste. There is almost nothing in the MLA that relates to economics of oil and gas, except for the provisions that allow the Secretary to provide royalty relief.]*

**From:** Teitz, Alexandra [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Monday, April 25, 2016 5:11 PM  
**To:** Feldgus, Steve; Jill Moran  
**Subject:** quick call tomorrow?

Steve,

You may have already closed the loop with Jill, but should we do a quick call tomorrow to discuss hearing, per your email?

Thanks,  
Alexandra

Alexandra Teitz  
Counselor to the Director  
Bureau of Land Management  
202-208-3027

**From:** Moran, Jill  
**To:** [Feldgus, Steve](#)  
**Cc:** [Teitz, Alexandra](#)  
**Subject:** Re: quick call tomorrow?  
**Date:** Monday, April 25, 2016 5:16:21 PM

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Morning would be great so we have more time to chat with Amanda.

Alexandra, are you available in the AM?

On Mon, Apr 25, 2016 at 5:13 PM, Feldgus, Steve <[Steve.Feldgus@mail.house.gov](mailto:Steve.Feldgus@mail.house.gov)> wrote:

Yep, sounds good. Any time before 3pm should work. Also, so you see more of my thought processes:

Ms. Leiter, the oil and gas industry has argued that under the Mineral Leasing Act, gas is only wasted if it could be economically captured. Is that what the Mineral Leasing Act says? *[No. There is no reference in the MLA to an economic test for waste. Section 225 says the operator must “use all reasonable precautions” to prevent waste. There is almost nothing in the MLA that relates to economics of oil and gas, except for the provisions that allow the Secretary to provide royalty relief.]*

**From:** Teitz, Alexandra [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Monday, April 25, 2016 5:11 PM  
**To:** Feldgus, Steve; Jill Moran  
**Subject:** quick call tomorrow?

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Alexandra

Alexandra Teitz

Counselor to the Director

Bureau of Land Management

| 202-208-3027

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

**From:** Feldgus, Steve  
**To:** ["Teitz, Alexandra"; Moran, Jill](#)  
**Subject:** RE: quick call tomorrow?  
**Date:** Monday, April 25, 2016 5:18:52 PM

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Should we say 11am?

**From:** Teitz, Alexandra [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Monday, April 25, 2016 5:18 PM  
**To:** Moran, Jill  
**Cc:** Feldgus, Steve  
**Subject:** Re: quick call tomorrow?

Yes, I'm open except 10:00-10:30.

Alexandra Teitz  
Counselor to the Director  
Bureau of Land Management  
202-208-3027

On Mon, Apr 25, 2016 at 5:15 PM, Moran, Jill <[jcmoran@blm.gov](mailto:jcmoran@blm.gov)> wrote:  
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**Sent:** Monday, April 25, 2016 5:11 PM  
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Alexandra Teitz  
Counselor to the Director  
Bureau of Land Management  
202-208-3027

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Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

**From:** Riveland, Barbara  
**To:** [bruce.nelson@mt.usda.gov](mailto:bruce.nelson@mt.usda.gov); [ddlynch@usgs.gov](mailto:ddlynch@usgs.gov); [noreen\\_walsh@fws.gov](mailto:noreen_walsh@fws.gov); [roman.geissel@onrr.gov](mailto:roman.geissel@onrr.gov); [mcgrath.shaun@epa.gov](mailto:mcgrath.shaun@epa.gov); [wendy\\_ross@nps.gov](mailto:wendy_ross@nps.gov); [jraby@blm.gov](mailto:jraby@blm.gov); [melvin\\_burch@ost.doi.gov](mailto:melvin_burch@ost.doi.gov); [brivelan@blm.gov](mailto:brivelan@blm.gov); [lmarten@fs.fed.us](mailto:lmarten@fs.fed.us); [mary.podoll@nd.usda.gov](mailto:mary.podoll@nd.usda.gov); [timothy.lapointe@bia.gov](mailto:timothy.lapointe@bia.gov); [lisa.lund@nd.usda.gov](mailto:lisa.lund@nd.usda.gov); [aseidlitz@blm.gov](mailto:aseidlitz@blm.gov); [jim\\_james@ost.doi.gov](mailto:jim_james@ost.doi.gov); [amy.webbink@mt.usda.gov](mailto:amy.webbink@mt.usda.gov); [jdarnell@fs.fed.us](mailto:jdarnell@fs.fed.us); [austin\\_gillette@ost.doi.gov](mailto:austin_gillette@ost.doi.gov); [cam\\_sholly@nps.gov](mailto:cam_sholly@nps.gov); [jeffrey.hunt@bia.gov](mailto:jeffrey.hunt@bia.gov); [howard.bemer@bia.gov](mailto:howard.bemer@bia.gov); [larry.d.janis@usace.army.mil](mailto:larry.d.janis@usace.army.mil); [john.w.henderson@usace.army.mil](mailto:john.w.henderson@usace.army.mil); [david.pratt@mt.usda.gov](mailto:david.pratt@mt.usda.gov); [macarioherrera@fs.fed.us](mailto:macarioherrera@fs.fed.us); [beeler.cindy@epa.gov](mailto:beeler.cindy@epa.gov); [rferrero@usgs.gov](mailto:rferrero@usgs.gov); [rick.clifford@bia.gov](mailto:rick.clifford@bia.gov); [chris.marohl@mail.house.gov](mailto:chris.marohl@mail.house.gov); [kresta.faaborg@nd.usda.gov](mailto:kresta.faaborg@nd.usda.gov); [matt\\_hogan@fws.gov](mailto:matt_hogan@fws.gov); [dfriez@blm.gov](mailto:dfriez@blm.gov); [aaron.kruter@nd.usda.gov](mailto:aaron.kruter@nd.usda.gov); [casey.r.buechler@usace.army.mil](mailto:casey.r.buechler@usace.army.mil); [rharris@wapa.gov](mailto:rharris@wapa.gov); [ronald\\_hunt@ost.doi.gov](mailto:ronald_hunt@ost.doi.gov); [jon\\_cameron@hoeven.senate.gov](mailto:jon_cameron@hoeven.senate.gov); [rjohnsn@wapa.gov](mailto:rjohnsn@wapa.gov); [mryan@usbr.gov](mailto:mryan@usbr.gov); [kevin\\_shelley@fws.gov](mailto:kevin_shelley@fws.gov); [jmkilpat@usgs.gov](mailto:jmkilpat@usgs.gov); [lisa.coverdale@mt.usda.gov](mailto:lisa.coverdale@mt.usda.gov); [john.mehlhoff@onrr.gov](mailto:john.mehlhoff@onrr.gov); [darryl.lacounte@bia.gov](mailto:darryl.lacounte@bia.gov); [michael\\_thabault@fws.gov](mailto:michael_thabault@fws.gov); [jgallowa@usgs.gov](mailto:jgallowa@usgs.gov); David Rosenkrance  
**Subject:** April 2016 BFEG Mtg - review of draft notes; Optional Reply DD: 5/6  
**Date:** Monday, April 25, 2016 5:21:43 PM  
**Attachments:** [!Notes\\_April\\_2016\\_BFEG\\_Mtg-jr.docx](#)

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Good afternoon. Attached are the draft notes from the April BFEG meeting. Please review them and let me know of any changes by Friday, May 6. Any changes I receive will be incorporated into the final notes and then I'll post the notes to the Max.gov site and send you all an email & link.

Thanks much!!

Barb Riveland  
Management & Program Analyst  
BLM, Montana State Office  
Billings, MT 59101  
[brivelan@blm.gov](mailto:brivelan@blm.gov)  
(406) 896-5253

BAKKEN FEDERAL EXECUTIVES MEETING

DENVER, CO

APRIL 6-7, 2016

Attendees:

Name	Title	Role	Affiliation
Aden Seidlitz	Acting BLM State Director	BFEG Executive	BLM – Montana/Dakotas
David Rosenkrance	Dakotas Area Manager	Representing Mike Ryan	Bureau of Reclamation
Wendy Ross	T. Roosevelt NP Superintendent	Representing Cam Sholley	National Park Service
John Mehlhoff	Program Director, Coordination, Enforcement, Valuation, and Appeals		Office of Natural Resources Revenue (ONRR)
Austin Gillette	Fiduciary Trust Officer, Ft. Berthold	Representing Jim James	Office of Special Trustee for American Indians (OST)
Rick Clifford	Deputy Realty Specialist	Representing Tim LaPointe	Bureau of Indian Affairs
Macario Herrera	Acting DPG Supervisor	Representing Leanne Marten	Forest Service
Shaun McGrath	Regional Administrator, Region 8	BFEG Executive	Environmental Protection Agency (EPA)
Kresta Faaborg	Assistant State Conservationist	Representing Mary Podell	Natural Resources Conservation Service (NRCS), ND
Larry Janis	Chief, Recreation and Natural Resources	Representing Col. Henderson	US Army Corps of Engineers
Robin Johnson		Representing Robert Harris	Western Area Power Admin
Diane Friez	Eastern MT/Dakotas District Manager		BLM
Mel Burch	Reg. Fiduciary Trust Administrator		OST
Jeff Rupert	Bakken Interagency Coordinator		US Fish & Wildlife Service
Joel Galloway	Chief, Hydrologic Studies Section		USGS
Cindy Beeler	Energy Advisor, Region 8		EPA
Barb Riveland	Management & Program Analyst		BLM
Chris Marohl*	Legislative Director		Representative Cramer
Jon Cameron	Regional Director, Western ND		Senator Hoeven
Ron Ness*	President		ND Petroleum Council
Kari Cutting*	Vice President		ND Petroleum Council
Tim Spisak*	Deputy Asst. Director, Minerals & Realty Management		BLM
David Pratt*	Asst. State Conservationist for Field Operations		NRCS, Montana
Todd Linqvist*	Garrison Project Manager		US Army Corps of Engineers
Casey Buechler*	Lake Manager, Lake Sakakawea		US Army Corps of Engineers
Amy Webbink*	Chief Administrative Officer		Farm Services Agency, Montana

\*Joined meeting by conference call

## BAKKEN FEDERAL EXECUTIVES MEETING

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Aden Seidlitz: Aden welcomed the group and thanked everyone for attending. Aden set the stage and described that the current down turn in the oil activity provides opportunity to address issues that we didn't have time to address when we were in crisis mode during the booming activity.

### **Agency Updates and current concerns/challenges:**

- David Pratt (NRCS, MT): Recruitment and retention continues to be an issue; concerned and dealing with resource damage issues.
- John Mehlhoff (ONRR): Concerned with correlative and royalty rights associated with long lateral well bores. It's a challenge both technically and administratively. The states - Wyoming, Montana and North Dakota - all handle the issue differently.
- Robin Johnson (WAPA): Concerned with the special salary rates and the annual renewal of the special rates. How are other agencies dealing with these issues?
- Macario Herrera (FS): Dealing with 'right-sizing' the organization in light of the decline of oil and gas activity. Trying to balance the workforce with current workloads but also be prepared to address an uptick in activity.
- Kresta Faaborg (NRCS, ND): Housing was a big issue, it has leveled off. Restoration/rehab plans - types of seeding/species. Concerns with salt water spills.
- Larry Janis (US ACE): Concerns as closures occur on some projects – some dating back to the early 80's – concerns include contamination left behind, ability to hold responsible parties accountable. Concerns with pipelines/spills. Moving forward, we need to make sure we do a good job of evaluating and planning for the future.
- Aden Seidlitz (BLM): Still having some recruitment & retention issues, but we're still hiring. Disparity with the pay initiatives. On the permitting side – we continue to look for processing, efficiencies. AFMSS II is being implemented – which is causing some problems. Company bankruptcies. New policies and implementation of new policies is causing some challenges.
- Cindy Beeler (EPA): Concerns include brine/processed water spills. Looking at authorities that will enable EPA to respond more timely to these types of emergencies. Concerned with emissions from existing oil and gas sources – beginning to use aerial surveys with infrared cameras that can detect emissions. Water quality monitoring continues to be a concern.
- Rick Clifford (BIA): Even with the decline in oil activity, the BIA hasn't seen a let up in their workloads. Dealing with 200+ trespass cases. Having water depots issues. Continue to assist the tribes with work; currently working on transfer of 34,000 acres from the Corps to BIA.
- Wendy Ross (NPS): The National Park Services is celebrating their Centennial this year, so looking forward to a busy season. Visitation to T. Roosevelt Nat'l Park (TRNP) is up 35% and managing with a small staff. On the oil front, the NPS works with oil companies proactively to deal with and mitigate the impacts. Prior to implementing a 10% across the board retention incentive, the TRNP experienced an 87% turnover rate. Housing is still an issue, but is improving somewhat. Want to make sure as we move forward, we have a framework to be responsive to the needs of the field when things pick up.
- David Rosenkrance (BOR): Dealing with recruitment and retention of employees; concerns of disparities among series of special salary rates.
- Joel Galloway (USGS): The USGS offices have not been highly impacted by the oil activity. USGS is a science agency and a technical source of information addressing natural resource issues.



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- Mel Burch (OST): The OST provides financial education/planning, money management, and investment recommendations to Native Americans. The agency encourages asset retention. Native Americans need assistance in estate planning and financial planning with the decline and end of cash for flow for some. Working with the education system to get financial literacy into the curriculum. OST has several vacancies they've been trying to fill – housing continues to be an issue. Need stability in the staff.
- Austin Gillette (OST): Trust responsibility is big issue; \$2.9 billion has been paid to Ft. Berthold; \$1.7 to allottees; \$1.2 to the tribes. OST strives to provide financial literacy to all age groups – youth, through the boys and girls clubs, college-aged, and elders.
- Casey Buechler (USACE): Trying to be proactive and transparent in the field on issues. Held a public meeting to discuss O&G issues and pipelines across the Lake.

### **BFEG Updates:**

Jeff Rupert: Discussed MOU updates. Updates to the MOU include: Added WAPA as a member agency; renamed the Permitting and Resources subcommittees; added verbiage regarding agency representation; more clearly defined 'consensus' as it applies to the group; added Collaboration/Governance and Decision Making sections; and, added section on Membership Eligibility Criteria.

- Robin Johnson: WAPA's legal counsel requested the following citation be added to the MOU.  
*Department of Energy Organization Act, (P.L. No. 95-91, 91 Stat. 565), 42 U.S.C. §§7101-7352.*

**Action Item:** Add citation to MOU.

- Clarification on the recommendation/consideration of a BFEG safety subcommittee. BFEG members who attended the fall 2015 meeting where the safety subcommittee was discussed, clarified that the consensus at that meeting was to recommend a safety subcommittee NOT be established. If issues arose within the safety realm, they would be referred to the HR subcommittee for consideration.

**Action Item:** Send Final MOU to BFEG Members for digital signature.

**Max.gov Site:** The Max site is an online collaboration site. The BFEG documentation is being housed on the site for access by all members. Jeff is organizing information on the site and can help resolve member access issues.

### **SUBCOMMITTEE UPDATES:**

*Human Resources Subcommittee – (Handout) Wendy Ross & Chuck Sandau:*

- Experiencing lack of agency participation on the subcommittee, which is frustrating. Would like each agency to designate a representative.
- Agencies are implementing pay adjustments in a variety of ways. Some are using incentives pay, others are using the Special Salary Rates (SSR), and some didn't implement any pay adjustments. WAPA has requested more series be added under the SSR. NRCS noted there are inconsistencies in the SSR between like job series (401 series and certain specialist series).
- The HR subcommittee developed a table showing the actions by agency. Not all agencies reported their actions. This is a good venue to stay informed of what other agencies are doing regarding pay

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adjustments. Discussed monitoring the effectiveness of the pay incentives; how long do we keep the incentives?

- Amy Webbink (FSA) commented that is critical to continue sharing information; agencies are structured differently, so implementation will vary amongst agencies.
- Larry Janis (US ACE) have concerns removing some of the incentive pays and it will be important to manage the consequences. Information is good – it would be beneficial to get some cross-agency talking points as agencies begin to remove incentive pays.
- As agencies remove or make changes to incentive pay, it would be helpful to share the information with other BFEG agencies.

*Permitting Subcommittee* – ([PowerPoint](#)) Larry Janis: Larry presented the PowerPoint outlining the key goals, objectives and action items of the subcommittee. Many of the actions of the Permitting Subcommittee are being met through various venues and efforts.

- APD streamlining/efficiencies
- Leasing process streamlining
- Spills/spill response

**Result:** Permitting Subcommittee Recommendation Paper was acknowledged as complete with no need to further develop existing or new recommendations.

*Resources Subcommittee* – Joel Galloway:

- The subcommittee has added two members representing the cultural resources.
- The Forest Service voiced a concern regarding emergency response actions (example: wildland fire response) causing damage to cultural sites.

BEST Report Update: Joel Galloway presented a PowerPoint presentation to the group of the progress of the BEST Report ([PowerPoint](#)).

- There was discussion on the technical review of the chapters.
- Cindy Beeler mentioned it would be helpful to spotlight data gaps in document and summarized

**Action Item:** USGS to provide a detailed timeline for completion of the BEST Report

**Action Item:** As the BEST report is finalized, the USGS will coordinate with BFEG members to provide an opportunity to review the report.

**Pipeline Coordination** – Larry Janis ([Recommendation Paper](#))

- Larry presented a recommendation paper addressing pipeline coordination issues. There have been on-going challenges for the agencies involved.
- Diane Friez commented that the issue would definitely benefit from some coordination efforts.

**Decision:** Use the BFEG as a forum to provide recommended changes.

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**Action Item:** Assigned to the Permitting Subcommittee to develop a recommendation for an initiative to streamline the pipeline review and approval process.

### **DAILY WRAP-UP**

#### **Action Items:**

- Send out subcommittee lists to the execs to update.
- Define the specific expectations of subcommittees/members
- Post all material to Max.gov site

### **April 7, 2016 – Thursday**

Tribal Update/Perspective: Chairman Fox was unable to attend the meeting.

- Aden asked the BFEG what tribal/trust issues they are facing and if/how the BFEG can assist in resolving.
  - OST (Austin & Mel): Responsible for financial literacy training. Their training is geared toward college-aged; elders; and youth. Working with Director of Indian Education to get a financial education curriculum into schools with large Native American student populations. Reaching out to tribal members with the Land Buy Back program and helping with financial assistance. OST handles money for other agencies that have trusts for the tribes.
  - BIA (Rick): The BIA is in the midst of resolving some of the ownership/boundary issues along the Missouri and Little Missouri Rivers between the State and Tribe. Rick also mentioned that the statements from ONRR that go out to the tribal members are very difficult to decipher. The BIA often gets requests for assistance in reading the statements.
  - Fort Berthold Working Group (Diane): At the last Ft. Berthold WG meeting, a discussion was held regarding conflicting regulations between tribes and federal agencies. Chairman Fox asked Jeff Hunt to address with the Indian Energy and Minerals Steering Committee (IEMSC).
  - EPA (Cindy): Working with the tribe on trespass from surface injection wells. If the water enters into tribal lands, is it trespass? The Tribe is considering how to handle.

### **SPILLS:**

- Spills and the impacts from spills were concerns voiced by a number of agencies. The concerns include responses to spills, jurisdiction, impacts and restoration of sites, environmental impacts, air/water contamination, education, communication, response training, media, etc.
  - Shaun McGrath EPA gets involved with most spills. Pipeline spills across rivers; transportation – rail/truck; crude vs. water; training exercises; winter spills.
  - Cindy Beeler: The EPA Region 8 office has convened an internal team comprised of attorneys and technical people to investigate our authorities to respond to produced water spills – our authorities are much clearer with oil and in particular with oil spills that make it to waters. This team will look at ways to more quickly get to appropriate and informative sampling as well as remediation.
  - Larry Janis: The mission statement of the permitting subcommittee includes spill response. Spill response is a very convoluted subject due to the different agencies/state/land status/types of spills, etc.

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- Shaun: Is there one thing we can pick from the broad spill category and assign to the Permitting subcommittee to address?

**Result:** Group recognizes the need for spill coordination and resolving authority issues related to produced water spills.

### **INDUSTRY PERSPECTIVE:** ([NDPC PowerPoint](#)):

- Eric Dille' (EOG Resources) representing the North Dakota Petroleum Council presented a PowerPoint presentation on the outlook of the Bakken from an industry perspective.
- Ron Ness and Kari Cutting joined the discussion via conference call.

**Action Item:** Send Jon Cameron the NDPC PowerPoint

### **CONGRESSIONAL UPDATES:**

- Chris Marohl (Legislative Director for Congressman Cramer):
  - The Congressman is very supportive of the BFEG group and has written letters of support for several BFEG efforts.
  - Working on trying to extend the comment periods for several Federal rulemaking efforts for stakeholders to ensure input is received
  - Support advancing training/resources for emergency services
  - Working on the reauthorization for the authority for Pipeline and Hazardous Materials Safety Administration (PHMSA). Discussed the PHMSA authority.
  - Looking forward to joining the National Park Service's Centennial celebrations.

### **Jon Cameron (Western North Dakota Regional Director for Senator Hoeven):**

- Senator Hoeven values the group and appreciates what you're doing
- Concerns about Federal rulemaking efforts and has worked to get comment periods extended
- Senator Hoeven is in favor of a common sense approach
- Feels strongly about a states-first standard. Would like to see some consistency among the agencies that property owners have to deal with.
- Hears concerns regarding timely processing of APDs. The state issues permits in 30 to 45 days; feds take 6 months or more.
- Concerns with tanker car and pipeline safety
- Senator Hoeven is also looking forward to celebrating the NPS Centennial.
- Jon provided an example of success when the agencies, lawmakers, and constituents work together to solve problems: the USDA did not have the ability to carry Conservation Practice (CP) credits from one year to the next. Working with the grazing district and Chief of the Forest Service, Tom Tidwell, we have added language to a bill to carry those over. A press release was just issued.
- Larry Janis asked what possibility is of amending a bill in today's environment - for example the Mineral Leasing Act? Jon responded that given the current make-up of the Congress and President and political division, he doesn't see anything moving forward.
- Both Jon and Chris described that there is still a benefit to proposing new legislative language so that it can be vetted for potential inclusion in future proposed bills and amendments.

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### **BLM Rulemaking Update:**

Tim Spiszak, Senior Advisor, Conventional Energy and Project Lead for Waste Prevention Rule

Summary of the rules:

- Outstanding Rules:
  - *Hydraulic fracturing Rule*. Rule was finalized last June, but is currently under court stay.
  - *Changes to On-Shore Oil and Gas Order 3*. These updates strengthen standards for ensuring oil and gas produced from Federal and Indian onshore leases are properly and securely handled. This is Industry focused. Working to finalize. Don't need to go through OMB. Expected to be out within 90 days – June timeframe.
  - *Waste Prevention Rule*: This rule addresses venting and flaring on public and Indian Lands and would require producers to adopt available technologies, processes and equipment; require operators to inspect their operations for leaks; limit venting from storage tanks and use best practices to limit gas losses when removing liquid from wells; clarify when operators owe flared gas and ensure BLM's regulations provide congressionally authorized flexibility to set royalty rates at or above 12.5% of the value of production. This rule would update 30+ year-old rules.
    - The BLM has conducted outreach meetings with the public and with the tribes in Farmington (~700 attended), Oklahoma City (~100 attended) and Denver and Dickinson (~200 attended at each location)
    - Reducing flaring– the waste minimization plan is patterned after the state of North Dakota requirements– the company will be required to submit a pre-drill gas capture plan to the BLM; there will be flaring limits per well to ensure the gas is captured for more productive uses; with mixed ownership, it is critical to work cohesively to implement rules/policies.
    - Reducing leaks: The rule implements requirements to prevent/detect leaks during drilling operations; implements a leak detection program which would require inspection of wells; lays out methods of detection, means to grow the technology. Inspection frequency 2 times a year, but dependent on number of leaks found. Similar to EPA's proposed rule requiring leak detection and repair requirements. Received many comments on this issue.
    - Reducing venting. Requirements are similar to EPA's proposed rules in Colorado and Wyoming requiring new or modified devices and pumps.
    - Clarifying Royalty Provisions: Modifies existing regulations which sets the royalty rate at 12.5% and leaves the BLM no discretion to raise the rate as conditions change. The proposed revision would allow the royalty rate to be set at or above 12.5% for new competitive leases, consistent with the Mineral Leasing Act. The proposed rule also clarifies that royalties would apply only to gas flared from wells already connected to gas capture infrastructure. When gas is royalty bearing; unavoidable lost considered royalty free vs. avoidable lost is royalty bearing. Just codifying the legal accepted practice for avoidable/unavoidable lost.
    - The comment period has been extended to April 22.

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- So far, less than 200 comments have been received – expecting more by deadline. Goal is to get the Rule finalized by the end of the year.

**BFEG Next Steps & Daily Wrap Up:**

**HR.** More in-depth discussion about what products/actions are being tasked to the HR subcommittee.

Wendy Ross: Keep communication open; need bureau participation/commitment. Members agreed that awareness/knowledge/info sharing process is important.

Larry Janis: reiterated value of understanding the thresholds for removing incentives. Members agreed.

**Result:** Agencies should keep the HR subcommittee/representative informed as their pay policies change. This will be valuable information to share.

**Action item:** HR Subcommittee will continue to keep table updated for BFEG meetings and as information changes and is provided by the agencies. The table will be posted on the Max site.

**Action item:** HR Subcommittee will develop a briefing paper that describes the likely conditions that would lead to a decision to remove incentives.

**Permitting.** Discussion around APD and permitting: Larry addressed a question regarding capacity & processing of APDs. Described that the group felt that there is evidence that 95% APDs completed within 120 days. There are lot of process issues (incomplete apps/consultation/etc.) that impact the timeframes.

**Action Item:** The Permitting Subcommittee will proceed with pipeline recommendation & update BFEG at next meeting (noted in Subcommittee section).

**Action Item:** Develop a recommendation paper for assignment to Permitting Subcommittee (Permitting has spill response identified as a key objective) to develop a clearer understanding of the process to be followed for emergency spoil response, including development of a communication plan addressing collaborative response. Recommendation should determine skills and team composition needed.

**Action Item:** Cultural Impacts: The Forest Service will develop recommendation paper for the Resources Subcommittee to develop best management practices to minimize cultural impacts due to wildfire and emergency management activities for the next BFEG meeting

**Next BFEG conference call will be scheduled for Wednesday, July 27 from 9:00 to 11:00 AM (MT)**

**Result:** BFEG will consider the location/time of future meetings to more easily coordinate with tribal partners and Ft. Berthold WG meetings.

**From:** Moran, Jill  
**To:** [Feldgus, Steve](#)  
**Cc:** [Teitz, Alexandra](#); [Meagan Gins](#)  
**Subject:** Re: quick call tomorrow?  
**Date:** Monday, April 25, 2016 5:41:40 PM

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11:00 works for me. Here's a call-in #:

(b) (5)  
passcode: (b) (5)

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**To:** Moran, Jill  
**Cc:** Feldgus, Steve  
**Subject:** Re: quick call tomorrow?

Yes, I'm open except 10:00-10:30.

Alexandra Teitz  
Counselor to the Director  
Bureau of Land Management  
202-208-3027

On Mon, Apr 25, 2016 at 5:15 PM, Moran, Jill <[jcmoran@blm.gov](mailto:jcmoran@blm.gov)> wrote:

Morning would be great so we have more time to chat with Amanda.

Alexandra, are you available in the AM?

On Mon, Apr 25, 2016 at 5:13 PM, Feldgus, Steve <[Steve.Feldgus@mail.house.gov](mailto:Steve.Feldgus@mail.house.gov)> wrote:

Yep, sounds good. Any time before 3pm should work. Also, so you see more of my thought processes:

Ms. Leiter, the oil and gas industry has argued that under the Mineral Leasing Act, gas is only wasted if it could be economically captured. Is that what the Mineral Leasing Act says? *[No. There is no reference in the MLA to an economic test for waste. Section 225 says the operator must “use all reasonable precautions” to prevent waste. There is almost nothing in the MLA that relates to economics of oil and gas, except for the provisions that allow the Secretary to provide royalty relief.]*

**From:** Teitz, Alexandra [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Monday, April 25, 2016 5:11 PM  
**To:** Feldgus, Steve; Jill Moran  
**Subject:** quick call tomorrow?

Steve,

You may have already closed the loop with Jill, but should we do a quick call tomorrow to discuss hearing, per your email?

Thanks,

Alexandra

Alexandra Teitz

Counselor to the Director

Bureau of Land Management

202-208-3027

--

Jill Moran

Bureau of Land Management

Legislative Affairs Specialist



202.912.7411

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

**From:** Feldgus, Steve  
**To:** "Moran, Jill"  
**Cc:** Teitz, Alexandra; Meagan Gins  
**Subject:** RE: quick call tomorrow?  
**Date:** Monday, April 25, 2016 5:43:50 PM

---

Sounds good. Talk to you then!

**From:** Moran, Jill [mailto:jcmoran@blm.gov]  
**Sent:** Monday, April 25, 2016 5:41 PM  
**To:** Feldgus, Steve  
**Cc:** Teitz, Alexandra; Meagan Gins  
**Subject:** Re: quick call tomorrow?

11:00 works for me. Here's a call-in #:

(b) (5)  
passcode: (b) (5)

On Mon, Apr 25, 2016 at 5:18 PM, Feldgus, Steve <[Steve.Feldgus@mail.house.gov](mailto:Steve.Feldgus@mail.house.gov)> wrote:  
Should we say 11am?

**From:** Teitz, Alexandra [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Monday, April 25, 2016 5:18 PM  
**To:** Moran, Jill  
**Cc:** Feldgus, Steve  
**Subject:** Re: quick call tomorrow?

Yes, I'm open except 10:00-10:30.

Alexandra Teitz  
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Bureau of Land Management  
202-208-3027

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Yep, sounds good. Any time before 3pm should work. Also, so you see more of my thought processes:

Ms. Leiter, the oil and gas industry has argued that under the Mineral Leasing Act, gas is only wasted if it could be economically captured. Is that what the Mineral Leasing Act says? *[No. There is no reference in the MLA to an economic test for waste. Section 225 says the operator must "use all reasonable precautions" to prevent waste. There is almost nothing in the MLA that relates to economics of oil and gas, except for the provisions that allow the Secretary to provide royalty relief.]*

**From:** Teitz, Alexandra [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Monday, April 25, 2016 5:11 PM  
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**Subject:** quick call tomorrow?

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Thanks,  
Alexandra

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Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

**From:** Campbell, Michael  
**To:** [Mary Gautreaux](#); [Wayne Kinney](#); [Jody Weil](#); [Mark Brown](#)  
**Subject:** Wilderness Characteristics Inventory Review for BLM Lakeview and Vale Districts  
**Date:** Monday, April 25, 2016 6:44:54 PM  
**Attachments:** [Wilderness Characteristics Inventory Review Information 4-16.pdf](#)

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Mary and Wayne:

Just wanted to drop you a quick note to tell you that we just released a Wilderness Characteristics Inventory Review for the BLM's Lakeview and Vale Districts. Over the last several years, Oregon BLM Districts have been updating inventories to determine the presence or absence of wilderness characteristics. A review of Lakeview and Vale District inventory documentation was conducted and supplemented by field reviews.

Its purpose was to determine the degree of compliance by both the Vale and Lakeview BLM Districts with wilderness characteristics inventory guidance found in BLM Manual 6310, Conducting Wilderness Characteristics Inventory on BLM Lands, and the earlier draft Oregon Handbook H-6300-1, Wilderness Inventory Maintenance in BLM Oregon/Washington. The review report found instances where wilderness characteristics inventory criteria were not applied in accordance with current interpretations that have evolved with practice, resulting in the need to revisit associated analyses and conclusions about whether an area possesses wilderness characteristics. Wherever such instances occurred, the inventory updates will need to be reassessed as per the clarified guidance in the report's recommendations.

The Vale and Lakeview Districts will be reviewing their inventory updates to determine how many areas need re-assessment in light of the review report's findings and recommendations. They are developing processes to reassess each of the pertinent units, and will then be able to provide reasonable estimates of the time frame necessary to complete the inventories. We anticipate it will take approximately 12 months to complete these reassessments and other inventory needs. The Southeast Oregon and Lakeview Resource Management Plan amendment processes would begin at the conclusion of the wilderness characteristics inventory reassessments and other pertinent baseline inventories.

Attached is some additional information about the review. If you want to look at the complete review, it's available for download here:

<http://www.blm.gov/or/resources/nlcs/files/wcireview.pdf>

Feel free to contact me with any questions.

Michael Campbell  
Oregon/Washington Bureau of Land Management  
Communications  
P: 503.808.6031  
F: 503.808.6333  
C: 503.367.7089

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TWITTER: [www.twitter.com/blmoregon](http://www.twitter.com/blmoregon)

**Wilderness Characteristics Inventory Review for BLM Lakeview and Vale Districts  
Oregon/Washington Bureau of Land Management  
April 2016**

- Over the last several years, Oregon BLM Districts have been updating inventories to determine the presence or absence of wilderness characteristics. A review of Lakeview and Vale District inventory documentation was conducted and supplemented by field reviews.
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- As required by the Federal Land Policy & Management Act (FLPMA), the BLM conducted wilderness inventories primarily in the 1980s. In 2008, the 9th Circuit Court of Appeals, in *ONDA v. BLM* (No. 05-35931, 9th Cir.), vacated the Southeast Oregon Resource Management Plan (RMP) for not keeping those inventories current, as per FLPMA Section 201. At the time of the decision, the Lakeview RMP was also before the 9th Circuit on similar claims. In a Settlement Agreement with the Oregon Natural Desert Association (ONDA) and others, the BLM committed to updating its inventories and amending the two RMPs to consider future management of areas found to possess wilderness characteristics. Both Vale and Lakeview Districts have been updating their wilderness characteristics inventories as per the Settlement Agreement.
- The review report found instances where wilderness characteristics inventory criteria were not applied in accordance with current interpretations that have evolved with practice, resulting in the need to revisit associated analyses and conclusions about whether an area possesses wilderness characteristics. Wherever such instances occurred, the inventory updates will need to be reassessed as per the clarified guidance in the report's recommendations.
- The Vale and Lakeview Districts will be reviewing their inventory updates to determine how many areas need re-assessment in light of the review report's findings and recommendations. They are developing processes to reassess each of the pertinent units, and will then be able to provide reasonable estimates of the time frame necessary to complete the inventories. We anticipate it will take approximately 12 months to complete these reassessments and other inventory needs. The Southeast Oregon and Lakeview Resource Management Plan amendment processes would begin at the conclusion of the wilderness characteristics inventory reassessments and other pertinent baseline inventories.
- The RMP Amendment process is identical to that of the RMP process, but addresses a much narrower scope of issues within the larger plan. It is a well-documented process with defined opportunities for public review and comment. A range of alternatives will be analyzed, ranging from managing lands for the protection of their wilderness characteristics, using standard land use plan-level management tools, to providing no special protection for such lands.



**From:** Campbell, Michael  
**To:** [Dan Whelan](#); [Chang, Phil \(Merkley\)](#); [Amy Amrhein](#)  
**Subject:** Wilderness Characteristics Inventory Review for BLM Lakeview and Vale Districts  
**Date:** Monday, April 25, 2016 6:46:57 PM  
**Attachments:** [Wilderness Characteristics Inventory Review Information 4-16.pdf](#)

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Dan, Phil, and Amy:

Just wanted to drop you a quick note to tell you that we just released a Wilderness Characteristics Inventory Review for the BLM's Lakeview and Vale Districts. Over the last several years, Oregon BLM Districts have been updating inventories to determine the presence or absence of wilderness characteristics. A review of Lakeview and Vale District inventory documentation was conducted and supplemented by field reviews.

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The Vale and Lakeview Districts will be reviewing their inventory updates to determine how many areas need re-assessment in light of the review report's findings and recommendations. They are developing processes to reassess each of the pertinent units, and will then be able to provide reasonable estimates of the time frame necessary to complete the inventories. We anticipate it will take approximately 12 months to complete these reassessments and other inventory needs. The Southeast Oregon and Lakeview Resource Management Plan amendment processes would begin at the conclusion of the wilderness characteristics inventory reassessments and other pertinent baseline inventories.

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<http://www.blm.gov/or/resources/nlcs/files/wcireview.pdf>

Michael Campbell  
Oregon/Washington Bureau of Land Management  
Communications  
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C: 503.367.7089

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FLICKR: [www.flickr.com/photos/blmoregon](http://www.flickr.com/photos/blmoregon)  
TWITTER: [www.twitter.com/blmoregon](http://www.twitter.com/blmoregon)

**Wilderness Characteristics Inventory Review for BLM Lakeview and Vale Districts  
Oregon/Washington Bureau of Land Management  
April 2016**

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**From:** Campbell, Michael  
**To:** [riley.bushue@mail.house.gov](mailto:riley.bushue@mail.house.gov); [Nick Strader](#)  
**Subject:** Wilderness Characteristics Inventory Review for BLM Lakeview and Vale Districts  
**Date:** Monday, April 25, 2016 6:48:11 PM  
**Attachments:** [Wilderness Characteristics Inventory Review Information 4-16.pdf](#)

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## Riley and Nick:

Just wanted to drop you a quick note to tell you that we just released a Wilderness Characteristics Inventory Review for the BLM's Lakeview and Vale Districts. Over the last several years, Oregon BLM Districts have been updating inventories to determine the presence or absence of wilderness characteristics. A review of Lakeview and Vale District inventory documentation was conducted and supplemented by field reviews.

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Feel free to contact me with any questions.

Michael Campbell  
Oregon/Washington Bureau of Land Management  
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TWITTER: [www.twitter.com/blmoregon](http://www.twitter.com/blmoregon)



**Wilderness Characteristics Inventory Review for BLM Lakeview and Vale Districts  
Oregon/Washington Bureau of Land Management  
April 2016**

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**From:** Feldgus, Steve  
**To:** [Moran, Jill](#)  
**Subject:** New GHG numbers  
**Date:** Tuesday, April 26, 2016 11:07:52 AM  
**Attachments:** [EMR 4-27-16 Methane V&F Oversight Memo.pdf](#)  
[EPA 2016 GHG Inventory - Executive Summary.pdf](#)  
[EPA - Revisions to Nat Gas & Pet Production Emissions - April 2016.pdf](#)  
[EPA 2014 GHG Inventory - Energy Chapter.pdf](#)

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<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport.html>

The Energy Chapter has the most detailed numbers... the revisions document just explains why their estimates changed so much.

APRIL 25, 2016

**TO: DEMOCRATIC MEMBERS AND STAFF,  
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES**

**FROM: ENERGY AND MINERAL RESOURCES SUBCOMMITTEE STAFF (X5-6065)**

**RE: LEGISLATIVE HEARING ON BLM'S METHANE VENTING & FLARING RULE**

---

The Subcommittee on Energy and Mineral Resources will hold a legislative hearing on **Wednesday, April 27, 2016, at 10:00 am, in Longworth House Office Building Room 1324** on, "*Bureau of Land Management's Regulatory Overreach into Methane Emissions Regulation.*"

**WITNESSES**

Ms. Amanda Leiter  
Deputy Assistant Secretary for Land and Minerals Management  
U.S. Department of the Interior

Mr. Lynn D. Helms  
Director  
North Dakota Department of Mineral Resources

Mr. Mark Watson  
Oil and Gas Supervisor  
Wyoming Oil and Gas Conservation Commission

The Honorable Shawn Bolton  
Rio Blanco County (CO) Commissioner

The Honorable Gwen Lachelt  
La Plata County (CO) Commissioner

**SUMMARY**

On February 8, 2016, the Bureau of Land Management (BLM) published a proposed rule to reduce the amount of methane lost from venting, flaring, and leakage on federal leases, and to provide additional flexibility in setting royalty rates for onshore oil and gas leases. The original 60-day comment period was extended by 15 days and ended on April 22, 2016. Environmental groups have strongly supported this rule, as well as other administration efforts to curb methane emissions, as methane is an extremely potent greenhouse gas, with over 80 times the global warming impacts of carbon dioxide over a 20-year period. The oil and gas industry has strongly opposed the BLM rule, claiming that it is unnecessary, duplicative, and will only serve to drive oil and gas operations off federal lands. The industry also

claims that the reason natural gas needs to be flared in most cases is because of the slow pace of approvals for natural gas gathering pipelines.

Republican members will most likely claim that this is an example of BLM overriding state regulations and regulating air quality, which is within the purview of the Environmental Protection Agency. However, it cannot be stressed enough that **BLM regulations do not preempt state regulations: companies operating on federal land must also meet all state and local regulations.** States are still free to regulate as they see fit, and if a state has more stringent regulations than BLM, companies must meet the state standard. Also, BLM has been very clear that they are not regulating air quality, they are regulating waste. Furthermore, BLM has regulated venting and flaring under a document called NTL-4A for over 35 years.

**BACKGROUND**

Methane (CH<sub>4</sub>) is an extremely potent greenhouse gas, with approximately 25 times the heat-trapping ability of carbon dioxide over a 100-year period. According to figures released this month by the Environmental Protection Agency (EPA), methane was responsible for 10.6 percent (730.8 million metric tons of carbon dioxide equivalent (MMT CO<sub>2</sub> Eq.)) of U.S. greenhouse gas emissions in 2014, an increase of 1.3 percent over 2013 levels and 1.9 percent over 2005 levels, but a decrease of 5.6 percent from 1990 levels. The largest single contributor to methane emissions are natural gas systems (including natural gas production, processing, transmission, storage, and distribution), followed by livestock, landfills, and petroleum systems (see Table 1). The most recent data included a significant upward revision of methane emission estimates from the energy sector in recent years, due to additional studies and better data. **Claims that methane emissions from oil and gas have been decreasing in recent years are based on old EPA data.**

**Table 1.** Methane Emissions 1990 – 2014 (MMT CO<sub>2</sub> Eq.)

Source	1990	2005	2010	2011	2012	2013	2014
<b>Total</b>	<b>773.9</b>	<b>717.4</b>	<b>722.4</b>	<b>717.4</b>	<b>714.4</b>	<b>721.5</b>	<b>730.8</b>
Natural Gas Systems	206.8	177.3	166.2	170.1	172.6	175.6	176.1
<i>Field Production</i>	83.4	108.1	108.3	108.8	111.1	110.7	109.0
<i>Processing</i>	21.3	16.4	17.9	21.3	22.3	22.6	24.0
<i>Transmission &amp; Storage</i>	58.6	30.7	27.5	28.8	27.9	30.8	32.1
<i>Distribution</i>	43.5	22.1	12.5	11.2	11.4	11.5	11.1
Enteric Fermentation (Livestock)	164.2	168.9	171.3	168.9	166.7	165.5	164.3
Landfills	179.6	154.0	142.1	144.4	142.3	144.3	148.0
Petroleum Systems	38.7	48.8	54.1	56.3	58.4	64.7	68.1
<i>Field Operations</i>	38.0	48.0	53.3	55.4	57.5	63.9	67.4
<i>Crude Transportation</i>	0.2	0.1	0.1	0.1	0.2	0.2	0.2
<i>Refining</i>	0.6	0.7	0.6	0.7	0.7	0.6	0.6
Other Sources	184.6	168.4	188.7	177.7	174.4	172.2	174.3

*Source: U.S. Greenhouse Gas Inventory Report: 1990-2014 (April 2016)*

*Numbers may not add due to rounding.*

In March 2014, the Obama Administration unveiled their Strategy to Reduce Methane Emissions as part of the Climate Action Plan, which included planned steps to cut emissions from landfills, coal mines, agriculture, and the oil and gas sector. In January 2015, the Administration announced a goal of cutting methane emissions from the oil and gas sector by at least 40 percent from 2012 levels by 2025.

In 2010, the Government Accountability Office (GAO) estimated that in 2008, 126 billion cubic feet (Bcf) of natural gas was being vented or flared from onshore federal leases (28 Bcf flared, 98 Bcf vented), and that roughly 50 Bcf of that could have been economically captured using technologies available at the time.<sup>1</sup> Recent data shows that **flaring on onshore leases has increased by 171 percent since 2008**, reaching 76 Bcf in 2013. For venting, BLM's estimates are considerably different from GAO's, potentially because of real factors such as new federal and state regulations, or because of updated emission factors from EPA and other data improvements. For 2013, BLM estimated that 22 Bcf was vented, giving a total of **98 Bcf vented and flared from onshore leases in 2013**.

## **SUMMARY OF THE PROPOSED RULE**

The proposed rule updates BLM's existing rules regarding methane venting and flaring, which have been in place since 1979. The proposed new rule would:

- Require a **waste minimization plan**, to be submitted with an operator's drilling permit application, which would describe how the operator plans to minimize waste of natural gas from that well.
- **Prohibit venting**, with a few narrow exceptions, such as in the case of an emergency, if the gas is not combustible, or if the gas is vented through the operation of a natural gas-activated pneumatic controller or pump.
- Set a **limit on flaring**, which would ratchet down from a per-lease average of 7,200 thousand cubic feet (Mcf) per well per month for the first year after the rule is effective, to 3,600 Mcf per well per month in the second year, to 1,800 Mcf per well per month for the third year and beyond. For existing leases, BLM allows companies to apply for alternatives to these limits if the operator shows they would make production from the lease uneconomic. A renewable two-year exemption from the flaring limits is allowed if the lease is not connected to a gas pipeline, is more than 50 miles from the nearest gas processing plant, and is currently flaring or venting at an average rate at least 50 percent higher than the new monthly limits.
- Require **better measuring and reporting** of vented and flared volumes, with meter measurement required if the volume of gas vented or flared exceeds 50 Mcf/day.
- Mandate that operators **monitor for leaks** twice a year using an infrared camera or other approved monitoring device, although a portable analyzer may be used if the operator has less than 500 wells within the jurisdiction of a single BLM field office. If two or fewer leaks are detected in consecutive inspections, the operator may switch to annual inspections; if more than two leaks are detected in consecutive inspections, the operator must inspect quarterly until two or fewer leaks are detected in consecutive inspections, at which point the inspection frequency can return to twice a year.

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<sup>1</sup> U.S. Government Accountability Office, GAO-11-34, *FEDERAL OIL AND GAS LEASES: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases*, October 2010.

- **Require leaks to be repaired** within 15 days, with verification by the same method used to identify the leak.
- Prohibit venting of gas during **well drilling and completion operations**, except in certain specific situations. Gas that reaches the surface during those operations must be captured and sold, flared, used on the lease, or reinjected.
- Institute a number of new standards designed to **cut leakage of natural gas from production equipment**, including pneumatic controllers, pneumatic pumps, and storage vessels. High-bleed pneumatic controllers (those that vent more than 6 standard cubic feet per hour) would have to be replaced by low-bleed versions, pumps must either be zero-emission or route to a flaring device, and tank vapor must either be captured and sold or routed to a flaring device if the tank emits more than 6 tons per year of volatile organic compounds. For all of these, operators can obtain exemptions due to economic factors.
- Require practices to minimize gas venting during **downhole well maintenance and liquids unloading** (when liquids are removed from a well to improve production).
- Clarify when **royalties are owed** on vented and flared gas, as well as for oil and gas used on the lease.
- Allow for **variances** that would apply across all lands in a state or belonging to a single tribe, at the request of the state or tribe.
- Eliminate the regulatory ceiling on **onshore oil and gas royalty rates**. The current 12.5 percent rate is only a minimum in the Mineral Leasing Act, but in BLM regulations it is also a maximum. Removing that ceiling in regulation would allow BLM to set higher royalty rates for future leases—as is the case offshore, where the rate is largely 18.75 percent—although BLM stresses that it is not proposing changes to royalty rates at this time.

The costs and benefits of the rule depend on whether the Environmental Protection Agency (EPA) finalizes its new source performance standards for methane, since compliance with those rules would result in automatic compliance with part of the proposed BLM rules. BLM estimates that the **costs range from \$117 million to \$174 million** per year across the industry, with the average cost for small operators being about \$31,300 to \$37,500. The rule’s **benefits range from \$255 million to \$384 million per year**, meaning all scenarios result in significant net benefits.

BLM estimates that the rule will result in **methane emissions being reduced by 164,000 to 185,000 metric tons per year** (approximately 4.1 to 4.6 MMT CO<sub>2</sub> Eq.<sup>2</sup>), and coupled with reductions in flaring will result in **41 – 56 billion cubic feet a year of additional natural gas being put to productive use** instead of being vented or flared, enough gas to serve about 550,000 to 760,000 homes at 2009 usage levels. Compared to 2013 levels, flaring would be reduced by an estimated 41 – 60 percent, and venting would be reduced by an estimated 44 – 52 percent. The estimated additional royalties would run from \$9 million to \$17 million per year.

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<sup>2</sup> Converted using factors at <https://www3.epa.gov/gasstar/tools/calculations.html>, where 1 cubic feet of methane equals 4.79389 x 10<sup>-4</sup> metric tons of CO<sub>2</sub> equivalent.

### *Comparison with EPA Efforts*

In 2012, EPA published new source performance standards (NSPS) for volatile organic compounds (VOCs) from new and modified natural gas wells, and efforts to reduce VOC emissions also reduce methane emissions. In September 2015, EPA published a proposed NSPS that would establish requirements for methane emissions from new and modified oil and gas wells, natural gas processing plants, and natural gas compressor stations, as well as extend the VOC NSPS to other wells and equipment not currently covered.

The BLM proposed rule has two major differences from the EPA proposed methane NSPS: the BLM rule covers existing sources, whereas the EPA rule only covers new or modified wells, and the BLM rule addresses flaring, which is not covered at all by the EPA proposal. The BLM proposal would also cover activities, such as well maintenance and liquids unloading, that are not addressed by the EPA. Both agencies have worked together to ensure there are no conflicts between the two sets of regulations, and the application of them is quite straightforward: all operations nationwide would have to comply with the EPA rules, while operations on federal leases would also have to comply with the BLM rules. And, as always, operations on federal lands must still comply with state regulations as well.

### *Comparison with Selected State Efforts*

A number of states have instituted regulations designed to address venting, flaring, and leaks, and BLM used many of the state regulations as a model for parts of its own.

- **Colorado** – In 2014, Colorado finalized a rule that extended many of the VOC NSPS requirements to existing sources, requires operators to carry out a leak detection and repair program, requires pneumatic controllers to be low-bleed, sets standards for emissions from storage tanks, and established standards for liquids unloading similar to the ones proposed by BLM. A recent survey of industry representatives in Colorado found that sixty percent believed the Colorado regulation has significantly reduced methane emissions in Colorado, and seventy percent believe the benefits of the regulations outweigh the costs.<sup>3</sup>
- **North Dakota** – Flaring has been a very significant problem in North Dakota due to the rapid expansion of drilling in the state that occurred without adequate natural gas pipeline infrastructure, and the fact that drillers were focusing on oil production. Flaring volumes were greater than 20 percent of produced gas for every month from August 2007 through January 2015, hitting a peak of 37.4 percent in September 2011. To combat flaring, in July 2014 the state enacted an order requiring companies to meet flaring targets that step down to 10 percent by October 2020. Companies that do not meet the flaring targets are subject to restrictions on production. Since the order was enacted, flaring has dropped considerably and now stands at less than 12 percent. However, this drop has also coincided with a significant slowdown in drilling activity in the state due to low oil prices, meaning fewer new wells that are more likely to flare significant volumes of gas are coming online.

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<sup>3</sup> <http://www.methanesolutions.org/new-page/>

- **Utah** – Utah requires the use of low-bleed pneumatic controllers, has enacted standards for storage tank emissions that already meet the BLM proposed rule standard, and requires operators to conduct a leak detection and repair program with inspection frequencies that range from 3 months to 1 year. The state also limits flaring to 60 Mcf/well/day and 1,800 Mcf/well/month, the same as in the proposed BLM rule.
- **Wyoming** – Has a rule that requires operators in the Upper Green River Basin to carry out a leak detection and repair program and ensure all pneumatic controllers are low-bleed by January 2017. Like Utah, Wyoming has daily and monthly flaring limits equivalent to the proposed BLM rule.

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# Executive Summary

An emissions inventory that identifies and quantifies a country's primary anthropogenic<sup>1</sup> sources and sinks of greenhouse gases is essential for addressing climate change. This inventory adheres to both (1) a comprehensive and detailed set of methodologies for estimating sources and sinks of anthropogenic greenhouse gases, and (2) a common and consistent mechanism that enables Parties to the United Nations Framework Convention on Climate Change (UNFCCC) to compare the relative contribution of different emission sources and greenhouse gases to climate change.

In 1992, the United States signed and ratified the UNFCCC. As stated in Article 2 of the UNFCCC, “The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”<sup>2</sup>

Parties to the Convention, by ratifying, “shall develop, periodically update, publish and make available...national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies...”<sup>3</sup> The United States views this report as an opportunity to fulfill these commitments.

This chapter summarizes the latest information on U.S. anthropogenic greenhouse gas emission trends from 1990 through 2014. To ensure that the U.S. emissions inventory is comparable to those of other UNFCCC Parties, the estimates presented here were calculated using methodologies consistent with those recommended in the *2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories* (IPCC 2006). The structure of this report is consistent with the UNFCCC guidelines for inventory reporting.<sup>4</sup>

## Box ES-1: Methodological Approach for Estimating and Reporting U.S. Emissions and Sinks

In following the UNFCCC requirement under Article 4.1 to develop and submit national greenhouse gas emissions inventories, the gross emissions total presented in this report for the United States excludes emissions and sinks from LULUCF. The net emissions total presented in this report for the United States includes emissions and sinks from LULUCF. All emissions and sinks are calculated using internationally-accepted methods provided by the

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<sup>1</sup> The term “anthropogenic,” in this context, refers to greenhouse gas emissions and removals that are a direct result of human activities or are the result of natural processes that have been affected by human activities (IPCC 2006).

<sup>2</sup> Article 2 of the Framework Convention on Climate Change published by the UNEP/WMO Information Unit on Climate Change. See <<http://unfccc.int>>.

<sup>3</sup> Article 4(1)(a) of the United Nations Framework Convention on Climate Change (also identified in Article 12). Subsequent decisions by the Conference of the Parties elaborated the role of Annex I Parties in preparing national inventories. See <<http://unfccc.int>>.

<sup>4</sup> See <<http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>>.

IPCC.<sup>5</sup> Additionally, the calculated emissions and sinks in a given year for the United States are presented in a common manner in line with the UNFCCC reporting guidelines for the reporting of inventories under this international agreement.<sup>6</sup> The use of consistent methods to calculate emissions and sinks by all nations providing their inventories to the UNFCCC ensures that these reports are comparable. In this regard, U.S. emissions and sinks reported in this Inventory report are comparable to emissions and sinks reported by other countries. The manner that emissions and sinks are provided in this Inventory is one of many ways U.S. emissions and sinks could be examined; this Inventory report presents emissions and sinks in a common format consistent with how countries are to report inventories under the UNFCCC. The report itself follows this standardized format, and provides an explanation of the IPCC methods used to calculate emissions and sinks, and the manner in which those calculations are conducted.

On October 30, 2009, the U.S. Environmental Protection Agency (EPA) published a rule for the mandatory reporting of greenhouse gases from large greenhouse gas emissions sources in the United States. Implementation of 40 CFR Part 98 is referred to as the Greenhouse Gas Reporting Program (GHGRP). 40 CFR part 98 applies to direct greenhouse gas emitters, fossil fuel suppliers, industrial gas suppliers, and facilities that inject carbon dioxide (CO<sub>2</sub>) underground for sequestration or other reasons.<sup>7</sup> Reporting is at the facility level, except for certain suppliers of fossil fuels and industrial greenhouse gases. The GHGRP dataset and the data presented in this Inventory report are complementary and, as indicated in the respective methodological and planned improvements sections in this report's chapters, EPA is using the data, as applicable, to improve the national estimates presented in this Inventory.

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## ES.1. Background Information

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Greenhouse gases trap heat and make the planet warmer. The most important greenhouse gases directly emitted by humans include CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and several other fluorine-containing halogenated substances. Although the direct greenhouse gases CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2014, concentrations of these greenhouse gases have increased globally by 43, 160, and 21 percent, respectively (IPCC 2013 and NOAA/ESRL 2016). This annual report estimates the total national greenhouse gas emissions and removals associated with human activities across the United States.

### Global Warming Potentials

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other greenhouse gases, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the earth (e.g., affect cloud formation or albedo).<sup>8</sup> The IPCC developed the Global Warming Potential (GWP) concept to compare the ability of each greenhouse gas to trap heat in the atmosphere relative to another gas.

The GWP of a greenhouse gas is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram (kg) of a trace substance relative to that of 1 kg of a reference gas (IPCC 2013). Direct radiative effects occur when the gas itself is a greenhouse gas. The reference gas used is CO<sub>2</sub>, and therefore GWP-

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<sup>5</sup> See <<http://www.ipcc-nggip.iges.or.jp/public/index.html>>.

<sup>6</sup> See <<http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=2>>.

<sup>7</sup> See <<http://www.epa.gov/ghgreporting>> and <<http://ghgdata.epa.gov/ghgp/main.do>>.

<sup>8</sup> Albedo is a measure of the Earth's reflectivity, and is defined as the fraction of the total solar radiation incident on a body that is reflected by it.

weighted emissions are measured in million metric tons of CO<sub>2</sub> equivalent (MMT CO<sub>2</sub> Eq.).<sup>9,10</sup> All gases in this Executive Summary are presented in units of MMT CO<sub>2</sub> Eq. Emissions by gas in unweighted mass tons are provided in the Trends chapter of this report.

UNFCCC reporting guidelines for national inventories require the use of GWP values from the *IPCC Fourth Assessment Report (AR4)* (IPCC 2007).<sup>11</sup> To comply with international reporting standards under the UNFCCC, official emission estimates are reported by the United States using AR4 GWP values, which have replaced the previously required use of *IPCC Second Assessment Report (SAR)* (IPCC 1996) GWP values in the Inventory. All estimates are provided throughout the report in both CO<sub>2</sub> equivalents and unweighted units. A comparison of emission values using the AR4 GWP values versus the SAR (IPCC 1996), and the *IPCC Fifth Assessment Report (AR5)* (IPCC 2013) GWP values can be found in Chapter 1 and, in more detail, in Annex 6.1 of this report. The GWP values used in this report are listed below in Table ES-1.

**Table ES-1: Global Warming Potentials (100-Year Time Horizon) Used in this Report**

Gas	GWP
CO <sub>2</sub>	1
CH <sub>4</sub> <sup>a</sup>	25
N <sub>2</sub> O	298
HFC-23	14,800
HFC-32	675
HFC-125	3,500
HFC-134a	1,430
HFC-143a	4,470
HFC-152a	124
HFC-227ea	3,220
HFC-236fa	9,810
HFC-4310mee	1,640
CF <sub>4</sub>	7,390
C <sub>2</sub> F <sub>6</sub>	12,200
C <sub>4</sub> F <sub>10</sub>	8,860
C <sub>6</sub> F <sub>14</sub>	9,300
SF <sub>6</sub>	22,800
NF <sub>3</sub>	17,200

Source: IPCC (2007)

<sup>a</sup> The CH<sub>4</sub> GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to production of CO<sub>2</sub> is not included.

<sup>9</sup> Carbon comprises 12/44 of carbon dioxide by weight.

<sup>10</sup> One teragram is equal to 10<sup>12</sup> grams or one million metric tons.

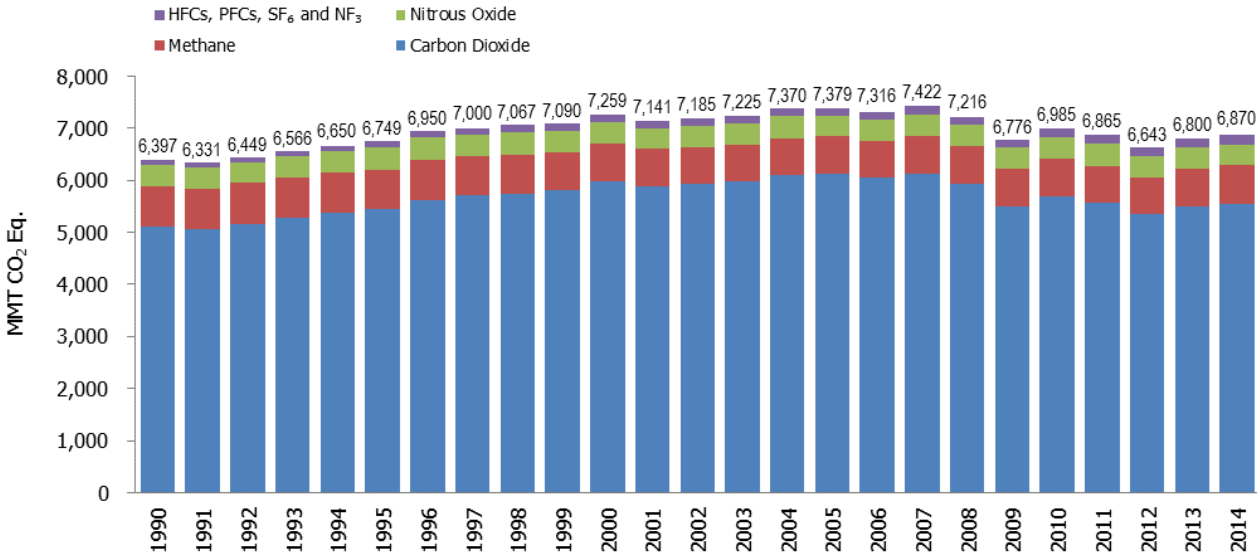
<sup>11</sup> See <<http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>>.

# ES.2. Recent Trends in U.S. Greenhouse Gas Emissions and Sinks

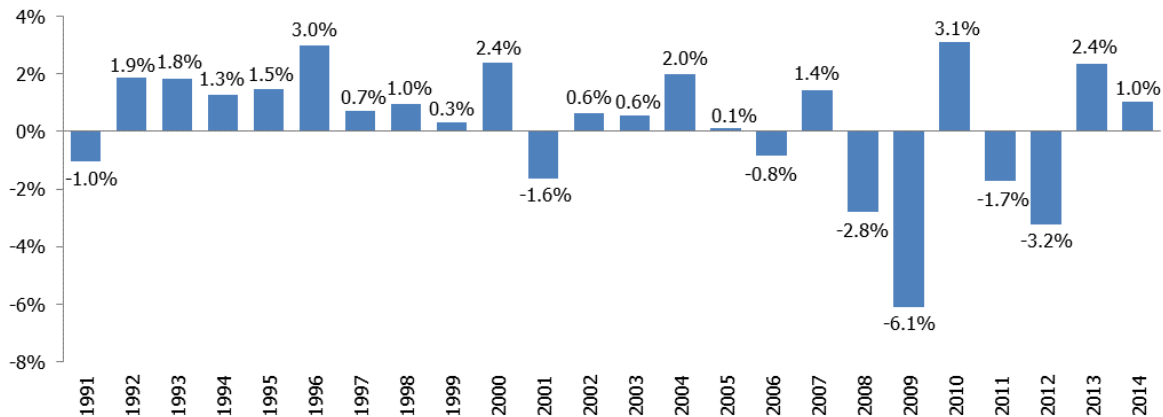
In 2014, total U.S. greenhouse gas emissions were 6,870.5 MMT or million metric tons CO<sub>2</sub> Eq. Total U.S. emissions have increased by 7.4 percent from 1990 to 2014, and emissions increased from 2013 to 2014 by 1.0 percent (70.5 MMT CO<sub>2</sub> Eq.). In 2014, relatively cool winter conditions led to an increase in fuels for the residential and commercial sectors for heating. Additionally, transportation emissions increased as a result of a small increase in vehicle miles traveled (VMT) and fuel use across on-road transportation modes. There also was an increase in industrial production across multiple sectors resulting in slight increases in industrial sector emissions. Lastly, since 1990, U.S. emissions have increased at an average annual rate of 0.3 percent. Figure ES-1 through Figure ES-3 illustrate the overall trends in total U.S. emissions by gas, annual changes, and absolute change since 1990. Overall, net emissions in 2014 were 8.6 percent below 2005 levels as shown in Table ES-2.

Table ES-2 provides a detailed summary of U.S. greenhouse gas emissions and sinks for 1990 through 2014.

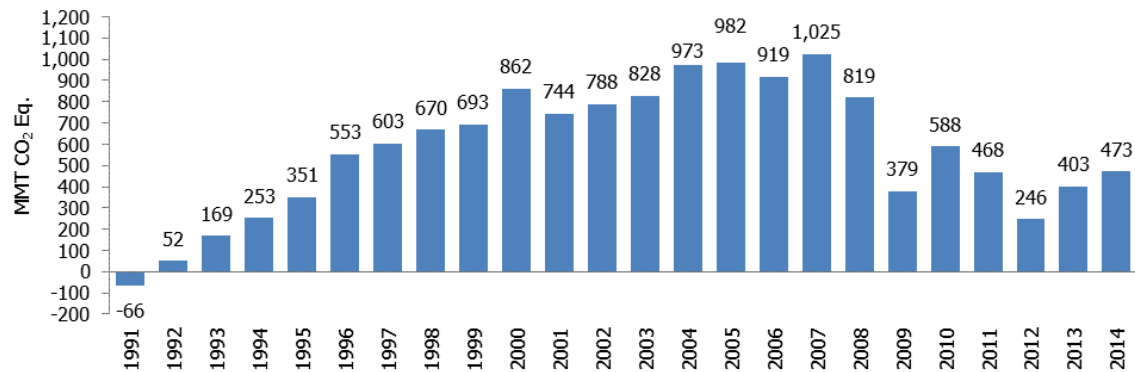
**Figure ES-1: U.S. Greenhouse Gas Emissions by Gas (MMT CO<sub>2</sub> Eq.)**



**Figure ES-2: Annual Percent Change in U.S. Greenhouse Gas Emissions Relative to the Previous Year**



**Figure ES-3: Cumulative Change in Annual U.S. Greenhouse Gas Emissions Relative to 1990 (1990=0, MMT CO<sub>2</sub> Eq.)**



**Table ES-2: Recent Trends in U.S. Greenhouse Gas Emissions and Sinks (MMT CO<sub>2</sub> Eq.)**

Gas/Source	1990	2005	2010	2011	2012	2013	2014
<b>CO<sub>2</sub></b>	<b>5,115.1</b>	<b>6,122.7</b>	<b>5,688.8</b>	<b>5,559.5</b>	<b>5,349.2</b>	<b>5,502.6</b>	<b>5,556.0</b>
Fossil Fuel Combustion	4,740.7	5,747.1	5,358.3	5,227.7	5,024.7	5,157.6	5,208.2
<i>Electricity Generation</i>	1,820.8	2,400.9	2,258.4	2,157.7	2,022.2	2,038.1	2,039.3
<i>Transportation</i>	1,493.8	1,887.0	1,728.3	1,707.6	1,696.8	1,713.0	1,737.6
<i>Industrial</i>	842.5	828.0	775.5	773.3	782.9	812.2	813.3
<i>Residential</i>	338.3	357.8	334.6	326.8	282.5	329.7	345.1
<i>Commercial</i>	217.4	223.5	220.1	220.7	196.7	221.0	231.9
<i>U.S. Territories</i>	27.9	49.9	41.4	41.5	43.6	43.5	41.0
Non-Energy Use of Fuels	118.1	138.9	114.1	108.5	105.6	121.7	114.3
Iron and Steel Production & Metallurgical Coke Production	99.7	66.5	55.7	59.9	54.2	52.2	55.4
Natural Gas Systems	37.7	30.1	32.4	35.7	35.2	38.5	42.4
Cement Production	33.3	45.9	31.3	32.0	35.1	36.1	38.8
Petrochemical Production	21.6	27.4	27.2	26.3	26.5	26.4	26.5
Lime Production	11.7	14.6	13.4	14.0	13.7	14.0	14.1

Other Process Uses of Carbonates	4.9	6.3	9.6	9.3	8.0	10.4	12.1
Ammonia Production	13.0	9.2	9.2	9.3	9.4	10.0	9.4
Incineration of Waste	8.0	12.5	11.0	10.5	10.4	9.4	9.4
Carbon Dioxide Consumption	1.5	1.4	4.4	4.1	4.0	4.2	4.5
Urea Consumption for Non-Agricultural Purposes	3.8	3.7	4.7	4.0	4.4	4.2	4.0
Petroleum Systems	3.6	3.9	4.2	4.2	3.9	3.7	3.6
Aluminum Production	6.8	4.1	2.7	3.3	3.4	3.3	2.8
Soda Ash Production and Consumption	2.8	3.0	2.7	2.7	2.8	2.8	2.8
Ferroalloy Production	2.2	1.4	1.7	1.7	1.9	1.8	1.9
Titanium Dioxide Production	1.2	1.8	1.8	1.7	1.5	1.7	1.8
Glass Production	1.5	1.9	1.5	1.3	1.2	1.3	1.3
Phosphoric Acid Production	1.5	1.3	1.1	1.2	1.1	1.1	1.1
Zinc Production	0.6	1.0	1.2	1.3	1.5	1.4	1.0
Lead Production	0.5	0.6	0.5	0.5	0.5	0.5	0.5
Silicon Carbide Production and Consumption	0.4	0.2	0.2	0.2	0.2	0.2	0.2
Magnesium Production and Processing	+	+	+	+	+	+	+
<i>Wood Biomass and Ethanol Consumption<sup>a</sup></i>	219.4	229.8	265.1	268.1	267.7	286.3	293.7
<i>International Bunker Fuels<sup>b</sup></i>	103.5	113.1	117.0	111.7	105.8	99.8	103.2
<b>CH<sub>4</sub></b>	<b>773.9</b>	<b>717.4</b>	<b>722.4</b>	<b>717.4</b>	<b>714.4</b>	<b>721.5</b>	<b>730.8</b>
Natural Gas Systems	206.8	177.3	166.2	170.1	172.6	175.6	176.1
Enteric Fermentation	164.2	168.9	171.3	168.9	166.7	165.5	164.3
Landfills	179.6	154.0	142.1	144.4	142.3	144.3	148.0
Petroleum Systems	38.7	48.8	54.1	56.3	58.4	64.7	68.1
Coal Mining	96.5	64.1	82.3	71.2	66.5	64.6	67.6
Manure Management	37.2	56.3	60.9	61.5	63.7	61.4	61.2
Wastewater Treatment	15.7	15.9	15.5	15.3	15.0	14.8	14.7
Rice Cultivation	13.1	13.0	11.9	11.8	11.9	11.9	11.9
Stationary Combustion	8.5	7.4	7.1	7.1	6.6	8.0	8.1
Abandoned Underground Coal Mines	7.2	6.6	6.6	6.4	6.2	6.2	6.3
Composting	0.4	1.9	1.8	1.9	1.9	2.0	2.1
Mobile Combustion	5.6	2.7	2.3	2.2	2.2	2.1	2.0
Field Burning of Agricultural Residues	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Petrochemical Production	0.2	0.1	+	+	0.1	0.1	0.1
Ferroalloy Production	+	+	+	+	+	+	+
Silicon Carbide Production and Consumption	+	+	+	+	+	+	+
Iron and Steel Production & Metallurgical Coke Production	+	+	+	+	+	+	+
Incineration of Waste	+	+	+	+	+	+	+
<i>International Bunker Fuels<sup>b</sup></i>	0.2	0.1	0.1	0.1	0.1	0.1	0.1
<b>N<sub>2</sub>O</b>	<b>406.2</b>	<b>397.6</b>	<b>410.3</b>	<b>416.5</b>	<b>409.3</b>	<b>403.4</b>	<b>403.5</b>
Agricultural Soil Management	303.3	297.2	320.7	323.1	323.1	318.6	318.4
Stationary Combustion	11.9	20.2	22.2	21.3	21.4	22.9	23.4
Manure Management	14.0	16.5	17.2	17.4	17.5	17.5	17.5
Mobile Combustion	41.2	34.4	23.6	22.4	20.0	18.2	16.3
Nitric Acid Production	12.1	11.3	11.5	10.9	10.5	10.7	10.9
Adipic Acid Production	15.2	7.1	4.2	10.2	5.5	4.0	5.4

Wastewater Treatment	3.4	4.3	4.5	4.7	4.8	4.8	4.8
N <sub>2</sub> O from Product Uses	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Composting	0.3	1.7	1.6	1.7	1.7	1.8	1.8
Incineration of Waste	0.5	0.4	0.3	0.3	0.3	0.3	0.3
Semiconductor Manufacture	+	0.1	0.1	0.2	0.2	0.2	0.2
Field Burning of Agricultural Residues	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<i>International Bunker Fuels<sup>b</sup></i>	<i>0.9</i>	<i>1.0</i>	<i>1.0</i>	<i>1.0</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>
<b>HFCs</b>	<b>46.6</b>	<b>119.9</b>	<b>149.4</b>	<b>154.3</b>	<b>155.9</b>	<b>158.9</b>	<b>166.7</b>
Substitution of Ozone Depleting Substances <sup>c</sup>	0.3	99.7	141.2	145.3	150.2	154.6	161.2
HCFC-22 Production	46.1	20.0	8.0	8.8	5.5	4.1	5.0
Semiconductor Manufacture	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Magnesium Production and Processing	0.0	0.0	+	+	+	0.1	0.1
<b>PFCs</b>	<b>24.3</b>	<b>6.7</b>	<b>4.5</b>	<b>7.0</b>	<b>6.0</b>	<b>5.8</b>	<b>5.6</b>
Semiconductor Manufacture	2.8	3.2	2.7	3.5	3.1	2.9	3.0
Aluminum Production	21.5	3.4	1.9	3.5	2.9	3.0	2.5
<b>SF<sub>6</sub></b>	<b>31.1</b>	<b>14.0</b>	<b>9.5</b>	<b>10.0</b>	<b>7.6</b>	<b>7.2</b>	<b>7.3</b>
Electrical Transmission and Distribution	25.4	10.6	7.0	6.8	5.6	5.4	5.6
Magnesium Production and Processing	5.2	2.7	2.1	2.8	1.6	1.5	1.0
Semiconductor Manufacture	0.5	0.7	0.4	0.4	0.4	0.4	0.7
<b>NF<sub>3</sub></b>	<b>+</b>	<b>0.5</b>	<b>0.6</b>	<b>0.7</b>	<b>0.6</b>	<b>0.6</b>	<b>0.5</b>
Semiconductor Manufacture	+	0.5	0.6	0.7	0.6	0.6	0.5
<b>Total Emissions</b>	<b>6,397.1</b>	<b>7,378.8</b>	<b>6,985.5</b>	<b>6,865.4</b>	<b>6,643.0</b>	<b>6,800.0</b>	<b>6,870.5</b>
<b>LULUCF Emissions<sup>d</sup></b>	<b>15.0</b>	<b>28.2</b>	<b>17.8</b>	<b>22.9</b>	<b>32.3</b>	<b>24.1</b>	<b>24.6</b>
<b>LULUCF Total Net Flux<sup>e</sup></b>	<b>(753.0)</b>	<b>(726.7)</b>	<b>(784.3)</b>	<b>(784.9)</b>	<b>(782.0)</b>	<b>(783.7)</b>	<b>(787.0)</b>
<b>LULUCF Sector Total<sup>f</sup></b>	<b>(738.0)</b>	<b>(698.5)</b>	<b>(766.4)</b>	<b>(762.0)</b>	<b>(749.7)</b>	<b>(759.6)</b>	<b>(762.5)</b>
<b>Net Emissions (Sources and Sinks)</b>	<b>5,659.2</b>	<b>6,680.3</b>	<b>6,219.0</b>	<b>6,103.4</b>	<b>5,893.3</b>	<b>6,040.4</b>	<b>6,108.0</b>

Notes: Total emissions presented without LULUCF. Net emissions presented with LULUCF.

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

<sup>a</sup> Emissions from Wood Biomass and Ethanol Consumption are not included specifically in summing Energy sector totals. Net carbon fluxes from changes in biogenic carbon reservoirs are accounted for in the estimates for Land Use, Land-Use Change, and Forestry.

<sup>b</sup> Emissions from International Bunker Fuels are not included in totals.

<sup>c</sup> Small amounts of PFC emissions also result from this source.

<sup>d</sup> LULUCF emissions include the CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions reported for Non-CO<sub>2</sub> Emissions from Forest Fires, N<sub>2</sub>O Fluxes from Forest Soils, CO<sub>2</sub> Emissions from Agricultural Liming, CO<sub>2</sub> Emissions from Urea Fertilization, Peatlands Remaining Peatlands, and N<sub>2</sub>O Fluxes from Settlement Soils.

<sup>e</sup> Net CO<sub>2</sub> flux is the net C stock change from the following categories: *Forest Land Remaining Forest Land, Land Converted to Forest Land, Cropland Remaining Cropland, Land Converted to Cropland, Grassland Remaining Grassland, Land Converted to Grassland, Settlements Remaining Settlements, and Other*. Refer to Table ES-5 for a breakout of emissions and removals for Land Use, Land-Use Change, and Forestry by gas and source category.

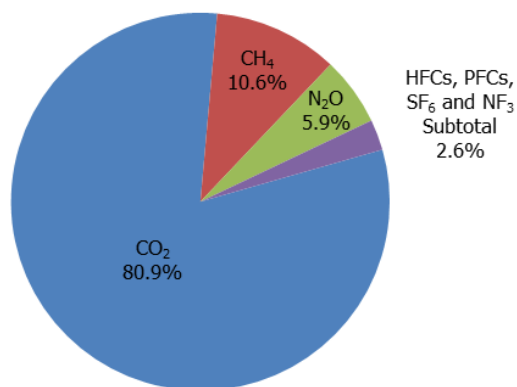
<sup>f</sup> The LULUCF Sector Total is the net sum of all emissions (i.e., sources) of greenhouse gases to the atmosphere plus removals of CO<sub>2</sub> (i.e., sinks or negative emissions) from the atmosphere.

Notes: Totals may not sum due to independent rounding. Parentheses indicate negative values or sequestration.

Figure ES-4 illustrates the relative contribution of the direct greenhouse gases to total U.S. emissions in 2014. Note, unless otherwise stated, all tables and figures provide total emissions without LULUCF. The primary greenhouse gas emitted by human activities in the United States was CO<sub>2</sub>, representing approximately 80.9 percent of total greenhouse gas emissions. The largest source of CO<sub>2</sub>, and of overall greenhouse gas emissions, was fossil fuel combustion. CH<sub>4</sub> emissions, which have decreased by 5.6 percent since 1990, resulted primarily from decomposition of wastes in landfills, enteric fermentation associated with domestic livestock, and natural gas systems. Agricultural soil management, manure management, mobile source fuel combustion and stationary fuel

combustion were the major sources of N<sub>2</sub>O emissions. Ozone depleting substance substitute emissions and emissions of HFC-23 during the production of HCFC-22 were the primary contributors to aggregate hydrofluorocarbon (HFC) emissions. Perfluorocarbon (PFC) emissions resulted as a byproduct of primary aluminum production and from semiconductor manufacturing, electrical transmission and distribution systems accounted for most sulfur hexafluoride (SF<sub>6</sub>) emissions, and semiconductor manufacturing is the only source of nitrogen trifluoride (NF<sub>3</sub>) emissions.

**Figure ES-4: 2014 U.S. Greenhouse Gas Emissions by Gas (Percentages based on MMT CO<sub>2</sub> Eq.)**



Overall, from 1990 to 2014, total emissions of CO<sub>2</sub> increased by 440.9 MMT CO<sub>2</sub> Eq. (8.6 percent), while total emissions of CH<sub>4</sub> decreased by 43.0 MMT CO<sub>2</sub> Eq. (5.6 percent), and N<sub>2</sub>O decreased by 2.7 MMT CO<sub>2</sub> Eq. (0.7 percent). During the same period, aggregate weighted emissions of HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub> rose by 78.1 MMT CO<sub>2</sub> Eq. (76.6 percent). From 1990 to 2014, HFCs increased by 120.1 MMT CO<sub>2</sub> Eq. (257.9 percent), PFCs decreased by 18.7 MMT CO<sub>2</sub> Eq. (77.1 percent), SF<sub>6</sub> decreased by 23.7 MMT CO<sub>2</sub> Eq. (76.4 percent), and NF<sub>3</sub> increased by 0.4 MMT CO<sub>2</sub> Eq. (923.4 percent). Despite being emitted in smaller quantities relative to the other principal greenhouse gases, emissions of HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub> are significant because many of these gases have extremely high global warming potentials and, in the cases of PFCs and SF<sub>6</sub>, long atmospheric lifetimes. Conversely, U.S. greenhouse gas emissions were partly offset by carbon (C) sequestration in forests, trees in urban areas, agricultural soils, and landfilled yard trimmings and food scraps, which, in aggregate, offset 11.5 percent of total emissions in 2014. The following sections describe each gas’s contribution to total U.S. greenhouse gas emissions in more detail.

## Carbon Dioxide Emissions

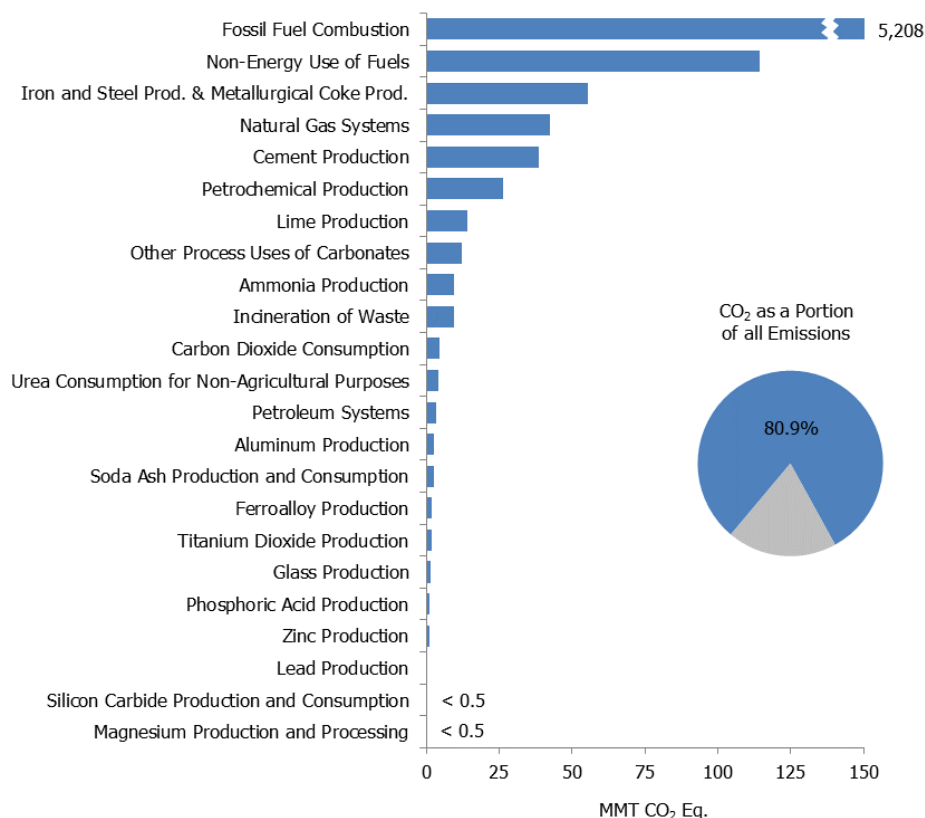
The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO<sub>2</sub> are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced.<sup>12</sup> Since the Industrial Revolution (i.e., about 1750), global atmospheric concentrations of CO<sub>2</sub> have risen approximately 43 percent (IPCC 2013 and NOAA/ESRL 2016), principally due to the combustion of fossil fuels. Within the United States, fossil fuel combustion accounted for 93.7 percent of CO<sub>2</sub> emissions in 2014. Globally,

<sup>12</sup> The term “flux” is used to describe the net emissions of greenhouse gases accounting for both the emissions of CO<sub>2</sub> to and the removals of CO<sub>2</sub> from the atmosphere. Removal of CO<sub>2</sub> from the atmosphere is also referred to as “carbon sequestration.”



approximately 32,190 MMT of CO<sub>2</sub> were added to the atmosphere through the combustion of fossil fuels in 2013, of which the United States accounted for approximately 16 percent.<sup>13</sup> Changes in land use and forestry practices can also emit CO<sub>2</sub> (e.g., through conversion of forest land to agricultural or urban use) or can act as a sink for CO<sub>2</sub> (e.g., through net additions to forest biomass). Although fossil fuel combustion is the greatest source of CO<sub>2</sub> emissions, there are 22 additional sources of CO<sub>2</sub> emissions (Figure ES-5).

**Figure ES-5: 2014 Sources of CO<sub>2</sub> Emissions (MMT CO<sub>2</sub> Eq.)**



Note: Fossil Fuel Combustion includes electricity generation, which also includes emissions of less than 0.05 MMT CO<sub>2</sub> Eq. from geothermal-based generation.

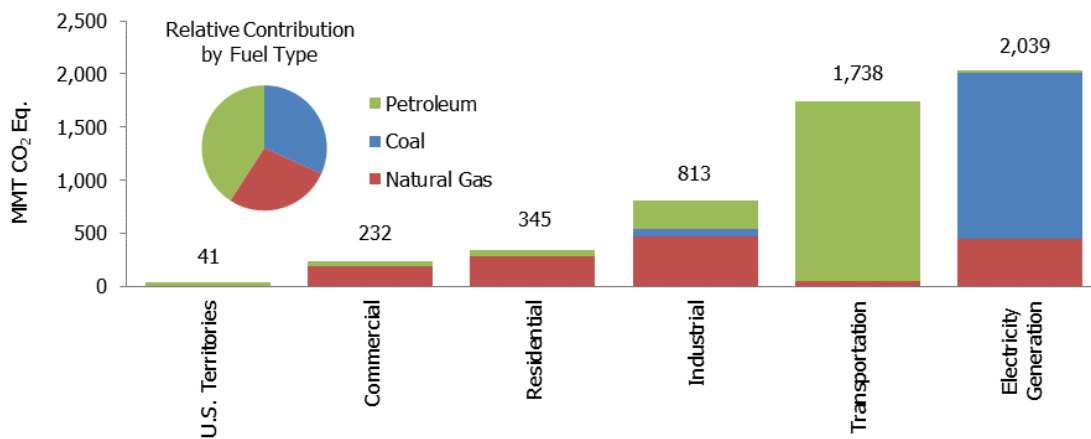
As the largest source of U.S. greenhouse gas emissions, CO<sub>2</sub> from fossil fuel combustion has accounted for approximately 76 percent of GWP-weighted emissions since 1990, and is approximately 76 percent of total GWP-weighted emissions in 2014. Emissions of CO<sub>2</sub> from fossil fuel combustion increased at an average annual rate of 0.4 percent from 1990 to 2014. The fundamental factors influencing this trend include (1) a generally growing domestic economy over the last 25 years, (2) an overall growth in emissions from electricity generation and transportation activities, and (3) a general decline in the carbon intensity of fuels combusted for energy in recent years by most sectors of the economy. Between 1990 and 2014, CO<sub>2</sub> emissions from fossil fuel combustion increased from 4,740.7 MMT CO<sub>2</sub> Eq. to 5,208.2 MMT CO<sub>2</sub> Eq., a 9.9 percent total increase over the twenty-five-year period. From 2013 to 2014, these emissions increased by 50.6 MMT CO<sub>2</sub> Eq. (1.0 percent).

Historically, changes in emissions from fossil fuel combustion have been the dominant factor affecting U.S. emission trends. Changes in CO<sub>2</sub> emissions from fossil fuel combustion are influenced by many long-term and short-term factors, including population and economic growth, energy price fluctuations, technological changes,

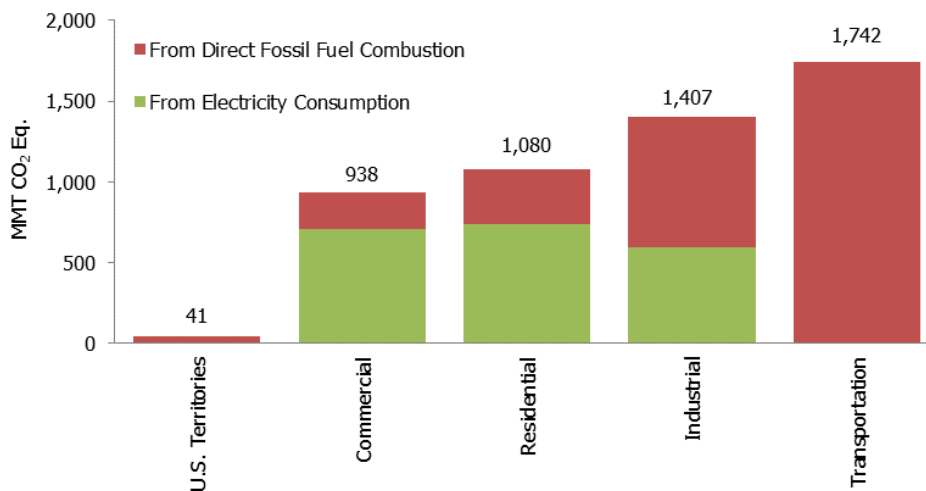
<sup>13</sup> Global CO<sub>2</sub> emissions from fossil fuel combustion were taken from International Energy Agency *CO<sub>2</sub> Emissions from Fossil Fuels Combustion – Highlights* (2015). See <<https://www.iea.org/publications/freepublications/publication/CO2EmissionsFromFuelCombustionHighlights2015.pdf>>.

energy fuel choices, and seasonal temperatures. In the short term, the overall consumption of fossil fuels in the United States fluctuates primarily in response to changes in general economic conditions, energy prices, weather, and the availability of non-fossil alternatives. For example, in a year with increased consumption of goods and services, low fuel prices, severe summer and winter weather conditions, nuclear plant closures, and lower precipitation feeding hydroelectric dams, there would likely be proportionally greater fossil fuel consumption than a year with poor economic performance, high fuel prices, mild temperatures, and increased output from nuclear and hydroelectric plants. In the long term, energy consumption patterns respond to changes that affect the scale of consumption (e.g., population, number of cars, and size of houses), the efficiency with which energy is used in equipment (e.g., cars, power plants, steel mills, and light bulbs), and behavioral choices (e.g., walking, bicycling, or telecommuting to work instead of driving).

**Figure ES-6: 2014 CO<sub>2</sub> Emissions from Fossil Fuel Combustion by Sector and Fuel Type (MMT CO<sub>2</sub> Eq.)**



**Figure ES-7: 2014 End-Use Sector Emissions of CO<sub>2</sub> from Fossil Fuel Combustion (MMT CO<sub>2</sub> Eq.)**



The five major fuel consuming sectors contributing to CO<sub>2</sub> emissions from fossil fuel combustion are electricity generation, transportation, industrial, residential, and commercial. CO<sub>2</sub> emissions are produced by the electricity generation sector as they consume fossil fuel to provide electricity to one of the other four sectors, or “end-use”

sectors. For the discussion below, electricity generation emissions have been distributed to each end-use sector on the basis of each sector's share of aggregate electricity consumption. This method of distributing emissions assumes that each end-use sector consumes electricity that is generated from the national average mix of fuels according to their carbon intensity. Emissions from electricity generation are also addressed separately after the end-use sectors have been discussed.

Note that emissions from U.S. Territories are calculated separately due to a lack of specific consumption data for the individual end-use sectors. Figure ES-6, Figure ES-7, and Table ES-3 summarize CO<sub>2</sub> emissions from fossil fuel combustion by end-use sector.

**Table ES-3: CO<sub>2</sub> Emissions from Fossil Fuel Combustion by End-Use Sector (MMT CO<sub>2</sub> Eq.)**

End-Use Sector	1990	2005	2010	2011	2012	2013	2014
<b>Transportation</b>	<b>1,496.8</b>	<b>1,891.8</b>	<b>1,732.7</b>	<b>1,711.9</b>	<b>1,700.6</b>	<b>1,717.0</b>	<b>1,741.7</b>
Combustion	1,493.8	1,887.0	1,728.3	1,707.6	1,696.8	1,713.0	1,737.6
Electricity	3.0	4.7	4.5	4.3	3.9	4.0	4.1
<b>Industrial</b>	<b>1,529.2</b>	<b>1,564.6</b>	<b>1,416.5</b>	<b>1,398.0</b>	<b>1,375.7</b>	<b>1,407.0</b>	<b>1,406.8</b>
Combustion	842.5	828.0	775.5	773.3	782.9	812.2	813.3
Electricity	686.7	736.6	641.0	624.7	592.8	594.7	593.6
<b>Residential</b>	<b>931.4</b>	<b>1,214.1</b>	<b>1,174.6</b>	<b>1,117.5</b>	<b>1,007.8</b>	<b>1,064.6</b>	<b>1,080.3</b>
Combustion	338.3	357.8	334.6	326.8	282.5	329.7	345.1
Electricity	593.0	856.3	840.0	790.7	725.3	734.9	735.2
<b>Commercial</b>	<b>755.4</b>	<b>1,026.8</b>	<b>993.0</b>	<b>958.8</b>	<b>897.0</b>	<b>925.5</b>	<b>938.4</b>
Combustion	217.4	223.5	220.1	220.7	196.7	221.0	231.9
Electricity	538.0	803.3	772.9	738.0	700.3	704.5	706.5
<b>U.S. Territories<sup>a</sup></b>	<b>27.9</b>	<b>49.9</b>	<b>41.4</b>	<b>41.5</b>	<b>43.6</b>	<b>43.5</b>	<b>41.0</b>
<b>Total</b>	<b>4,740.7</b>	<b>5,747.1</b>	<b>5,358.3</b>	<b>5,227.7</b>	<b>5,024.7</b>	<b>5,157.6</b>	<b>5,208.2</b>
<b>Electricity Generation</b>	<b>1,820.8</b>	<b>2,400.9</b>	<b>2,258.4</b>	<b>2,157.7</b>	<b>2,022.2</b>	<b>2,038.1</b>	<b>2,039.3</b>

<sup>a</sup> Fuel consumption by U.S. Territories (i.e., American Samoa, Guam, Puerto Rico, U.S. Virgin Islands, Wake Island, and other U.S. Pacific Islands) is included in this report.

Notes: Combustion-related emissions from electricity generation are allocated based on aggregate national electricity consumption by each end-use sector. Totals may not sum due to independent rounding.

*Transportation End-Use Sector.* When electricity-related emissions are distributed to economic end-use sectors, transportation activities accounted for 33.4 percent of U.S. CO<sub>2</sub> emissions from fossil fuel combustion in 2014. The largest sources of transportation CO<sub>2</sub> emissions in 2014 were passenger cars (42.4 percent), medium- and heavy-duty trucks (23.1 percent), light-duty trucks, which include sport utility vehicles, pickup trucks, and minivans (17.8 percent), commercial aircraft (6.6 percent), pipelines (2.7 percent), rail (2.6 percent), and ships and boats (1.6 percent). Annex 3.2 presents the total emissions from all transportation and mobile sources, including CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFCs.

In terms of the overall trend, from 1990 to 2014, total transportation CO<sub>2</sub> emissions rose by 16 percent due, in large part, to increased demand for travel as fleet wide light-duty vehicle fuel economy was relatively stable (average new vehicle fuel economy declined slowly from 1990 through 2004 and then increased more rapidly from 2005 through 2014). The number of VMT by light-duty motor vehicles (i.e., passenger cars and light-duty trucks) increased 37 percent from 1990 to 2014, as a result of a confluence of factors including population growth, economic growth, urban sprawl, and low fuel prices during the beginning of this period. Almost all of the energy consumed for transportation was supplied by petroleum-based products, with more than half being related to gasoline consumption in automobiles and other highway vehicles. Other fuel uses, especially diesel fuel for freight trucks and jet fuel for aircraft, accounted for the remainder.

*Industrial End-Use Sector.* Industrial CO<sub>2</sub> emissions, resulting both directly from the combustion of fossil fuels and indirectly from the generation of electricity that is consumed by industry, accounted for 27 percent of CO<sub>2</sub> from fossil fuel combustion in 2014. Approximately 58 percent of these emissions resulted from direct fossil fuel combustion to produce steam and/or heat for industrial processes. The remaining emissions resulted from consuming electricity for motors, electric furnaces, ovens, lighting, and other applications. In contrast to the other

end-use sectors, emissions from industry have steadily declined since 1990. This decline is due to structural changes in the U.S. economy (i.e., shifts from a manufacturing-based to a service-based economy), fuel switching, and efficiency improvements.

*Residential and Commercial End-Use Sectors.* The residential and commercial end-use sectors accounted for 21 and 18 percent, respectively, of CO<sub>2</sub> emissions from fossil fuel combustion in 2014. Both sectors relied heavily on electricity for meeting energy demands, with 68 and 75 percent, respectively, of their emissions attributable to electricity consumption for lighting, heating, cooling, and operating appliances. The remaining emissions were due to the consumption of natural gas and petroleum for heating and cooking. Emissions from the residential and commercial end-use sectors have increased by 16 percent and 24 percent since 1990, respectively, due to increasing electricity consumption for lighting, heating, air conditioning, and operating appliances.

*Electricity Generation.* The United States relies on electricity to meet a significant portion of its energy demands. Electricity generators consumed 34 percent of total U.S. energy uses from fossil fuels and emitted 39 percent of the CO<sub>2</sub> from fossil fuel combustion in 2014. The type of fuel combusted by electricity generators has a significant effect on their emissions. For example, some electricity is generated through non-fossil fuel options such as nuclear, hydroelectric, or geothermal energy. Including all electricity generation modes, generators relied on coal for approximately 39 percent of their total energy requirements in 2014.<sup>14</sup> In addition, the coal used by electricity generators accounted for 93 percent of all coal consumed for energy in the United States in 2014.<sup>15</sup> Recently, a decrease in the carbon intensity of fuels consumed to generate electricity has occurred due to a decrease in coal consumption, and increased natural gas consumption and other generation sources. Including all electricity generation modes, electricity generators used natural gas for approximately 27 percent of their total energy requirements in 2014.<sup>16</sup> Across the time series, changes in electricity demand and the carbon intensity of fuels used for electricity generation have a significant impact on CO<sub>2</sub> emissions.

Other significant CO<sub>2</sub> trends included the following:

- Carbon dioxide emissions from non-energy use of fossil fuels decreased by 3.8 MMT CO<sub>2</sub> Eq. (3.2 percent) from 1990 through 2014. Emissions from non-energy uses of fossil fuels were 114.3 MMT CO<sub>2</sub> Eq. in 2014, which constituted 2.1 percent of total national CO<sub>2</sub> emissions, approximately the same proportion as in 1990.
- Carbon dioxide emissions from iron and steel production and metallurgical coke production have declined by 44.3 MMT CO<sub>2</sub> Eq. (44.5 percent) from 1990 through 2014, due to restructuring of the industry, technological improvements, and increased scrap steel utilization.
- Carbon dioxide emissions from ammonia production (9.4 MMT CO<sub>2</sub> Eq. in 2014) decreased by 3.6 MMT CO<sub>2</sub> Eq. (27.7 percent) since 1990. Ammonia production relies on natural gas as both a feedstock and a fuel, and as such, market fluctuations and volatility in natural gas prices affect the production of ammonia.
- Total net flux from (i.e., net CO<sub>2</sub> removals) from Land Use, Land-Use Change, and Forestry increased by 34.1 MMT CO<sub>2</sub> Eq. (4.5 percent) from 1990 through 2014. This increase was primarily due to an increase in the rate of net C accumulation in forest and urban tree carbon stocks. Annual carbon accumulation in landfilled yard trimmings and food scraps slowed over this period, while the rate of carbon accumulation in urban trees increased.

#### Box ES-2: Use of Ambient Measurements Systems for Validation of Emission Inventories

In following the UNFCCC requirement under Article 4.1 to develop and submit national greenhouse gas emission inventories, the emissions and sinks presented in this report are organized by source and sink categories and calculated using internationally-accepted methods provided by the IPCC.<sup>17</sup> Several recent studies have measured emissions at the national or regional level (e.g., Petron 2012, Miller et al. 2013) with results that differ from EPA's estimate of emissions. A recent study reviewed technical literature on CH<sub>4</sub> emissions and estimated CH<sub>4</sub> emissions

<sup>14</sup> See <[http://www.eia.gov/energyexplained/index.cfm?page=electricity\\_in\\_the\\_united\\_states](http://www.eia.gov/energyexplained/index.cfm?page=electricity_in_the_united_states)>.

<sup>15</sup> See Table 6.2 Coal Consumption by Sector of EIA 2016.

<sup>16</sup> See <[http://www.eia.gov/energyexplained/index.cfm?page=electricity\\_in\\_the\\_united\\_states](http://www.eia.gov/energyexplained/index.cfm?page=electricity_in_the_united_states)>.

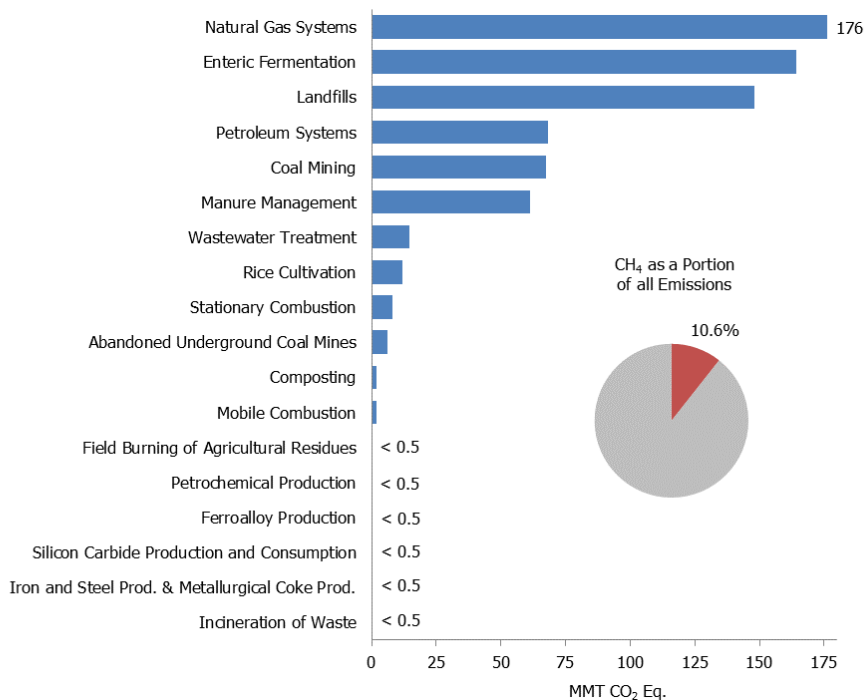
<sup>17</sup> See <<http://www.ipcc-nggip.iges.or.jp/public/index.html>>.

from all anthropogenic sources (e.g., livestock, oil and gas, waste emissions) to be greater than EPA’s estimate (Brandt et al. 2014). EPA has engaged with researchers on how remote sensing, ambient measurement, and inverse modeling techniques for greenhouse gas emissions could assist in improving the understanding of inventory estimates. An area of particular interest in EPA’s outreach efforts is how these data can be used in a manner consistent with this Inventory report’s transparency on its calculation methodologies, and the ability of these techniques to attribute emissions and removals from remote sensing to anthropogenic sources, as defined by the IPCC for this report, versus natural sources and sinks. In working with the research community on ambient measurement and remote sensing techniques to improve national greenhouse gas inventories, EPA relies upon guidance from the IPCC on the use of measurements and modeling to validate emission inventories.<sup>18</sup>

## Methane Emissions

Methane (CH<sub>4</sub>) is 25 times as effective as CO<sub>2</sub> at trapping heat in the atmosphere (IPCC 2007). Over the last two hundred and fifty years, the concentration of CH<sub>4</sub> in the atmosphere increased by 160 percent (IPCC 2013 and CDIAC 2015). Anthropogenic sources of CH<sub>4</sub> include natural gas and petroleum systems, agricultural activities, landfills, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (see Figure ES-8).

**Figure ES-8: 2014 Sources of CH<sub>4</sub> Emissions (MMT CO<sub>2</sub> Eq.)**



Some significant trends in U.S. emissions of CH<sub>4</sub> include the following:

- Natural gas systems were the largest anthropogenic source category of CH<sub>4</sub> emissions in the United States in 2014 with 176.1 MMT CO<sub>2</sub> Eq. of CH<sub>4</sub> emitted into the atmosphere. Those emissions have decreased by 30.6 MMT CO<sub>2</sub> Eq. (14.8 percent) since 1990. The decrease in CH<sub>4</sub> emissions is largely due to the decrease in emissions from transmission, storage, and distribution. The decrease in transmission and storage

<sup>18</sup> See <[http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1003\\_Uncertainty%20meeting\\_report.pdf](http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1003_Uncertainty%20meeting_report.pdf)>.

emissions is largely due to reduced compressor station emissions (including emissions from compressors and fugitives). The decrease in distribution emissions is largely attributed to increased use of plastic piping, which has lower emissions than other pipe materials, and station upgrades at metering and regulating (M&R) stations.

- Petroleum systems are the fourth anthropogenic source of CH<sub>4</sub> emissions in the United States (68.1 MMT CO<sub>2</sub> Eq.), accounting for 9.3 percent of total CH<sub>4</sub> emissions in 2014. From 1990 to 2014, CH<sub>4</sub> emissions from petroleum systems increased by 29.4 MMT CO<sub>2</sub> Eq. (or 76 percent). This increase is due primarily to increases in emissions from production equipment.
- Enteric fermentation is the second largest anthropogenic source of CH<sub>4</sub> emissions in the United States. In 2014, enteric fermentation CH<sub>4</sub> emissions were 164.3 MMT CO<sub>2</sub> Eq. (22.5 percent of total CH<sub>4</sub> emissions), which represents an increase of 0.1 MMT CO<sub>2</sub> Eq. (0.1 percent) since 1990. This increase in emissions from 1990 to 2014 generally follows the increasing trends in cattle populations. From 1990 to 1995 emissions increased and then generally decreased from 1996 to 2004, mainly due to fluctuations in beef cattle populations and increased digestibility of feed for feedlot cattle. Emissions increased from 2005 to 2007, as both dairy and beef populations underwent increases and the literature for dairy cow diets indicated a trend toward a decrease in feed digestibility for those years. Emissions decreased again from 2008 to 2014 as beef cattle populations again decreased.
- Landfills are the third largest anthropogenic source of CH<sub>4</sub> emissions in the United States (148.0 MMT CO<sub>2</sub> Eq.), accounting for 20.2 percent of total CH<sub>4</sub> emissions in 2014. From 1990 to 2014, CH<sub>4</sub> emissions from landfills decreased by 31.6 MMT CO<sub>2</sub> Eq. (17.6 percent), with small increases occurring in some interim years. This downward trend in emissions can be attributed to a 21 percent reduction in the amount of decomposable materials (i.e., paper and paperboard, food scraps, and yard trimmings) discarded in MSW landfills over the time series (EPA 2015b) and an increase in the amount of landfill gas collected and combusted (i.e., used for energy or flared),<sup>19</sup> which has more than offset the additional CH<sub>4</sub> emissions resulting from an increase in the amount of municipal solid waste landfilled.
- Methane emissions from manure management increased by 64.7 percent since 1990, from 37.2 MMT CO<sub>2</sub> Eq. in 1990 to 61.2 MMT CO<sub>2</sub> Eq. in 2014. The majority of this increase was from swine and dairy cow manure, since the general trend in manure management is one of increasing use of liquid systems, which tends to produce greater CH<sub>4</sub> emissions. The increase in liquid systems is the combined result of a shift to larger facilities, and to facilities in the West and Southwest, all of which tend to use liquid systems. Also, new regulations limiting the application of manure nutrients have shifted manure management practices at smaller dairies from daily spread to manure managed and stored on site.

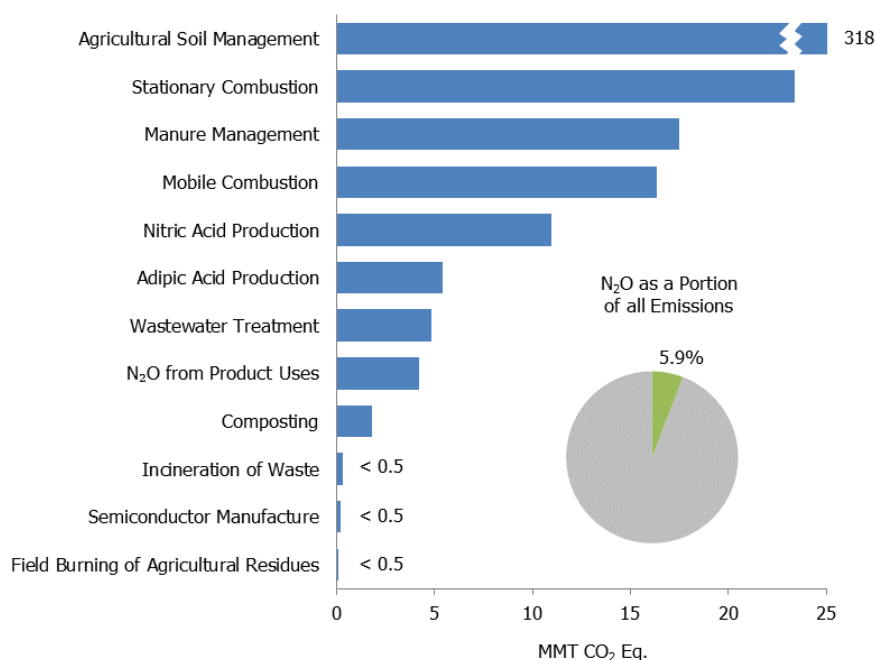
## Nitrous Oxide Emissions

Nitrous oxide (N<sub>2</sub>O) is produced by biological processes that occur in soil and water and by a variety of anthropogenic activities in the agricultural, energy-related, industrial, and waste management fields. While total N<sub>2</sub>O emissions are much lower than CO<sub>2</sub> emissions, N<sub>2</sub>O is approximately 300 times more powerful than CO<sub>2</sub> at trapping heat in the atmosphere (IPCC 2007). Since 1750, the global atmospheric concentration of N<sub>2</sub>O has risen by approximately 21 percent (IPCC 2013 and CDIAC 2015). The main anthropogenic activities producing N<sub>2</sub>O in the United States are agricultural soil management, stationary fuel combustion, fuel combustion in motor vehicles, manure management, and nitric acid production (see Figure ES-9).

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<sup>19</sup> Carbon dioxide emissions from landfills are not included specifically in summing waste sector totals. Net carbon fluxes from changes in biogenic carbon reservoirs are accounted for in the estimates for Land Use, Land-Use Change, and Forestry.

**Figure ES-9: 2014 Sources of N<sub>2</sub>O Emissions (MMT CO<sub>2</sub> Eq.)**



Some significant trends in U.S. emissions of N<sub>2</sub>O include the following:

- Agricultural soils accounted for approximately 78.9 percent of N<sub>2</sub>O emissions and 4.6 percent of total emissions in the United States in 2014. Estimated emissions from this source in 2014 were 318.4 MMT CO<sub>2</sub> Eq. Annual N<sub>2</sub>O emissions from agricultural soils fluctuated between 1990 and 2014, although overall emissions were 5.0 percent higher in 2014 than in 1990. Year-to-year fluctuations are largely a reflection of annual variation in weather patterns, synthetic fertilizer use, and crop production.
- Nitrous oxide emissions from stationary combustion increased 11.5 MMT CO<sub>2</sub> Eq. (96.4 percent) from 1990 through 2014. Nitrous oxide emissions from this source increased primarily as a result of an increase in the number of coal fluidized bed boilers in the electric power sector.
- In 2014, total N<sub>2</sub>O emissions from manure management were estimated to be 17.5 MMT CO<sub>2</sub> Eq.; emissions were 14.0 MMT CO<sub>2</sub> Eq. in 1990. These values include both direct and indirect N<sub>2</sub>O emissions from manure management. Nitrous oxide emissions have remained fairly steady since 1990. Small changes in N<sub>2</sub>O emissions from individual animal groups exhibit the same trends as the animal group populations, with the overall net effect that N<sub>2</sub>O emissions showed a 24.9 percent increase from 1990 to 2014 and a 0.1 percent decrease from 2013 through 2014. Overall shifts toward liquid systems have driven down the emissions per unit of nitrogen excreted.
- Nitrous oxide emissions from mobile combustion decreased 24.9 MMT CO<sub>2</sub> Eq. (60.4 percent) from 1990 through 2014, primarily as a result of N<sub>2</sub>O national emission control standards and emission control technologies for on-road vehicles.
- Nitrous oxide emissions from adipic acid production were 5.4 MMT CO<sub>2</sub> Eq. in 2014, and have decreased significantly since 1990 due to both the widespread installation of pollution control measures in the late 1990s and plant idling in the late 2000s. Emissions from adipic acid production have decreased by 64.2 percent since 1990 and by 67.8 percent since a peak in 1995.

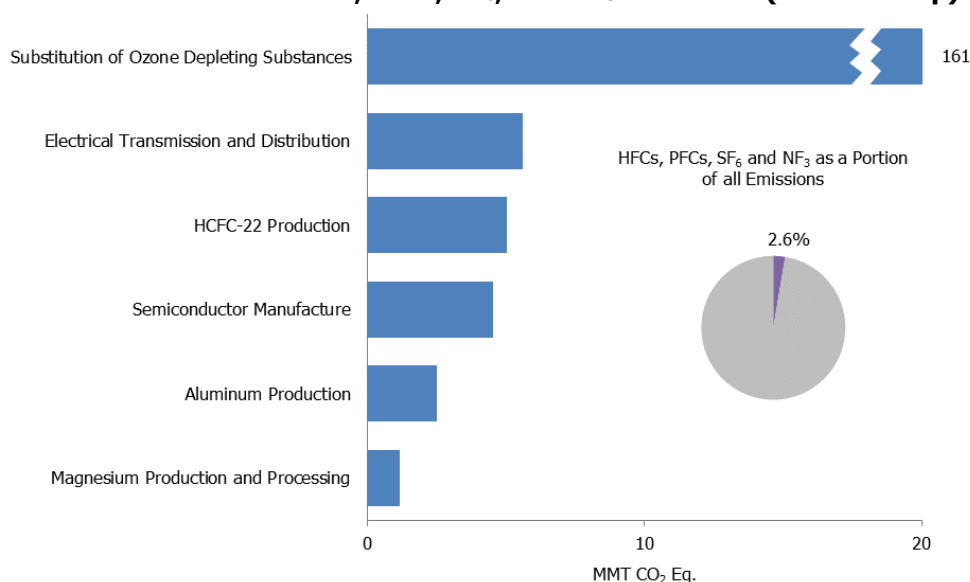
## HFC, PFC, SF<sub>6</sub>, and NF<sub>3</sub> Emissions

Hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) are families of synthetic chemicals that are used as alternatives to ozone depleting substances (ODS), which are being phased out under the Montreal Protocol and Clean Air Act Amendments of 1990. Hydrofluorocarbons and PFCs do not deplete the stratospheric ozone layer, and are therefore acceptable alternatives under the *Montreal Protocol on Substances that Deplete the Ozone Layer*.

These compounds, however, along with SF<sub>6</sub> and NF<sub>3</sub>, are potent greenhouse gases. In addition to having high global warming potentials, SF<sub>6</sub> and PFCs have extremely long atmospheric lifetimes, resulting in their essentially irreversible accumulation in the atmosphere once emitted. Sulfur hexafluoride is the most potent greenhouse gas the IPCC has evaluated (IPCC 2013).

Other emissive sources of these gases include HCFC-22 production, electrical transmission and distribution systems, semiconductor manufacturing, aluminum production, and magnesium production and processing (see Figure ES-10).

**Figure ES-10: 2014 Sources of HFCs, PFCs, SF<sub>6</sub>, and NF<sub>3</sub> Emissions (MMT CO<sub>2</sub> Eq.)**



Some significant trends in U.S. HFC, PFC, SF<sub>6</sub>, and NF<sub>3</sub> emissions include the following:

- Emissions resulting from the substitution of ODS (e.g., chlorofluorocarbons [CFCs]) have been consistently increasing, from small amounts in 1990 to 161.2 MMT CO<sub>2</sub> Eq. in 2014. This increase was in large part the result of efforts to phase out CFCs and other ODS in the United States. In the short term, this trend is expected to continue, and will likely continue over the next decade as hydrochlorofluorocarbons (HCFCs), which are interim substitutes in many applications, are themselves phased out under the provisions of the *Copenhagen Amendments to the Montreal Protocol*.
- GWP-weighted PFC, HFC, SF<sub>6</sub>, and NF<sub>3</sub> emissions from semiconductor manufacture have increased by 27.4 percent from 1990 to 2014, due to industrial growth and the adoption of emission reduction technologies. Within that time span, emissions peaked in 1999, the initial year of EPA's PFC Reduction/Climate Partnership for the Semiconductor Industry, but have since declined to 4.5 MMT CO<sub>2</sub> Eq. in 2014 (a 49.8 percent decrease relative to 1999).
- Sulfur hexafluoride emissions from electric power transmission and distribution systems decreased by 77.9 percent (19.8 MMT CO<sub>2</sub> Eq.) from 1990 to 2014. There are two potential causes for this decrease: (1) a sharp increase in the price of SF<sub>6</sub> during the 1990s and (2) a growing awareness of the environmental



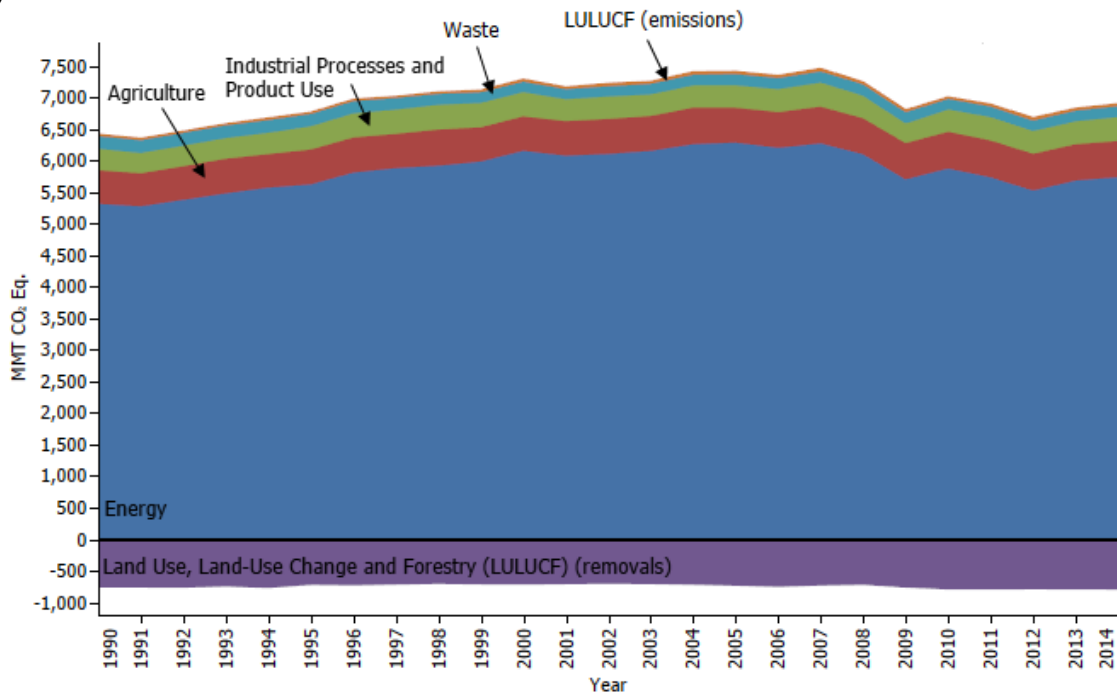
impact of SF<sub>6</sub> emissions through programs such as EPA’s SF<sub>6</sub> Emission Reduction Partnership for Electric Power Systems.

- Perfluorocarbon emissions from aluminum production decreased by 88.2 percent (18.9 MMT CO<sub>2</sub> Eq.) from 1990 to 2014. This decline is due both to reductions in domestic aluminum production and to actions taken by aluminum smelting companies to reduce the frequency and duration of anode effects.

## ES.3. Overview of Sector Emissions and Trends

In accordance with the UNFCCC decision to set the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (IPCC 2006) as the standard for Annex I countries at the Nineteenth Conference of the Parties (UNFCCC 2014), Figure ES-11 and Table ES-4 aggregate emissions and sinks by the sectors defined by those guidelines. Over the twenty-five-year period of 1990 to 2014, total emissions in the Energy, Industrial Processes and Product Use, and Agriculture grew by 421.3 MMT CO<sub>2</sub> Eq. (7.9 percent), 38.3 MMT CO<sub>2</sub> Eq. (11.2 percent), and 41.6 MMT CO<sub>2</sub> Eq. (7.8 percent), respectively. Over the same period, total emissions in the Waste sector decreased by 27.9 MMT CO<sub>2</sub> Eq. (14.0 percent) and estimates of net C sequestration in the Land Use, Land-Use Change, and Forestry (LULUCF) sector (magnitude of emissions plus CO<sub>2</sub> removals from all LULUCF source categories) decreased by 24.5 MMT CO<sub>2</sub> Eq. (3.3 percent).

**Figure ES-11: U.S. Greenhouse Gas Emissions and Sinks by Chapter/IPCC Sector (MMT CO<sub>2</sub> Eq.)**



**Table ES-4: Recent Trends in U.S. Greenhouse Gas Emissions and Sinks by Chapter/IPCC Sector (MMT CO<sub>2</sub> Eq.)**

Chapter/IPCC Sector	1990	2005	2010	2011	2012	2013	2014
Energy	5,324.9	6,294.5	5,884.6	5,744.0	5,533.9	5,693.5	5,746.2
Fossil Fuel Combustion	4,740.7	5,747.1	5,358.3	5,227.7	5,024.7	5,157.6	5,208.2

Natural Gas Systems	244.5	207.4	198.6	205.7	207.8	214.0	218.5
Non-Energy Use of Fuels	118.1	138.9	114.1	108.5	105.6	121.7	114.3
Petroleum Systems	42.3	52.8	58.2	60.5	62.2	68.4	71.7
Coal Mining	96.5	64.1	82.3	71.2	66.5	64.6	67.6
Stationary Combustion	20.4	27.6	29.2	28.4	28.0	30.9	31.5
Mobile Combustion	46.9	37.1	25.9	24.7	22.2	20.3	18.4
Incineration of Waste	8.4	12.8	11.4	10.9	10.7	9.7	9.7
Abandoned Underground Coal Mines	7.2	6.6	6.6	6.4	6.2	6.2	6.3
<b>Industrial Processes and Product Use</b>	<b>340.9</b>	<b>354.3</b>	<b>353.0</b>	<b>370.5</b>	<b>360.1</b>	<b>363.5</b>	<b>379.2</b>
Substitution of Ozone Depleting Substances	0.3	99.7	141.2	145.3	150.2	154.6	161.2
Iron and Steel Production & Metallurgical Coke Production	99.7	66.6	55.7	59.9	54.2	52.2	55.4
Cement Production	33.3	45.9	31.3	32.0	35.1	36.1	38.8
Petrochemical Production	21.8	27.5	27.3	26.4	26.5	26.5	26.6
Lime Production	11.7	14.6	13.4	14.0	13.7	14.0	14.1
Other Process Uses of Carbonates	4.9	6.3	9.6	9.3	8.0	10.4	12.1
Nitric Acid Production	12.1	11.3	11.5	10.9	10.5	10.7	10.9
Ammonia Production	13.0	9.2	9.2	9.3	9.4	10.0	9.4
Electrical Transmission and Distribution	25.4	10.6	7.0	6.8	5.6	5.4	5.6
Adipic Acid Production	15.2	7.1	4.2	10.2	5.5	4.0	5.4
Aluminum Production	28.3	7.6	4.6	6.8	6.4	6.2	5.4
HCFC-22 Production	46.1	20.0	8.0	8.8	5.5	4.1	5.0
Semiconductor Manufacture	3.6	4.7	4.0	5.1	4.5	4.2	4.7
Carbon Dioxide Consumption	1.5	1.4	4.4	4.1	4.0	4.2	4.5
N <sub>2</sub> O from Product Uses	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Urea Consumption for Non-Agricultural Purposes	3.8	3.7	4.7	4.0	4.4	4.2	4.0
Soda Ash Production and Consumption	2.8	3.0	2.7	2.7	2.8	2.8	2.8
Ferroalloy Production	2.2	1.4	1.7	1.7	1.9	1.8	1.9
Titanium Dioxide Production	1.2	1.8	1.8	1.7	1.5	1.7	1.8
Glass Production	1.5	1.9	1.5	1.3	1.2	1.3	1.3
Magnesium Production and Processing	5.2	2.7	2.1	2.8	1.7	1.5	1.2
Phosphoric Acid Production	1.5	1.3	1.1	1.2	1.1	1.1	1.1
Zinc Production	0.6	1.0	1.2	1.3	1.5	1.4	1.0
Lead Production	0.5	0.6	0.5	0.5	0.5	0.5	0.5
Silicon Carbide Production and Consumption	0.4	0.2	0.2	0.2	0.2	0.2	0.2
<b>Agriculture</b>	<b>532.0</b>	<b>552.2</b>	<b>582.3</b>	<b>583.1</b>	<b>583.3</b>	<b>575.3</b>	<b>573.6</b>
Agricultural Soil Management	303.3	297.2	320.7	323.1	323.1	318.6	318.4
Enteric Fermentation	164.2	168.9	171.3	168.9	166.7	165.5	164.3
Manure Management	51.1	72.9	78.1	78.9	81.2	78.9	78.7
Rice Cultivation	13.1	13.0	11.9	11.8	11.9	11.9	11.9
Field Burning of Agricultural Residues	0.3	0.3	0.4	0.4	0.4	0.4	0.4
<b>Waste</b>	<b>199.3</b>	<b>177.8</b>	<b>165.5</b>	<b>167.8</b>	<b>165.7</b>	<b>167.8</b>	<b>171.4</b>
Landfills	179.6	154.0	142.1	144.4	142.3	144.3	148.0
Wastewater Treatment	19.0	20.2	19.9	19.9	19.8	19.6	19.5
Composting	0.7	3.5	3.5	3.5	3.7	3.9	3.9
<b>Total Emissions<sup>a</sup></b>	<b>6,397.1</b>	<b>7,378.8</b>	<b>6,985.5</b>	<b>6,865.4</b>	<b>6,643.0</b>	<b>6,800.0</b>	<b>6,870.5</b>
<b>Land Use, Land-Use Change, and Forestry</b>	<b>(738.0)</b>	<b>(698.5)</b>	<b>(766.4)</b>	<b>(762.0)</b>	<b>(749.7)</b>	<b>(759.6)</b>	<b>(762.5)</b>
Forest Land	(718.7)	(675.8)	(736.5)	(725.6)	(717.4)	(726.8)	(730.0)
Cropland	38.5	25.9	34.0	17.1	21.1	21.1	22.3
Grassland	26.2	39.8	32.0	43.0	43.9	44.1	44.2

Wetlands	1.1	1.1	1.0	0.9	0.8	0.8	0.8
Settlements	(59.0)	(78.2)	(83.8)	(84.8)	(85.8)	(87.1)	(88.2)
Other	(26.0)	(11.4)	(13.2)	(12.7)	(12.2)	(11.7)	(11.6)
<b>Net Emissions (Sources and Sinks)<sup>b</sup></b>	<b>5,659.2</b>	<b>6,680.3</b>	<b>6,219.0</b>	<b>6,103.4</b>	<b>5,893.3</b>	<b>6,040.4</b>	<b>6,108.0</b>

Notes: Total emissions presented without LULUCF. Net emissions presented with LULUCF.

<sup>a</sup> Total emissions without LULUCF.

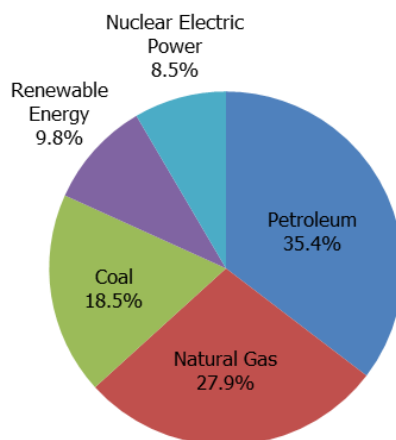
<sup>b</sup> Total emissions with LULUCF.

Notes: Totals may not sum due to independent rounding. Parentheses indicate negative values or sequestration.

## Energy

The Energy chapter contains emissions of all greenhouse gases resulting from stationary and mobile energy activities including fuel combustion and fugitive fuel emissions. Energy-related activities, primarily fossil fuel combustion, accounted for the vast majority of U.S. CO<sub>2</sub> emissions for the period of 1990 through 2014. In 2014, approximately 82 percent of the energy consumed in the United States (on a Btu basis) was produced through the combustion of fossil fuels. The remaining 18 percent came from other energy sources such as hydropower, biomass, nuclear, wind, and solar energy (see Figure ES-12). Energy-related activities are also responsible for CH<sub>4</sub> and N<sub>2</sub>O emissions (45 percent and 10 percent of total U.S. emissions of each gas, respectively). Overall, emission sources in the Energy chapter account for a combined 83.6 percent of total U.S. greenhouse gas emissions in 2014.

**Figure ES-12: 2014 U.S. Energy Consumption by Energy Source (Percent)**



## Industrial Processes and Product Use

The Industrial Processes and Product Use (IPPU) chapter includes greenhouse gas emissions occurring from industrial processes and from the use of greenhouse gases in products.

Greenhouse gas emissions are produced as the by-products of many non-energy-related industrial activities. For example, industrial processes can chemically transform raw materials, which often release waste gases such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. These processes include iron and steel production and metallurgical coke production, cement production, ammonia production, urea consumption, lime production, other process uses of carbonates (e.g., flux stone, flue gas desulfurization, and glass manufacturing), soda ash production and consumption, titanium dioxide production, phosphoric acid production, ferroalloy production, CO<sub>2</sub> consumption, silicon carbide production and consumption, aluminum production, petrochemical production, nitric acid production, adipic acid production, lead production, zinc production, and N<sub>2</sub>O from product uses. Industrial processes also release HFCs, PFCs, SF<sub>6</sub>, and

NF<sub>3</sub>. In addition to their use as ODS substitutes, HFCs, PFCs, SF<sub>6</sub>, NF<sub>3</sub>, and other fluorinated compounds are employed and emitted by a number of other industrial sources in the United States. These industries include aluminum production, HCFC-22 production, semiconductor manufacture, electric power transmission and distribution, and magnesium metal production and processing. Overall, emission sources in the Industrial Process and Product Use chapter account for 5.5 percent of U.S. greenhouse gas emissions in 2014.

## Agriculture

The Agriculture chapter contains anthropogenic emissions from agricultural activities (except fuel combustion, which is addressed in the Energy chapter, and agricultural CO<sub>2</sub> fluxes, which are addressed in the Land Use, Land-Use Change, and Forestry chapter). Agricultural activities contribute directly to emissions of greenhouse gases through a variety of processes, including the following source categories: enteric fermentation in domestic livestock, livestock manure management, rice cultivation, agricultural soil management, and field burning of agricultural residues. CH<sub>4</sub> and N<sub>2</sub>O were the primary greenhouse gases emitted by agricultural activities. CH<sub>4</sub> emissions from enteric fermentation and manure management represented 22.5 percent and 8.4 percent of total CH<sub>4</sub> emissions from anthropogenic activities, respectively, in 2014. Agricultural soil management activities such as fertilizer application and other cropping practices were the largest source of U.S. N<sub>2</sub>O emissions in 2014, accounting for 78.9 percent. In 2014, emission sources accounted for in the Agricultural chapters were responsible for 8.3 percent of total U.S. greenhouse gas emissions.

## Land Use, Land-Use Change, and Forestry

The Land Use, Land-Use Change, and Forestry chapter contains emissions of CH<sub>4</sub> and N<sub>2</sub>O, and emissions and removals of CO<sub>2</sub> from forest management, other land-use activities, and land-use change. Forest management practices, tree planting in urban areas, the management of agricultural soils, and the landfilling of yard trimmings and food scraps resulted in a net removal of CO<sub>2</sub> (C sequestration) in the United States. Forests (including vegetation, soils, and harvested wood) accounted for 87 percent of total 2014 CO<sub>2</sub> removals, urban trees accounted for 11 percent, landfilled yard trimmings and food scraps accounted for 1.4 percent, and mineral and organic soil C stock changes from *Cropland Remaining Cropland* accounted for 1.0 percent of the total CO<sub>2</sub> removals in 2014. The net forest sequestration is a result of net forest growth and increasing forest area, as well as a net accumulation of C stocks in harvested wood pools. The net sequestration in urban forests is a result of net tree growth in these areas. In agricultural soils, mineral and organic soils sequester approximately as much C as is emitted from these soils through liming and urea fertilization. The mineral soil C sequestration is largely due to the conversion of cropland to permanent pastures and hay production, a reduction in summer fallow areas in semi-arid areas, an increase in the adoption of conservation tillage practices, and an increase in the amounts of organic fertilizers (i.e., manure and sewage sludge) applied to agriculture lands. The landfilled yard trimmings and food scraps net sequestration is due to the long-term accumulation of yard trimming carbon and food scraps in landfills.

LULUCF activities in 2014 resulted in a net increase in C stocks (i.e., net CO<sub>2</sub> removals) of 787.0 MMT CO<sub>2</sub> Eq. (Table ES-5).<sup>20</sup> This represents an offset of 11.5 percent of total (i.e., gross) greenhouse gas emissions in 2014. Emissions from land use, land-use change, and forestry activities in 2014 are 24.6 MMT CO<sub>2</sub> Eq. and represent 0.4 percent of total greenhouse gas emissions.<sup>21</sup> Between 1990 and 2014, total C sequestration in the LULUCF sector increased by 4.5 percent, primarily due to an increase in the rate of net C accumulation in forest and urban tree C stocks. Annual C accumulation in landfilled yard trimmings and food scraps slowed over this period, while the rate of annual C accumulation increased in urban trees.

Carbon dioxide removals are presented in Table ES-5 along with CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions for LULUCF source categories. Liming and urea fertilization in 2014 resulted in CO<sub>2</sub> emissions of 8.7 MMT CO<sub>2</sub> Eq. (8,653 kt). Lands

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<sup>20</sup> Net CO<sub>2</sub> flux is the net C stock change from the following categories: *Forest Land Remaining Forest Land, Land Converted to Forest Land, Cropland Remaining Cropland, Land Converted to Cropland, Grassland Remaining Grassland, Land Converted to Grassland, Settlements Remaining Settlements, and Other.*

<sup>21</sup> LULUCF emissions include the CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions reported for Non-CO<sub>2</sub> Emissions from Forest Fires, N<sub>2</sub>O Fluxes from Forest Soils, CO<sub>2</sub> Emissions from Liming, CO<sub>2</sub> Emissions from Urea Fertilization, Peatlands Remaining Peatlands, and N<sub>2</sub>O Fluxes from Settlement Soils.

undergoing peat extraction (i.e., *Peatlands Remaining Peatlands*) resulted in CO<sub>2</sub> emissions of 0.8 MMT CO<sub>2</sub> Eq. (842 kt) and CH<sub>4</sub> and N<sub>2</sub>O emissions of less than 0.05 MMT CO<sub>2</sub> Eq. each. The application of synthetic fertilizers to forest soils in 2014 resulted in N<sub>2</sub>O emissions of 0.5 MMT CO<sub>2</sub> Eq. (2 kt). N<sub>2</sub>O emissions from fertilizer application to forest soils have increased by 455 percent since 1990, but still account for a relatively small portion of overall emissions. Additionally, N<sub>2</sub>O emissions from fertilizer application to settlement soils in 2014 accounted for 2.4 MMT CO<sub>2</sub> Eq. (8 kt). This represents an increase of 78 percent since 1990. Forest fires in 2014 resulted in CH<sub>4</sub> emissions of 7.3 MMT CO<sub>2</sub> Eq. (294 kt), and in N<sub>2</sub>O emissions of 4.8 MMT CO<sub>2</sub> Eq. (16 kt).

**Table ES-5: U.S. Greenhouse Gas Emissions and Removals (Net Flux) from Land Use, Land-Use Change, and Forestry (MMT CO<sub>2</sub> Eq.)**

Gas/Land-Use Category	1990	2005	2010	2011	2012	2013	2014
<b>Net CO<sub>2</sub> Flux<sup>a</sup></b>	<b>(753.0)</b>	<b>(726.7)</b>	<b>(784.3)</b>	<b>(784.9)</b>	<b>(782.0)</b>	<b>(783.7)</b>	<b>(787.0)</b>
Forest Land Remaining Forest Land <sup>b</sup>	(723.5)	(691.9)	(742.0)	(736.7)	(735.8)	(739.1)	(742.3)
Land Converted to Forest Land	(0.7)	(0.8)	(0.4)	(0.4)	(0.4)	(0.3)	(0.3)
Cropland Remaining Cropland	(34.3)	(14.1)	1.8	(12.5)	(11.2)	(9.3)	(8.4)
Land Converted to Cropland	65.7	32.2	23.7	21.6	22.0	22.1	22.1
Grassland Remaining Grassland	(12.9)	(3.3)	(7.3)	3.1	3.6	3.8	3.8
Land Converted to Grassland	39.1	43.1	39.3	39.9	40.4	40.4	40.4
Settlements Remaining Settlements	(60.4)	(80.5)	(86.1)	(87.3)	(88.4)	(89.5)	(90.6)
Other: Landfilled Yard Trimmings and Food Scraps	(26.0)	(11.4)	(13.2)	(12.7)	(12.2)	(11.7)	(11.6)
<b>CO<sub>2</sub></b>	<b>8.1</b>	<b>9.0</b>	<b>9.6</b>	<b>8.9</b>	<b>11.0</b>	<b>9.0</b>	<b>9.5</b>
Cropland Remaining Cropland: CO <sub>2</sub> Emissions from Urea Fertilization	2.4	3.5	3.8	4.1	4.2	4.3	4.5
Cropland Remaining Cropland: CO <sub>2</sub> Emissions from Liming	4.7	4.3	4.8	3.9	6.0	3.9	4.1
Wetlands Remaining Wetlands: Peatlands Remaining Peatlands	1.1	1.1	1.0	0.9	0.8	0.8	0.8
<b>CH<sub>4</sub></b>	<b>3.3</b>	<b>9.9</b>	<b>3.3</b>	<b>6.6</b>	<b>11.1</b>	<b>7.3</b>	<b>7.4</b>
Forest Land Remaining Forest Land: Non-CO <sub>2</sub> Emissions from Forest Fires	3.3	9.9	3.3	6.6	11.1	7.3	7.3
Wetlands Remaining Wetlands: Peatlands Remaining Peatlands	+	+	+	+	+	+	+
<b>N<sub>2</sub>O</b>	<b>3.6</b>	<b>9.3</b>	<b>5.0</b>	<b>7.3</b>	<b>10.3</b>	<b>7.7</b>	<b>7.7</b>
Forest Land Remaining Forest Land: Non-CO <sub>2</sub> Emissions from Forest Fires	2.2	6.5	2.2	4.4	7.3	4.8	4.8
Settlements Remaining Settlements: N <sub>2</sub> O Fluxes from Settlement Soils <sup>c</sup>	1.4	2.3	2.4	2.5	2.5	2.4	2.4
Forest Land Remaining Forest Land: N <sub>2</sub> O Fluxes from Forest Soils <sup>d</sup>	0.1	0.5	0.5	0.5	0.5	0.5	0.5
Wetlands Remaining Wetlands: Peatlands Remaining Peatlands	+	+	+	+	+	+	+
<b>LULUCF Emissions<sup>e</sup></b>	<b>15.0</b>	<b>28.2</b>	<b>17.8</b>	<b>22.9</b>	<b>32.3</b>	<b>24.1</b>	<b>24.6</b>
<b>LULUCF Total Net Flux<sup>a</sup></b>	<b>(753.0)</b>	<b>(726.7)</b>	<b>(784.3)</b>	<b>(784.9)</b>	<b>(782.0)</b>	<b>(783.7)</b>	<b>(787.0)</b>
<b>LULUCF Sector Total<sup>f</sup></b>	<b>(738.0)</b>	<b>(698.5)</b>	<b>(766.4)</b>	<b>(762.0)</b>	<b>(749.7)</b>	<b>(759.6)</b>	<b>(762.5)</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

<sup>a</sup> Net CO<sub>2</sub> flux is the net C stock change from the following categories: *Forest Land Remaining Forest Land, Land Converted to Forest Land, Cropland Remaining Cropland, Land Converted to Cropland, Grassland Remaining Grassland, Land Converted to Grassland, Settlements Remaining Settlements, and Other.*

<sup>b</sup> Includes the effects of net additions to stocks of carbon stored in forest ecosystem pools and harvested wood products.

<sup>c</sup> Estimates include emissions from N fertilizer additions on both *Settlements Remaining Settlements* and *Land Converted to Settlements*.

<sup>d</sup> Estimates include emissions from N fertilizer additions on both *Forest Land Remaining Forest Land* and *Land Converted to Forest Land*.

<sup>e</sup> LULUCF emissions include the CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions reported for Non-CO<sub>2</sub> Emissions from Forest Fires, N<sub>2</sub>O Fluxes from Forest Soils, CO<sub>2</sub> Emissions from Liming, CO<sub>2</sub> Emissions from Urea Fertilization, Peatlands Remaining Peatlands, and N<sub>2</sub>O Fluxes from Settlement Soils.

<sup>f</sup> The LULUCF Sector Total is the net sum of all emissions (i.e., sources) of greenhouse gases to the atmosphere plus removals of CO<sub>2</sub> (i.e., sinks or negative emissions) from the atmosphere.

Notes: Totals may not sum due to independent rounding. Parentheses indicate net sequestration.

## Waste

The Waste chapter contains emissions from waste management activities (except incineration of waste, which is addressed in the Energy chapter). Landfills were the largest source of anthropogenic greenhouse gas emissions in the Waste chapter, accounting for 86.3 percent of this chapter's emissions, and 20.2 percent of total U.S. CH<sub>4</sub> emissions.<sup>22</sup> Additionally, wastewater treatment accounts for 11.4 percent of Waste emissions, 2.0 percent of U.S. CH<sub>4</sub> emissions, and 1.2 percent of U.S. N<sub>2</sub>O emissions. Emissions of CH<sub>4</sub> and N<sub>2</sub>O from composting are also accounted for in this chapter, generating emissions of 2.1 MMT CO<sub>2</sub> Eq. and 1.8 MMT CO<sub>2</sub> Eq., respectively. Overall, emission sources accounted for in the Waste chapter generated 2.5 percent of total U.S. greenhouse gas emissions in 2014.

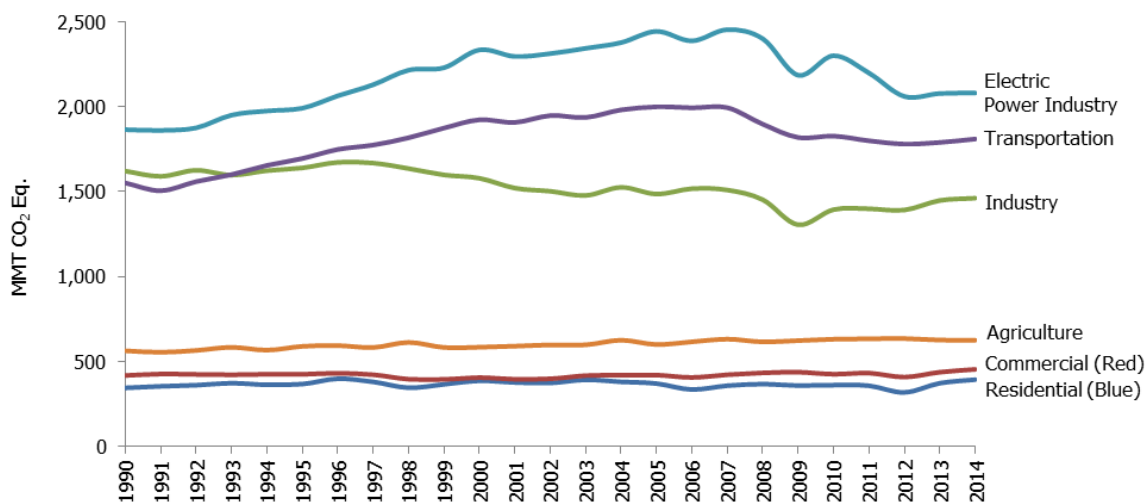
## ES.4. Other Information

### Emissions by Economic Sector

Throughout the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* report, emission estimates are grouped into five sectors (i.e., chapters) defined by the IPCC: Energy; Industrial Processes and Product Use; Agriculture; LULUCF; and Waste. While it is important to use this characterization for consistency with UNFCCC reporting guidelines, it is also useful to allocate emissions into more commonly used sectoral categories. This section reports emissions by the following economic sectors: residential, commercial, industry, transportation, electricity generation, agriculture, and U.S. Territories.

Table ES-6 summarizes emissions from each of these economic sectors, and Figure ES-13 shows the trend in emissions by sector from 1990 to 2014.

**Figure ES-13: U.S. Greenhouse Gas Emissions Allocated to Economic Sectors (MMT CO<sub>2</sub> Eq.)**



<sup>22</sup> Landfills also store carbon, due to incomplete degradation of organic materials such as harvest wood products, yard trimmings, and food scraps, as described in the Land-Use, Land-Use Change, and Forestry chapter of the Inventory report.

**Table ES-6: U.S. Greenhouse Gas Emissions Allocated to Economic Sectors (MMT CO<sub>2</sub> Eq.)**

<b>Economic Sectors</b>	<b>1990</b>	<b>2005</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Electric Power Industry	1,864.8	2,443.9	2,300.5	2,198.1	2,060.7	2,078.0	2,080.7
Transportation	1,551.3	1,999.6	1,827.4	1,799.6	1,780.4	1,789.9	1,810.3
Industry <sup>1</sup>	1,620.9	1,486.2	1,394.5	1,399.0	1,392.1	1,448.2	1,461.7
Agriculture	563.4	600.2	631.1	633.7	635.4	626.3	625.4
Commercial	418.1	420.3	425.5	432.1	408.5	437.5	453.9
Residential	344.9	370.4	361.2	357.6	318.4	372.6	393.7
U.S. Territories	33.7	58.2	45.3	45.4	47.6	47.5	44.7
<b>Total Emissions</b>	<b>6,397.1</b>	<b>7,378.8</b>	<b>6,985.5</b>	<b>6,865.4</b>	<b>6,643.0</b>	<b>6,800.0</b>	<b>6,870.5</b>
<b>LULUCF Sector Total<sup>a</sup></b>	<b>(738.0)</b>	<b>(698.5)</b>	<b>(766.4)</b>	<b>(762.0)</b>	<b>(749.7)</b>	<b>(759.6)</b>	<b>(762.5)</b>
<b>Net Emissions (Sources and Sinks)</b>	<b>5,659.2</b>	<b>6,680.3</b>	<b>6,219.0</b>	<b>6,103.4</b>	<b>5,893.3</b>	<b>6,040.4</b>	<b>6,108.0</b>

Note: Total emissions presented without LULUCF. Total net emissions presented with LULUCF.

<sup>a</sup> The LULUCF Sector Total is the net sum of all emissions (i.e., sources) of greenhouse gases to the atmosphere plus removals of CO<sub>2</sub> (i.e., sinks or negative emissions) from the atmosphere.

Notes: Totals may not sum due to independent rounding. Parentheses indicate negative values or sequestration.

Using this categorization, emissions from electricity generation accounted for the largest portion (30 percent) of U.S. greenhouse gas emissions in 2014. Transportation activities, in aggregate, accounted for the second largest portion (26 percent), while emissions from industry accounted for the third largest portion (21 percent) of U.S. greenhouse gas emissions in 2014. In contrast to electricity generation and transportation, emissions from industry have in general declined over the past decade. The long-term decline in these emissions has been due to structural changes in the U.S. economy (i.e., shifts from a manufacturing-based to a service-based economy), fuel switching, and energy efficiency improvements. The remaining 22 percent of U.S. greenhouse gas emissions were contributed by, in order of magnitude, the agriculture, commercial, and residential sectors, plus emissions from U.S. Territories. Activities related to agriculture accounted for 9 percent of U.S. emissions; unlike other economic sectors, agricultural sector emissions were dominated by N<sub>2</sub>O emissions from agricultural soil management and CH<sub>4</sub> emissions from enteric fermentation. The commercial and residential sectors accounted for 7 percent and 6 percent of emissions, respectively, and U.S. Territories accounted for 1 percent of emissions; emissions from these sectors primarily consisted of CO<sub>2</sub> emissions from fossil fuel combustion. CO<sub>2</sub> was also emitted and sequestered by a variety of activities related to forest management practices, tree planting in urban areas, the management of agricultural soils, and landfilling of yard trimmings.

Electricity is ultimately consumed in the economic sectors described above. Table ES-7 presents greenhouse gas emissions from economic sectors with emissions related to electricity generation distributed into end-use categories (i.e., emissions from electricity generation are allocated to the economic sectors in which the electricity is consumed). To distribute electricity emissions among end-use sectors, emissions from the source categories assigned to electricity generation were allocated to the residential, commercial, industry, transportation, and agriculture economic sectors according to retail sales of electricity.<sup>23</sup> These source categories include CO<sub>2</sub> from fossil fuel combustion and the use of limestone and dolomite for flue gas desulfurization, CO<sub>2</sub> and N<sub>2</sub>O from incineration of waste, CH<sub>4</sub> and N<sub>2</sub>O from stationary sources, and SF<sub>6</sub> from electrical transmission and distribution systems.

When emissions from electricity are distributed among these sectors, industrial activities and transportation account for the largest shares of U.S. greenhouse gas emissions (29 percent and 26 percent, respectively) in 2014. The residential and commercial sectors contributed the next largest shares of total U.S. greenhouse gas emissions in 2014. Emissions from these sectors increase substantially when emissions from electricity are included, due to their relatively large share of electricity consumption (e.g., lighting, appliances). In all sectors except agriculture, CO<sub>2</sub> accounts for more than 80 percent of greenhouse gas emissions, primarily from the combustion of fossil fuels.

Figure ES-14 shows the trend in these emissions by sector from 1990 to 2014.

<sup>23</sup> Emissions were not distributed to U.S. Territories, since the electricity generation sector only includes emissions related to the generation of electricity in the 50 states and the District of Columbia.

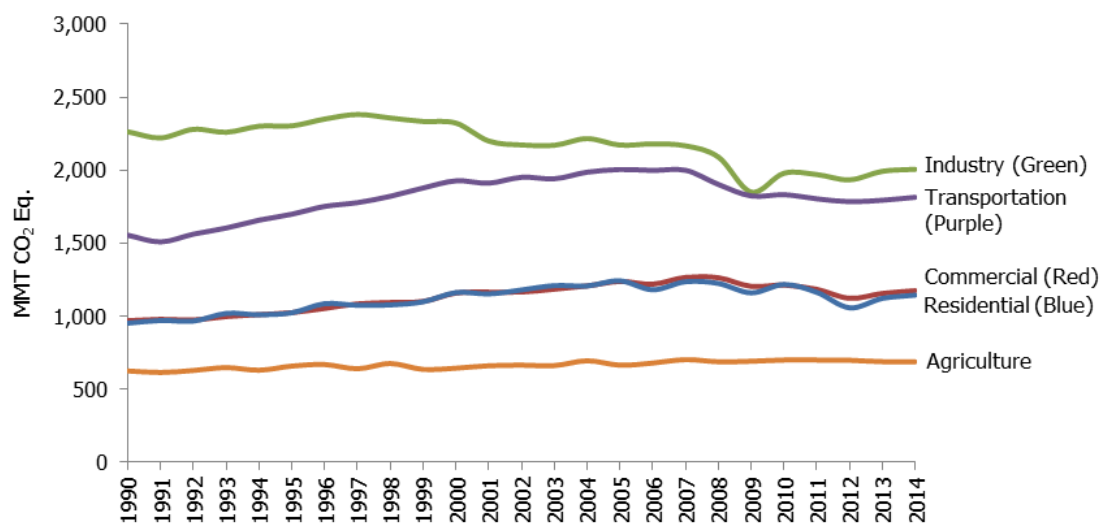
**Table ES-7: U.S. Greenhouse Gas Emissions by Economic Sector with Electricity-Related Emissions Distributed (MMT CO<sub>2</sub> Eq.)**

Implied Sectors	1990	2005	2010	2011	2012	2013	2014
Industry	2,262.9	2,171.9	1,979.1	1,970.0	1,934.0	1,992.5	2,005.7
Transportation	1,554.4	2,004.4	1,832.0	1,803.9	1,784.3	1,794.0	1,814.5
Commercial	969.1	1,238.0	1,212.8	1,183.9	1,122.1	1,155.8	1,174.7
Residential	952.2	1,242.1	1,216.9	1,163.1	1,057.5	1,121.9	1,143.8
Agriculture	624.8	664.2	699.5	699.1	697.5	688.3	687.0
U.S. Territories	33.7	58.2	45.3	45.4	47.6	47.5	44.7
<b>Total Emissions</b>	<b>6,397.1</b>	<b>7,378.8</b>	<b>6,985.5</b>	<b>6,865.4</b>	<b>6,643.0</b>	<b>6,800.0</b>	<b>6,870.5</b>
<b>LULUCF Sector Total<sup>a</sup></b>	<b>(738.0)</b>	<b>(698.5)</b>	<b>(766.4)</b>	<b>(762.0)</b>	<b>(749.7)</b>	<b>(759.6)</b>	<b>(762.5)</b>
<b>Net Emissions (Sources and Sinks)</b>	<b>5,659.2</b>	<b>6,680.3</b>	<b>6,219.0</b>	<b>6,103.4</b>	<b>5,893.3</b>	<b>6,040.4</b>	<b>6,108.0</b>

<sup>a</sup> The LULUCF Sector Total is the net sum of all emissions (i.e., sources) of greenhouse gases to the atmosphere plus removals of CO<sub>2</sub> (i.e., sinks or negative emissions) from the atmosphere.

Notes: Emissions from electricity generation are allocated based on aggregate electricity consumption in each end-use sector. Totals may not sum due to independent rounding. Parentheses indicate negative values or sequestration.

**Figure ES-14: U.S. Greenhouse Gas Emissions with Electricity-Related Emissions Distributed to Economic Sectors (MMT CO<sub>2</sub> Eq.)**



**Box ES-3: Recent Trends in Various U.S. Greenhouse Gas Emissions-Related Data**

Total emissions can be compared to other economic and social indices to highlight changes over time. These comparisons include: (1) emissions per unit of aggregate energy consumption, because energy-related activities are the largest sources of emissions; (2) emissions per unit of fossil fuel consumption, because almost all energy-related emissions involve the combustion of fossil fuels; (3) emissions per unit of electricity consumption, because the electric power industry—utilities and non-utilities combined—was the largest source of U.S. greenhouse gas emissions in 2014; (4) emissions per unit of total gross domestic product as a measure of national economic activity; and (5) emissions per capita.

Table ES-8 provides data on various statistics related to U.S. greenhouse gas emissions normalized to 1990 as a baseline year. Greenhouse gas emissions in the United States have grown at an average annual rate of 0.3 percent since 1990. Since 1990, this rate is slightly slower than that for total energy and for fossil fuel consumption, and



much slower than that for electricity consumption, overall gross domestic product and national population (see Figure ES-15).

**Table ES-8: Recent Trends in Various U.S. Data (Index 1990 = 100)**

Variable	1990	2005	2010	2011	2012	2013	2014	Avg. Annual Growth Rate
Greenhouse Gas Emissions <sup>a</sup>	100	115	109	107	104	106	107	0.3%
Energy Consumption <sup>b</sup>	100	118	116	115	112	116	117	0.7%
Fossil Fuel Consumption <sup>b</sup>	100	119	112	110	107	110	111	0.5%
Electricity Consumption <sup>b</sup>	100	134	137	137	135	136	138	1.4%
GDP <sup>c</sup>	100	159	165	168	171	174	178	2.5%
Population <sup>d</sup>	100	118	124	125	126	126	127	1.0%

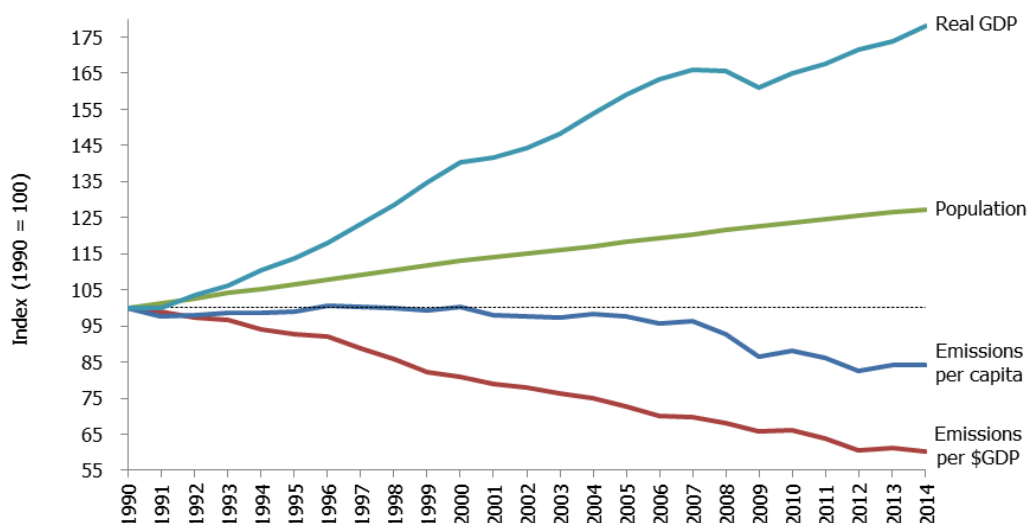
<sup>a</sup> GWP-weighted values

<sup>b</sup> Energy content-weighted values (EIA 2016)

<sup>c</sup> Gross Domestic Product in chained 2009 dollars (BEA 2016)

<sup>d</sup> U.S. Census Bureau (2015)

**Figure ES-15: U.S. Greenhouse Gas Emissions Per Capita and Per Dollar of Gross Domestic Product (GDP)**



Source: BEA (2016), U.S. Census Bureau (2015), and emission estimates in this report.

## Key Categories

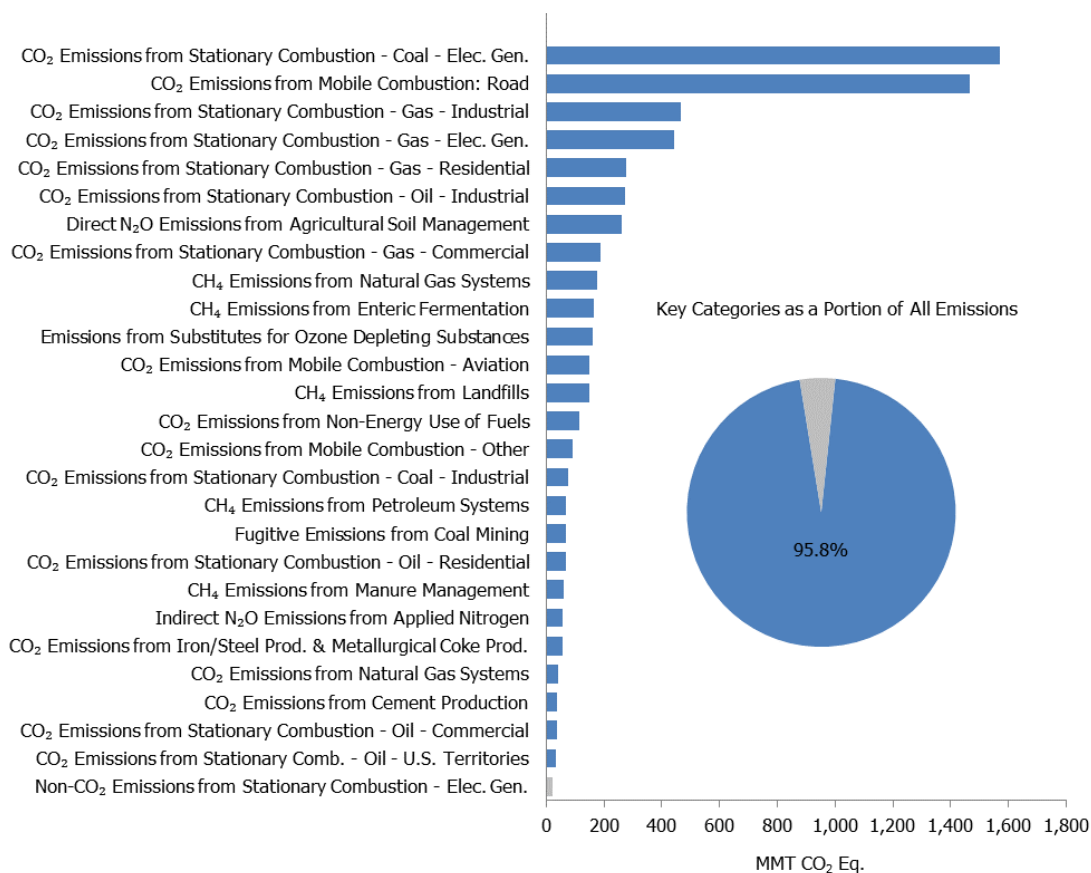
The 2006 IPCC Guidelines (IPCC 2006) defines a key category as a “[category] that is prioritized within the national inventory system because its estimate has a significant influence on a country’s total inventory of greenhouse gases in terms of the absolute level, the trend, or the uncertainty in emissions and removals.”<sup>24</sup> By definition, key categories are sources or sinks that have the greatest contribution to the absolute overall level of national emissions in any of the years covered by the time series. In addition, when an entire time series of emission estimates is prepared, a thorough investigation of key categories must also account for the influence of trends of

<sup>24</sup> See Chapter 4 “Methodological Choice and Identification of Key Categories” in IPCC (2006). See <<http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol1.html>>

individual source and sink categories. Finally, a qualitative evaluation of key categories should be performed, in order to capture any key categories that were not identified in either of the quantitative analyses.

Figure ES-16 presents 2014 emission estimates for the key categories as defined by a level analysis (i.e., the contribution of each source or sink category to the total inventory level). The UNFCCC reporting guidelines request that key category analyses be reported at an appropriate level of disaggregation, which may lead to source and sink category names which differ from those used elsewhere in the Inventory report. For more information regarding key categories, see Section 1.5 – Key Categories and Annex 1.

**Figure ES-16: 2014 Key Categories (MMT CO<sub>2</sub> Eq.)**



Note: For a complete discussion of the key category analysis, see Annex 1. Blue bars indicate either an Approach 1, or Approach 1 and Approach 2 level assessment key category. Gray bars indicate solely an Approach 2 level assessment key category.

## Quality Assurance and Quality Control (QA/QC)

The United States seeks to continually improve the quality, transparency, and credibility of the *Inventory of U.S. Greenhouse Gas Emissions and Sinks*. To assist in these efforts, the United States implemented a systematic approach to QA/QC. While QA/QC has always been an integral part of the U.S. national system for Inventory development, the procedures followed for the current Inventory have been formalized in accordance with the *Quality Assurance/Quality Control and Uncertainty Management Plan (QA/QC Management Plan)* for the Inventory and the UNFCCC reporting guidelines.

## Uncertainty Analysis of Emission Estimates

Uncertainty estimates are an essential element of a complete inventory of greenhouse gas emissions and removals. Some of the current estimates, such as those for CO<sub>2</sub> emissions from energy-related activities and cement processing, are considered to have low uncertainties. For some other categories of emissions, however, a lack of data or an incomplete understanding of how emissions are generated increases the uncertainty associated with the estimates presented. Acquiring a better understanding of the uncertainty associated with inventory estimates is an important step in helping to prioritize future work and improve the overall quality of the Inventory. Recognizing the benefit of conducting an uncertainty analysis, the UNFCCC reporting guidelines follow the recommendations of the *2006 IPCC Guidelines* (IPCC 2006) and require that countries provide single estimates of uncertainty for source and sink categories.

Currently, a qualitative discussion of uncertainty is presented for all source and sink categories. Within the discussion of each emission source, specific factors affecting the uncertainty surrounding the estimates are discussed. Most sources also contain a quantitative uncertainty assessment, in accordance with UNFCCC reporting guidelines.

### Box ES-4: Recalculations of Inventory Estimates

Each year, emission and sink estimates are recalculated and revised for all years in the *Inventory of U.S. Greenhouse Gas Emissions and Sinks*, as attempts are made to improve both the analyses themselves, through the use of better methods or data, and the overall usefulness of the report. In this effort, the United States follows the *2006 IPCC Guidelines* (IPCC 2006), which states, “Both methodological changes and refinements over time are an essential part of improving inventory quality. It is good practice to change or refine methods when: available data have changed; the previously used method is not consistent with the IPCC guidelines for that category; a category has become key; the previously used method is insufficient to reflect mitigation activities in a transparent manner; the capacity for inventory preparation has increased; new inventory methods become available; and for correction of errors.” In general, recalculations are made to the U.S. greenhouse gas emission estimates either to incorporate new methodologies or, most commonly, to update recent historical data.

In each Inventory report, the results of all methodology changes and historical data updates are presented in the Recalculations and Improvements chapter; detailed descriptions of each recalculation are contained within each source's description contained in the report, if applicable. In general, when methodological changes have been implemented, the entire time series (in the case of the most recent Inventory report, 1990 through 2013) has been recalculated to reflect the change, per the *2006 IPCC Guidelines* (IPCC 2006). Changes in historical data are generally the result of changes in statistical data supplied by other agencies. References for the data are provided for additional information.

## Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2014: Revisions to Natural Gas and Petroleum Production Emissions

Substantial new data are available on natural gas and petroleum systems from subpart W of the EPA's greenhouse gas reporting program (GHGRP). The data reported to subpart W include activity data (e.g., frequency of certain activities, equipment counts) and emissions. Emissions are estimated using differing methodologies depending on the emission source, including the use of emission factors (EFs) or emissions measurements. The emission sources included in subpart W are similar to those in the GHGI, but there are differences in coverage and emission estimation methods. The EPA evaluated approaches for incorporating this new data into its emission estimates for the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (GHGI). This memorandum discusses incorporation of GHGRP subpart W data for pneumatic controllers and major equipment (equipment leaks sources) in the onshore production segment into the 2016 GHGI. For purposes of simplicity in this memorandum, chemical injection pumps (CIPs) are included under the major equipment category.

Not all onshore production activity nationwide is reported to subpart W—only facilities (defined as unique combination of operator and AAPG basin of operation) that meet the reporting threshold of 25,000 metric tons of CO<sub>2</sub> equivalent (MT CO<sub>2</sub>e) report data under the GHGRP subpart W. Facilities that meet this threshold have been reporting under subpart W since 2011; currently, four years of subpart W reporting data are publically available, covering reporting year (RY) 2011 through RY2014.

This memo describes on the 2016 GHGI revisions to activity data in the production segments for natural gas and petroleum systems, specifically to pneumatic controllers and equipment leaks, updates to emission factors for pneumatic controllers and CIPs, and updates to hydraulically fractured oil well completions.

In this memo, “2015 GHGI” refers to the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013*, published April 15, 2015, and “2016 GHGI” refers to the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014*, published April 15, 2016.

### **Background on Current GHGI Methodology and Available Data**

For many sources in the GHGI, direct activity data are not available for every year of the time series. For these sources, generally, activity data drivers are used along with activity data ratios developed for the year with available data (commonly, 1992) to update activity data for each year in the GHGI. Activity data drivers currently used in the GHGI include statistics on gas production, number of wells, system throughput, miles of various types of pipeline, and other statistics that characterize the changes in the U.S. natural gas system infrastructure and operations.

For example, recent data on various types of production field equipment (e.g., heaters, separators, and dehydrators) are not available. The EPA determined that each of these types of field separation equipment relate to the number of non-associated gas wells. Using the number of each type of field separation equipment estimated by GRI/EPA in 1992, and the number of non-associated gas wells in 1992, the EPA developed a factor that is used to estimate the number of each type of field separation equipment throughout the time series based on the count of non-associated gas wells obtained for a

given year. Further information on current activity data methodology is provided in Annex 3 of the 2015 GHGI report.<sup>1</sup>

### ***GHGRP Subpart W***

Onshore natural gas and petroleum production facilities that are required to submit annual reports under subpart W of the GHGRP calculate methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>) emissions from *natural gas pneumatic device venting* (using the calculation methodology required by 40 CFR 98.233(a)), CIPs (using the calculation methodology required by 40 CFR 98.233(c)), and *equipment leaks using population counts* (using the calculation methodology required by 40 CFR 98.233(r)). Data for those two types of emission sources are reported at the facility level (i.e., unique combination of operator and AAPG basin). Data reported do not include information on production type (gas or oil).

When subpart W was originally promulgated in November 2010, the EPA deferred the reporting deadline for certain subpart W equation inputs until March 31, 2015. In October 2014, the EPA finalized the approach to collecting these deferred inputs. Subpart W reporters were required to submit both an expanded set of data elements for RY2014 and the deferred data elements for RYs 2011, 2012, and 2013 by March 31, 2015. The GHGRP subpart W data used in the analyses discussed in this memorandum are those reported to the EPA as of August 16, 2015.

There are important considerations for the incorporation of subpart W data into the GHGI. Due to the GHGRP reporting threshold, the subpart W data set is not a national total, and therefore coverage and representativeness must be taken into consideration when using the data to develop national activity or emissions estimates.

- (1) Subpart W activity data need to be scaled up to national activity. Subpart W activity data could be normalized to a scalable basis. For example, subpart W equipment counts per well could be developed from the reported data, and then these counts per well could be multiplied by national well counts obtained from DrillingInfo data in each given year to obtain a national estimate of equipment counts in that year.
- (2) Subpart W reports reflect activities at facilities exceeding the emission threshold. While EPA estimates that subpart W reporting covers the majority of national oil and gas production, the reporting facilities represent approximately 30% of producing wells in the U.S., located within large facilities that exceed the emissions threshold for reporting. The degree to which production segment activity data at reporting facilities is representative of all facilities (including small facilities) nationwide should be considered.
- (3) Subpart W onshore production segment reports reflect activities and equipment on or associated with a single well pad. The GHGI production segment estimates have historically included emissions from centralized production (e.g., tank batteries) and gathering and boosting activities. To avoid omissions or double counting, updates to GHGI production segment data must be considered in conjunction with updates to gathering and boosting methods and data.<sup>2</sup>

### Subpart W Data for Natural Gas-driven Pneumatic Controllers

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<sup>1</sup> <http://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-GHGI-2015-Annex-3-Additional-Source-or-Sink-Categories.pdf>

<sup>2</sup> A companion memo titled "GHGI of U.S. Greenhouse Gas Emissions and Sinks 1990-2014: Revisions to Natural Gas Gathering and Boosting Emissions" (April 2016) discusses revisions including updating some of the production emission calculation methodologies based on Marchese et al. (2015) measurement data for centralized production and gathering-only facilities.

For onshore production, the calculation of emissions from natural gas-driven pneumatic controller venting is based on counts (which may be estimated based on best available data for the first two RYs) of low-bleed, high-bleed, and intermittent-bleed pneumatic controllers. Counts of each type of pneumatic controller are now available for RY2011 through RY2014. These values are shown in Table 1 below. 75% of reporting onshore production facilities for RY2011, 76% for RY2012, and 81% for RY2013 reported pneumatic controller counts.

**Table 1. Reported Natural Gas Pneumatic Controller Counts for RY2011-2014**

<b>Number of Reporting Facilities</b>	<b>RY2011</b>	<b>RY2012</b>	<b>RY2013</b>	<b>RY2014</b>
Number of Onshore Production Facilities Reporting Under Subpart W	458	504	507	564
<b>Reported Actual and Estimated Pneumatic Controller Counts, by Bleed Type:</b>				
Low-Bleed Pneumatic Controllers	214,211	218,570	159,586	204,246
High-Bleed Pneumatic Controllers	55,846	49,707	32,939	27,615
Intermittent-Bleed Pneumatic Controllers	304,000	360,613	515,449	553,252

Reporters provide calculated emissions from each pneumatic controller bleed type category using counts of devices in the category, bleed type-specific population emission factors provided in the rule, and estimated operating time of devices in the category (default is 8,760 hours per year). As discussed below, the EPA reviewed these data and has developed revised bleed type-specific EFs used in the 2016 GHGI.

Subpart W Data for Major Equipment

Onshore production facilities have two options for calculating emissions from major equipment leaks. The first option (“Methodology 1,” per 98.233(r)(2)(i), 76 FR 80554, Dec. 23, 2011) is based on estimated component counts (utilizing a table provided in the rule of typical component counts per major equipment) and includes reporting of major equipment counts for facilities using this methodology. The second option “Methodology 2,” per 98.233(r)(2)(ii), 76 FR 80554, Dec. 23, 2011) uses actual component counts to calculate equipment leak emissions and does not include reporting of major equipment counts.

Major equipment counts for RY2011 through RY2014 are therefore available from those onshore production facilities that calculated equipment leak emissions using Methodology 1, which includes 83% of reporting facilities for RY2011, 85% for RY2012, 93% for RY2013, and 98% for RY2014. For wellheads, the subpart W data do not distinguish primary production type (i.e., natural gas production wells versus crude oil production wells). These reported major equipment counts are shown in Table 2 below.

**Table 2. Reported Methodology 1 Equipment Leak Major Equipment Counts for RY2011-2014**

<b>Number of Reporting Facilities</b>	<b>RY2011</b>	<b>RY2012</b>	<b>RY2013</b>	<b>RY2014</b>
Number of Onshore Production Facilities Reporting Under Subpart W	458	504	507	564
Number of Onshore Production Facilities Reporting Equipment Leak Major Equipment Counts	381	429	469	552
<b>Reported Number of Major Equipment, By Equipment Type:</b>				
Natural Gas and Petroleum Wellheads	375,445	406,262	425,125	499,023
Natural Gas and Petroleum Separators	204,990	230,109	243,531	269,391
Natural Gas and Petroleum Chemical Injection Pumps <sup>a</sup>	64,490	77,538	77,355	79,881
Natural Gas Compressors	22,232	20,986	21,318	23,740
Natural Gas Dehydrators	6,758	9,545	7,974	8,380

Petroleum Headers	32,491	29,647	32,559	44,880
Petroleum Heater-treaters	25,057	22,721	26,350	34,902
Natural Gas In-Line Heaters	51,459	56,033	49,319	48,460
Natural Gas Meters/Piping	242,074	238,174	222,802	256,340

a – As stated above, CIP data are presented within the major equipment leaks discussion for simplicity. In the GHGI, emissions from CIPs are categorized as vented emissions whereas equipment leaks are fugitive emissions.

Reporters provide calculated emissions from CIPs using counts of natural gas driven pneumatic pumps, population emission factors provided in the rule, and average estimated operating time of such pumps (default is 8,760 hours per year). As discussed below, the EPA reviewed these data and has developed revised CIP EFs used in the 2016 GHGI.

**Alignment between GHGI and Subpart W Activity Data**

Appendix A documents GHGI production segment emission sources in natural gas systems and petroleum systems, respectively, aligned with data collected under GHGRP subpart W for equipment leak and natural gas pneumatic controller emissions. The description of “GHGI Activity Basis” in the Appendix A table indicates whether the activity data element is obtained directly from a data source for each year in the time series (indicated by “direct”) or some other methodology involving use of an activity data driver. In the current GHGI, all of the emission sources in Appendix A are driven from data elements that are available for each GHGI year: counts of wells by production type, and total oil and gas production.

**Revisions to Incorporate Subpart W Data into the 2016 GHGI**

As discussed in the introduction to this memorandum, subpart W provides substantial new data on oil and gas GHG-emitting activities in the U.S., but does not represent total national-level emissions due to the reporting threshold. The EPA continues to evaluate both the coverage and the representativeness of the GHGRP data for use in the GHGI. This section the approach implemented in the 2016 GHGI for scaling subpart W activity data to a national level for use in the GHGI, as well as the approaches used for revising natural gas and petroleum systems previous GHGI methodology to stratify pneumatic controller emission estimates by bleed type.

Table 3 below summarizes major equipment and pneumatic controller emission sources in the current GHGI. For natural gas systems, relevant subpart W data elements include counts of heaters, dehydrators, meters/piping, and compressors. For petroleum systems, relevant subpart W data elements include counts of heater-treaters and headers. Equipment that applies to both natural gas and petroleum production segments (according to the current GHGI structure) and for which subpart W reported activity could be allocated between production types includes counts of pneumatic controllers, wellheads, separators, and CIPs.

**Table 3. Summary of Activity Data Alignment between GHGI and Subpart W**

Emission Source	GHGI		Subpart W Potential Allocation		
	Natural Gas	Petroleum	Allocated to NG	Allocated to Petroleum	Allocated between Prod. Types
Pneumatic Controllers	•	•			•
Wellheads	•	•			•
Separators	•	•			•
Chemical Injection Pumps	•	•			•
Heaters	•		•		

Emission Source	GHGI		Subpart W Potential Allocation		
	Natural Gas	Petroleum	Allocated to NG	Allocated to Petroleum	Allocated between Prod. Types
Dehydrators	•		•		
Meters/Piping	•		•		
Compressors	•		•		
Heater-treaters		•		•	
Headers		•		•	

Table 4 below compares reported activity data under subpart W to national activity estimates in the current GHGI for years 2011 through 2013.

**Table 4. Comparison between Production Segment GHGI and Subpart W Activity Data**

Equipment	2011		2012		2013		2014
	GHGI	Subpart W	GHGI	Subpart W	GHGI	Subpart W	Subpart W
Pneumatic Controllers (NG and Petro)	894,968	574,057	909,777	628,890	911,474	707,974	785,113
Wellheads (NG and Petro)	1,296,534	375,445	1,320,426	406,262	1,315,196	425,125	499,023
Separators (NG and Petro)	390,503	204,990	394,136	230,109	388,222	243,531	269,391
CIPs (NG and Petro)	66,623	64,490	67,256	77,538	66,878	77,355	79,881
Heaters (NG)	110,423	51,459	109,428	56,033	107,735	49,319	48,460
Dehydrators (NG)	65,124	6,758	64,753	9,545	62,919	7,974	8,380
Meters/piping (NG)	397,862	242,074	395,686	238,174	390,586	222,802	256,340
Compressors (NG)	36,368	22,232	36,052	20,986	35,354	21,318	23,740
Heater-treaters (Petro)	78,281	25,057	81,941	22,721	84,262	26,350	34,902
Headers (Petro)	88,708	32,491	91,548	29,647	92,395	32,559	44,880

The EPA first considered a simplistic approach to scaling subpart W data to estimate national activity. The simplified approach would not take into account how dominant production type (natural gas versus petroleum) may impact major equipment counts per well, or the degree to which major equipment counts per well reported under subpart W are representative of activity for facilities that do not report under subpart W. For year 2013, subpart W data cover 32% of active wellheads (total producing natural gas and petroleum wells) nationally. In its analysis for this memo, the EPA developed activity estimates using an assumption that the subpart W data set also represents 32% of other national equipment counts (in other words, that the ratio of each type of equipment-per-wellhead is the same for nonreporting wells as it is for reporting wells) in the onshore production segment.

The approach that the EPA implemented in the 2016 GHGI builds on the simplistic approach to allocate subpart W reported counts of pneumatic controllers, wellheads, and separators to either the natural gas or petroleum systems GHGI source categories. Each facility that reports under subpart W for onshore production reports certain data elements at the sub-basin level, which is defined as operations within a single geographic county of a common production classification. The production classifications used in subpart W are identified in Table 5 below. The EPA analyzed the sub-basin data for each facility in order to estimate the fraction of the facility’s activity that is attributable to natural gas versus petroleum. For



example, if a facility reported activities in 10 total sub-basins, 4 of which are natural gas producing and 6 of which are oil producing (based on the second column in Table 5), then the EPA assigns 40% of the reported equipment to natural gas activities and 60% of equipment to petroleum activities.

**Table 5. Subpart W Sub-basin Production Classification and GHGI Source Category Assignment**

Subpart W Production Classification	GHGI Source Category
Shale gas	Natural gas
High permeability gas	Natural gas
Coal seam	Natural gas
Oil	Petroleum
Tight reservoir rock <sup>a</sup>	Natural gas or Petroleum, dependent on particular county <sup>a</sup>

a – Tight reservoir rock may be a gas or oil formation. The EPA’s National Emissions Inventory program developed a crosswalk using 2011 production data from DrillingInfo’s DI Desktop® to classify each individual county with tight reservoir rock as primarily gas-producing or oil-producing.

The EPA then analyzed counts of each type of major equipment per wellhead at each facility by production type. The EPA calculated AFs RY2014 only (since the data for previous RYs were back-reported). To calculate average AFs for each data set, EPA weighted facility-level reported activity data by facility well count. Calculated AFs are shown in Table 6 below.

The EPA’s estimates of major equipment counts by this approach are presented in Table 7 and **Error! Reference source not found.** below.

**Table 6. AF Calculation from Subpart W RY 2014 Data**

Source Category & Major Equipment	AF
NG: Pneumatic Controllers/Well	1.83
NG: Separators/Well	0.67
NG: Chemical Injection Pumps/Well	0.18
NG: Compressors/Well	0.11
NG: Dehydrators/Well	0.04
NG: Heaters/Well	0.22
NG: Meters/piping per well	1.15
Petro: Pneumatic Controllers/Well	1.35
Petro: Separators/Well	0.43
Petro: Chemical Injection Pumps/Well	0.14
Petro: Headers/Well	0.16
Petro: Heater-treaters/Well	0.13

**Table 7. Subpart W Production Segment Major Equipment Counts Scaled to National Activity Representation for Year 2013**

Equipment	GHGI	Subpart W Reported	Subpart W Scaled	Change from GHGI Estimate
Pneumatic Controllers	911,474	707,974	2,025,755	+122%
Pneumatic Controllers (NG)	459,304	371,607	831,901	+81%
Pneumatic Controllers (Petro)	452,170	336,367	1,193,854	+164%
Wellheads	1,315,196	425,125	n/a	n/a
Wellheads (NG)	451,296	208,991	n/a	n/a
Wellheads (Petro)	863,900	216,134	n/a	n/a
Separators	388,222	243,531	688,465	+77%
Separators (NG)	265,586	152,429	305,270	+15%
Separators (Petro)	122,636	91,102	383,195	+212%
Chemical Injection Pumps	66,878	77,355	208,500	+212%
Chemical Injection Pumps (NG)	35,812	40,501	82,948	+132%
Chemical Injection Pumps (Petro)	31,066	36,854	125,552	+304%
Heaters (NG)	107,735	49,319	98,680	-8%
Dehydrators (NG)	62,919	7,974	17,064	-73%
Meters/piping (NG)	390,586	222,802	521,991	+34%
Compressors (NG)	35,354	21,318	48,342	+37%
Heater-treaters (Petro)	84,262	26,350	111,939	+33%
Headers (Petro)	92,395	32,559	143,940	+56%

***Pneumatic Controller Stratification by Bleed Type and Emission Factor Revisions***

As shown in Appendix A, the previous GHGI methodology did not stratify pneumatic controller emissions by bleed type within natural gas production, and stratified by high versus low bleed within petroleum production. Using reported subpart W data allowed EPA to calculate pneumatic controller emissions using activity data and EFs specific to each bleed rate category in the GHGRP: high bleed, intermittent bleed, and low bleed. This revised approach improves current GHGI estimates by providing “net” rather than “potential” emissions for each year of the time series, and therefore the calculation no longer requires incorporation of Gas STAR voluntary reductions data.

Table 8 below presents estimates of pneumatic controller counts in natural gas and petroleum production segments, nationally scaled and stratified by production type according to the approach discussed above—then stratified by bleed type based on subpart W data, for year 2013. The far-right column labeled “Change” indicates the relative difference between “Subpart W Scaled” and “2015 GHGI” values.

**Table 8. Subpart W Production Segment Pneumatic Controller Counts Scaled to National Activity Representation for Year 2013**

Controller Type	2015 GHGI	Subpart W Reported, and Allocated to NG and Petro	Subpart W Scaled	Change <sup>a</sup>
<b>Low Bleed</b>	-	<b>159,586</b>	<b>481,849</b>	<b>n/a</b>
Natural Gas Production	-	69,483	144,443	n/a
Petroleum Production	293,910	90,103	337,406	+15%
<b>High Bleed</b>	-	<b>32,939</b>	<b>92,291</b>	<b>n/a</b>

Natural Gas Production	-	13,431	42,050	n/a
Petroleum Production	158,259	19,508	50,241	-68%
<b>Intermittent Bleed</b>	<b>-</b>	<b>515,449</b>	<b>1,451,615</b>	<b>n/a</b>
Natural Gas Production	-	209,508	645,408	n/a
Petroleum Production	-	305,941	806,207	n/a
<b>Natural Gas Prod. Total</b>	<b>459,304</b>	<b>292,422</b>	<b>831,901</b>	<b>+81%</b>
<b>Petroleum Prod. Total</b>	<b>452,170</b>	<b>415,552</b>	<b>1,193,854</b>	<b>+164%</b>
<b>Production Segment Total</b>	<b>911,474</b>	<b>707,974</b>	<b>2,025,755</b>	<b>+122%</b>

a – Relative difference between “Subpart W Scaled” and “2015 GHGI” values.

“-“ means not estimated.

“n/a” means not applicable.

The EPA developed EFs using subpart W reported data for pneumatic controllers stratified by bleed type to be used in conjunction with revised activity data. These EFs are presented in Table 9 below and compared to current GHGI EFs.

**Table 9. Production Segment Pneumatic Controller Methane EF Comparison (scfd/device)**

Data Source	Data Source Base Year	Low-Bleed	High-bleed	Intermittent Bleed	Population Average
Subpart W RYs 2011-2014 <sup>a</sup>	2011–2014	23	617	215	183
Subpart W RY 2014 <sup>a</sup>	2014	23	622	218	182
Current GHGI: Natural Gas Production <sup>b</sup>	1992	-	654	323	345 <sup>d</sup>
Current GHGI: Petroleum Production <sup>c</sup>	2002	52	330	-	149

a – Subpart W EFs are calculated as a weighted average based on the number of devices of the given type at each reporting facility.

b – The previous GHGI methodology used the population EF from the 1996 GRI/EPA report. This population EF represents an observed mix of 65% intermittent bleed and 35% continuous bleed natural gas-driven pneumatic controllers; the bleed type-specific EFs from the GRI/EPA report (which are not directly used in the current GHGI) are shown for comparison to other data sources. The continuous bleed EF from the GRI/EPA report is most appropriately compared to the high-bleed subcategorization for purposes of this analysis (versus low-bleed continuous).

c – The previous GHGI methodology used high bleed and low bleed EFs developed in 2002 in conjunction with an assumed mix of 65% low bleed and 35% high bleed natural gas-driven pneumatic controllers. The petroleum systems production segment average EF (which is not directly used in the current GHGI) is shown for comparison to other data sources.

d – Potential factor. In the previous GHGI methodology, Gas STAR reductions are subtracted from potential emissions to reflect net emissions from the actual mix of controllers in place. This is further discussed below under “Impact on National Emission Estimates.”

### ***Pneumatic Pump Emission Factor Revision***

The EPA developed an EF using subpart W reported data for pneumatic pumps to be used in conjunction with revised activity data. The revised CH<sub>4</sub> EF is 216 scfd/pump, compared to the previous EF of 248 scfd/pump.

### **Impact on National Emission Estimates**

Table 12 below presents activity and emissions estimates from the most recent previous GHGI (2015 GHGI) compared to the approach implemented in the 2016 GHGI using subpart W data.

The AFs derived from subpart W data result in generally higher equipment counts per well (for example, approximately twice as high as the 2015 GHGI for separators and meters), though dehydrator counts per well are less than calculated in the 2015 GHGI. Subpart W reporting does not cover centralized production facilities which may lead to underrepresentation of dehydrators population; however, revisions implemented to gathering and boosting sources in the 2016 GHGI (see companion memo titled “GHGI of U.S. Greenhouse Gas Emissions and Sinks 1990-2014: Revisions to Natural Gas Gathering and Boosting Emissions” (April 2016)) would help mitigate this discrepancy because emissions from dehydrators at centralized gathering locations would be included within the gathering stations EF. The revision using subpart W activity and emissions data to update GHGI pneumatic controller estimates resulted in significant increases to current emissions estimates. The revision using subpart W activity and emissions data to update CIP estimates resulted in approximately doubling the previous estimates.

The 2015 and previous GHGIs calculated potential emissions for pneumatic controllers and major equipment fugitives (column 2 in Table 12), then subtracts Gas STAR reductions (column 3) to obtain net emission estimates (column 4). Gas STAR reductions for pneumatic controllers were applied to the pneumatic controller categories, but the previous GHGI methodology did not assign Gas STAR reductions specifically to major equipment fugitive sources. The revised 2016 GHGI approach relies on subpart W data which reflect net emissions, and therefore it is no longer be appropriate to subtract Gas STAR reductions for these source estimates.

The activity data from the 2016 GHGI approach shown in Table 12 below are consistent with values shown in Table 7 above. The “revised net” emissions shown for use bleed rate-specific activity stratification from Table 8 (pneumatics stratified by bleed type) and associated EFs from Table 9; this approach is comparable to the 2015 GHGI’s approach of calculating potential emissions then subtracting Gas STAR reductions to account for increased adoption of lower bleed rate controllers in 2013 compared to the 1992 base year. For major equipment fugitives, the “revised net” emissions in Table 12 use GHGI EFs unchanged.

### **Time Series Considerations**

Subpart W annual reporting data are available beginning in year 2011. The EPA revised the GHGI time series (1990–2014) to create consistency between earlier years’ estimates that generally rely on studies conducted in the 1990s, and more recent years’ estimates that rely on subpart W data.

### ***Activity Data***

For natural gas systems major equipment and natural gas-driven pneumatic controller counts in each year after the current GHGI base year (1992) and before the first year of subpart W data (2011), the EPA applied an interpolation approach that reflects dynamics of well development activity. The inherent assumption is that equipment counts in each such year are directly dependent on active well counts in the given year. For each year between the base year and 2011, the EPA used the percent of “ $\Delta$  active wells” as the assumed percent of “ $\Delta$  equipment”, where:

- $\Delta$  active wells = difference in count of active wells in 2011 compared to base year (all years are directly calculated from DrillingInfo data); and
- $\Delta$  equipment = difference in count of each type of major equipment in 2011 compared to base year (counts in base year are taken from existing GHGI, and counts in 2011 are developed using AFs developed from subpart W data).

For petroleum systems, major equipment and natural gas-driven pneumatic controller counts derived from subpart W data for recent time series years have increased compared to base year estimates (1993 for major equipment and 1995 for pneumatic controllers) whereas the count of active wells and oil production have decreased over the same time frame. This might reflect the evolution of unconventional production and decrease in conventional oil production over time, and/or might reflect high uncertainties in the early 1990s data. Therefore, an interpolation approach that uses an independent parameter as a driver (e.g., active well count) such as that implemented for natural gas systems cannot be applied. The EPA therefore used simple linear interpolation to develop activity data for these sources between the base year and 2011.

For natural gas-driven pneumatic controllers, the EPA developed a bleed rate categorization for each time series year. The previous GHGI natural gas production segment methodology assumed the controller population comprises 35% high bleed and 65% intermittent bleed controllers in year 1992, and this stratification was carried forward to represent potential emissions in all years. In the 2016 GHGI, the EPA linearly interpolated from these to the proportions observed in 2011 GHGRP, which represent net emissions in each year. The EPA retained the existing GHGI methodology for years 1990–1992. Similarly, the previous GHGI petroleum production segment methodology assumed the controller population comprises 35% high bleed and 65% low bleed controllers for all years. The activity data methodology for calculating total pneumatic controller count was based on consensus of an industry review panel for base year 1995. In the 2016 GHGI, the EPA linearly interpolated from the 1995 subpopulations to the proportions observed in 2011 GHGRP. The EPA retained the existing GHGI methodology for years 1990–1995.

To develop national activity estimates for major equipment and total pneumatic controller counts for year 2011 and beyond, the EPA applied AFs (count of each type of equipment and total natural gas-driven pneumatic controllers per well) developed using the approach discussed above. This approach could be refined in future GHGIs to use AFs developed from RY2014 data to calculate activity data in the GHGI for recent years, use an average of RY2011–2014 data, or use year-specific data from GHGRP for these years in the GHGI. As shown in Table 6 above, AFs do not significantly vary over this time period based on reported data. For the 2016 GHGI, the EPA used AFs from RY2014 data, but as future years of subpart W data become available, the EPA will reconsider at what frequency it is appropriate to recalculate AFs. The EPA calculated pneumatic controller bleed rate stratification for each year of available data to allow the GHGI to reflect changes in these populations and resulting emissions—including changes resulting from NSPS OOOO implementation. See Table 10 below.

**Table 10. Subpart W Production Segment Pneumatic Controller Bleed Rate Stratification**

Controller Type	RY2011	RY2012	RY2013	RY2014
<b>Natural Gas Production</b>				
Low Bleed	33%	28%	17%	27%
High Bleed	10%	9%	5%	3%
Intermittent Bleed	57%	62%	78%	69%
<b>Petroleum Production</b>				
Low Bleed	44%	42%	28%	25%
High Bleed	9%	7%	4%	4%
Intermittent Bleed	47%	51%	68%	72%

**Emission Factors**

The revised pneumatic controller EFs were similarly developed from RY 2014 subpart W data and were applied for all years of the time series in the 2016 GHGI. As discussed above, the previous GHGI methodology relied on Gas STAR reductions to account for industry advancements in adoption of lower bleed rate controllers over time. The 2016 GHGI revision takes this dynamic into account through EFs stratified by bleed type and development of bleed type-specific activity data.

The revised CIP EF was also developed from RY 2014 subpart W data and was applied for years 2011 and beyond. For years 1990 through 1992, the EPA retained existing estimates of the CIP EF. For intermediate years, the EPA linearly interpolated between the existing CIP EF and the revised CIP EF developed from subpart W data. The 2016 GHGI revision for this source aims to take into account shifts in practices over time.

**Revisions to Subpart W Effective RY2015**

Revisions to subpart W that became effective January 1, 2015 (79 FR 70352, Nov. 25, 2014) include additional data elements related to equipment leaks that onshore production facilities must begin reporting in RY2015. Onshore petroleum and natural gas production facilities must report the following separately by component type, service type, and geographic location (i.e., Eastern U.S. or Western U.S.) for both calculation methods (Methodology 1 and Methodology 2):

- total number of the emission source type at the facility (e.g., valves, connectors, PRVs, etc.) (note, this is already reported for facilities using Methodology 1 as of RY2014);
- average estimated time that the emission source type was operational in the calendar year; and
- calculation method used (i.e., Methodology 1 using major equipment counts or Methodology 2 using actual component counts).

Additionally, for each major equipment type, production type (i.e., natural gas or crude oil) and geographic location combination in Tables W-1B and W-1C of subpart W, facilities must report an indication of whether the facility contains the major equipment type and if the facility does contain the equipment type, the count of the major equipment type.

**Gas STAR Reductions Revisions**

As discussed above, the 2016 GHGI revision obviates the need to apply Gas STAR reductions data for certain production segment sources. Table 11 below presents production segment emissions by source in the 2015 GHGI. There are significant Gas STAR reductions in the production segment that are not classified as applicable to specific emission sources (“Other voluntary reductions” are 16 MMT CO<sub>2</sub>e CH<sub>4</sub> in year 2013). Some portion of the “other voluntary reductions” might apply to the emission sources for which the EPA is considering revising the activity data basis to reflect the subpart W definition of an onshore production facilities (excluding centralized production and gathering-only facilities). The EPA is continuing to investigate potential disaggregation of “other voluntary reductions.” For the 2016 GHGI, the EPA developed and applied a scaling factor to the “other voluntary reductions” to reduce this reported amount based upon the fraction of the overall production segment emissions that now rely on net emission factor approaches (e.g., hydraulically fractured gas well workovers and completions, liquids unloading, pneumatic controllers, and gathering facilities). The scaling factor for year 2013 used in the 2016 GHGI was 0.464, bringing “other voluntary reductions” to 7.6 MMT CO<sub>2</sub>e.

**Table 11. Year 2013 Natural Gas and Petroleum Production Segment CH<sub>4</sub> Emissions by Source in the Previous (2015) GHGI Inventory**

All Production Emission Sources	Potential Emissions (MMT CO <sub>2</sub> e)	Reduction (MMT CO <sub>2</sub> e)	Net Emissions (MMT CO <sub>2</sub> e)
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April 2016

Pneumatic Controllers (Vented)	40.8	22.6	18.2
Major Equipment (Fugitive)	12.0	-	12.0
Chemical Injection Pumps (Vented)	3.0	0.1	2.9
Other Vented	36.6	0.01 <sup>a</sup>	36.5
Other Fugitive	6.9	-	6.9
Engine, turbine exhaust	9.0	3.5 <sup>b</sup>	5.5
Offshore	8.4	-	8.4
Upsets	0.1	-	0.1
Other Voluntary Reductions	n/a	16.5	n/a
Regulatory Reductions	n/a	3.0 <sup>c</sup>	n/a
<b>Total</b>	<b>116.9</b>	<b>45.7</b>	<b>71.2</b>

a – Natural gas systems, compressor starts.

b – Natural gas systems, compressor gas engine exhaust.

c – Due to NESHAP regulations addressing condensate storage tanks and dehydrators, in effect for year 1999 forward.

**Table 12. Year 2013 Production Segment CH<sub>4</sub> Emissions from Pneumatic Controllers and Equipment Leaks in the 2015 and 2016 GHGI**

<b>Emission Source (Production Type)</b>	<b>2015 GHGI Potential Estimate (MMT CO<sub>2</sub>e)</b>	<b>2015 GHGI Reduction Estimate (MMT CO<sub>2</sub>e)</b>	<b>2015 GHGI Net Estimate (MMT CO<sub>2</sub>e)</b>	<b>2015 GHGI Activity</b>	<b>2016 GHGI Activity</b>	<b>2016 GHGI Revised Net Estimate (MMT CO<sub>2</sub>e)</b>
Pneumatic Controllers (NG)	29.0	15.5	13.5	459,304	831,901	31.5
Pneumatic Controllers (Petro)	11.9	7.1	4.7	452,170	1,193,854	37.8
Wellheads (NG)	1.3	-	1.3	451,296	454,491	1.3
Wellheads (Petro)	1.5	-	1.5	863,900	884,652	1.5
Separators (NG)	2.6	-	2.6	265,586	305,270	3.0
Separators (Petro)	0.3	-	0.3	122,636	383,195	0.8
Chemical Injection Pumps (NG)	1.6	-	1.6	35,812	82,948	3.2
Chemical Injection Pumps (Petro)	1.4	-	1.4	31,066	125,552	4.8
Heaters (NG)	0.8	-	0.8	107,735	98,680	0.6
Dehydrators (NG)	0.8	-	0.8	62,919	17,064	0.2
Meters/piping (NG)	2.6	-	2.6	390,586	521,991	2.7
Wellpad Compressors (NG)	1.7	-	1.7	35,354	48,342	2.4
Heater-treaters (Petro)	0.3	-	0.3	84,262	111,939	0.4
Headers (Petro)	0.1	-	0.1	92,395	143,940	0.2



### **HF Oil Well Completions and Workovers**

In addition to the updates using GHGRP data discussed above, the EPA also updated its estimates for oil well completions in the 2016 inventory, after receiving stakeholder feedback supporting updates to include this source.

The Inventory previously did not distinguish between oil well completions and workovers with hydraulic fracturing (HF) and oil well completions and workovers without hydraulic fracturing. The previous Inventory emission factors for all oil well completions and workovers were developed using an assumption that all oil well workovers and completions are flared. In the 2016 GHGI, an estimate for the subcategories of oil well completions with hydraulic fracturing with and without controls was included. This estimate was developed using an uncontrolled emission factor developed as part of the analysis supporting the OOOOa NSPS proposal (7.5 tons CH<sub>4</sub>/completion)<sup>3</sup>, and a controlled emission factor that assumes 95% control efficiency (0.4 tons CH<sub>4</sub>/completion). For the OOOOa proposal analysis, EPA extracted gas production data from oil well records in DrillingInfo, and developed average daily gas production rates (over the first month of production) for wells that were determined to have been completed with hydraulic fracturing in 2012. The average value for these wells was 255.47 Mcf/day. This was then multiplied by a 3 day completion duration, and a methane content value of 47% to develop the uncontrolled factor. Total annual national HF oil well completion data were developed from DrillingInfo data (DrillingInfo 2015). The GHG inventory uses the NSPS OOOOa proposal value for the percentage of oil well completions that are controlled due to state regulations, 7%, and applies that value beginning in 2008. It is assumed in the Inventory estimate that prior to 2008, all oil well completions with HF are uncontrolled. The inventory continues to use one estimate for workover emissions for completions of all types (i.e. both hydraulically fractured and non-hydraulically fractured). This recalculation results in a 3 MMT CO<sub>2</sub>e increase from the previous 2013 estimate for completions and workovers, and an average increase of 1 MMT CO<sub>2</sub>e over the 1990-2013 time series.

**Table 13. Methane Emissions from Oil Well Completions and Workovers, MMT CO<sub>2</sub>e**

Activity	1990	2005	2010	2013	2014
Non-HF Completions	+	+	+	+	+
Workovers (HF and non-HF)	+	+	+	+	+
HF Completions	0.6	0.9	1.7	3.0	3.0
<b>TOTAL Completions &amp; Workovers</b>	<b>0.6</b>	<b>0.9</b>	<b>1.7</b>	<b>3.0</b>	<b>3.0</b>
<i>Previous TOTAL Completions &amp; Workovers</i>	+	+	+	+	N/A

### **Requests for Stakeholder Feedback**

The EPA initially sought feedback on the following questions in the version of this memo released February 2016. The EPA discusses feedback received thus far through the 2016 GHGI public review process, and further planned improvements to 2016 GHGI methodology, in Chapter 3.5 and Chapter 3.6 of the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014* (April 2016). The EPA welcomes additional seek stakeholder feedback on the following questions.

<sup>3</sup> The value presented in the NSPS proposal, 9.72 short tons was the average emissions calculated for the subset of HF oil well completions with GOR >300 scf/bbl. The GHG Inventory averaged emissions from the same base data set, without the GOR >300 scf/bbl exclusion, so that the emission factor can be applied to all HF oil well completions in the U.S., including those with lower GOR.

**General use of Subpart W data**

- 1) The EPA seeks feedback on how to take into account the reporting threshold when using subpart W data, and the appropriateness of using subpart W-based AFs for the national population of major equipment and pneumatic controllers.
  - a. Are other data sources available that would help the EPA determine characteristics of the non-reporting population?
  - b. Are other approaches available for scaling up this data for use in the GHGI?
- 2) The EPA seeks feedback on other data sources (e.g., Allen et al. 2013 and 2014, the Prasiino Group 2013) that could be considered for the development of emission factors for equipment leaks and/or pneumatic controllers.
  - a. Allen et al. 2014 study did not differentiate between controller types. Is it possible to disaggregate the Allen emissions data in a way that would allow the EPA to calculate emissions for various control types?
- 3) The EPA seeks feedback on how to take into account reported emissions data under subpart W for major equipment fugitives in the GHGI. For reporters using equipment leak methodology 1 (98% of reporters in RY2014), emissions data are reported at the facility level based on use of component-level EFs specified in the rule, not at the equipment level. The EPA seeks feedback on how to use such data in developing equipment-specific fugitive EFs that could be applied in the natural gas and petroleum systems segments of the GHGI. The subpart W specified EF for reporting vented emissions from CIPs uses the same basis (GRI/EPA) as the current GHGI. The EPA is considering adjusting the GHGI emission factor for CIP using subpart W reported data, which takes into account operating hours.

**Calculations using Subpart W data**

- 4) The EPA seeks feedback on the methodology for allocating subpart W data between the natural gas and petroleum production segments. Are other approaches available for allocating subpart W equipment and pneumatic controller counts between production types? For example, one limitation in the current methodology is that for facilities covering both oil and gas sub-basins and having separators, the count of separators-per-gas well is equivalent to separators-per-oil well.
- 5) The EPA seeks feedback on whether and how to use subpart W data to reflect geographic variation of activity factors and/or emission factors. In the current GHGI, emissions from natural gas systems are calculated separately for six NEMS regions, and emissions from petroleum systems do not have geographic variation. The update under consideration is applied at the national level. The EPA plans to explore options to reflect geographic variation in future GHGIs.
- 6) The EPA seeks stakeholder feedback on year-to-year trends in reported subpart W data, and whether it is more appropriate to recalculate activity factors and/or emission factors separately for each RY, or to use another approach (e.g., combine data from multiple early RYs such as the current methodology for hydraulically fractured gas well completions which uses combined RY2011 through RY2013 data to calculate the emission factor).
- 7) The EPA seeks feedback on how to address time series consistency in using AFs derived from subpart W data—i.e., calculating activity in years between the early 1990s base year and recent

subpart W-era years. As discussed under “Time Series Considerations” the EPA used the count of active production wells as an activity data driver for major equipment and total pneumatic controller counts in natural gas systems, and simple linear interpolation for petroleum systems. The EPA could consider taking into account other factors (e.g., year to year production changes). The EPA seeks stakeholder feedback on other factors that impact equipment counts and potential methods to incorporate these factors into the GHGI calculations.

***Other Emission Sources***

- 8) The EPA discusses revisions to the GHGI production segment structure in a companion memo titled “GHGI of U.S. Greenhouse Gas Emissions and Sinks 1990-2014: Revisions under Consideration for Natural Gas Gathering and Boosting Emissions” (April 2016). Revisions included updating some of the production emission calculation methodologies based on Marchese et al. (2015) measurement data for centralized production and gathering-only facilities. With such revisions, storage tank emission estimates may overlap with the Marchese et al. facility-level EF based on current methodology. The EPA seeks feedback on how to improve GHGI activity, emissions, and controls data for these sources located at non-gathering production sites based on available subpart W data.
- 9) The EPA seeks stakeholder feedback on production segment sources not discussed in this memorandum.
  - a. For sources where GHGRP data are currently available, the EPA seeks stakeholder feedback on how GHGRP data may be used to revise current GHGI methodologies. For example, the EPA seeks stakeholder feedback on whether similar methods to those discussed in this memorandum could be used to scale up subpart W activity data for sources such as liquids unloading and hydraulically fractured (HF) gas well completions
  - b. For sources where GHGRP data are not currently available, the EPA seeks stakeholder feedback on data sources available for updates to those methodologies. The EPA specifically seeks stakeholder feedback on any currently available or upcoming activity and/or emissions data on abandoned wells.
- 10) Recent production segment studies have detected the presence of superemitters in the production segment. The EPA seeks stakeholder feedback on how to incorporate information on superemitters into estimates for the production segment. The EPA also seeks stakeholder feedback on which GHGI sources are more likely than others to act as superemitters and whether and how to apply a superemitter factor or other methodology to those sources.

## APPENDIX A

Table A-1. Alignment of GHGI and Subpart W Activity Data Elements

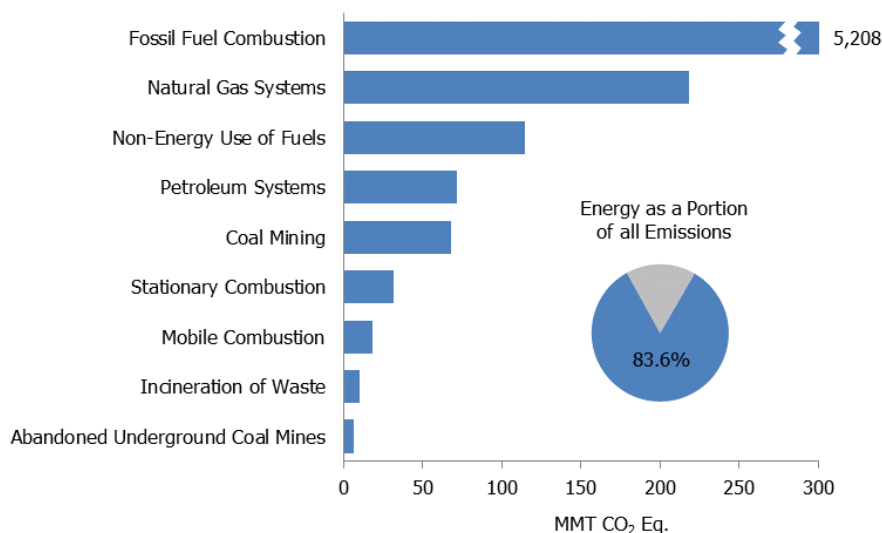
GHGI Emission Source	GHGI Activity	GHGI Activity Basis	Corresponding Subpart W Data Element
<b>Natural Gas Systems</b>			
<b>Natural Gas-driven Pneumatic Controllers</b>			
Pneumatic Controllers	Controllers	Calculated using 1992 data on pneumatic controller counts per gas well	Annual counts of low-bleed, high-bleed, and intermittent bleed NG pneumatic controllers from reporting facilities
<b>Equipment Leaks/Fugitives</b>			
Associated Gas Wells	Wells	direct	Annual count of wellheads from reporting facilities using EL Methodology 1
Non-associated Gas Wells (less fractured wells)	Wells	direct	
Gas Wells with Hydraulic Fracturing	Wells	direct	
Heaters	Heaters	Calculated using 1992 data on heaters per non-associated gas well	Annual count of in-line heaters from reporting facilities using EL Methodology 1
Separators	Separators	Calculated using 1992 data on separators per non-associated gas well	Annual count of separators from reporting facilities using EL Methodology 1
Dehydrators	Dehydrators	Calculated using 1992 data on dehydrators per non-associated gas well	Annual count of dehydrators from reporting facilities using EL Methodology 1
Meters/Piping	Meters	Calculated using 1992 data on meters per all gas wells	Annual count of meters/piping from reporting facilities using EL Methodology 1
<b>Petroleum Systems</b>			
<b>Natural Gas-driven Pneumatic Controllers</b>			
Pneumatic Controllers, High Bleed	controller	Calculated based on total number of separators + heater/treaters and assumed percent of population that is high bleed versus low bleed	Annual count of high-bleed NG pneumatic controllers
Pneumatic Controllers, Low Bleed	controller		Annual count of low-bleed NG pneumatic controllers
Pneumatic Controllers, Intermittent Bleed	N/A		N/A
<b>Equipment Leaks/Fugitives</b>			
Oil Wellheads (heavy crude)	Oil well	Calculated based on total producing oil wells (less 80% of stripper wells) and ratio of heavy crude wells to total crude wells	Annual count of wellheads from facilities using EL Methodology 1
Oil Wellheads (light crude)	Oil well		
Separators (heavy crude)	separator	Calculated using 1993 base year factor; scaled using annual domestic production and total producing oil wells	Annual count of separators from facilities using EL Methodology 1
Separators (light crude)	separator		
Heater-Treaters (light crude)	heater	Calculated using 1993 base year factor; scaled using annual domestic production and total producing oil wells	Annual count of heater/treaters from facilities using EL Methodology 1
Headers (heavy crude)	header	Calculated based on total producing oil wells and ratio of heavy crude production wells to total crude production wells	Annual count of headers from facilities using EL Methodology 1
Headers (light crude)	header		

### 3. Energy

Energy-related activities were the primary sources of U.S. anthropogenic greenhouse gas emissions, accounting for 83.6 percent of total greenhouse gas emissions on a carbon dioxide (CO<sub>2</sub>) equivalent basis in 2014.<sup>1</sup> This included 97, 45, and 10 percent of the nation's CO<sub>2</sub>, methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) emissions, respectively. Energy-related CO<sub>2</sub> emissions alone constituted 78.3 percent of national emissions from all sources on a CO<sub>2</sub> equivalent basis, while the non-CO<sub>2</sub> emissions from energy-related activities represented a much smaller portion of total national emissions (5.4 percent collectively).

Emissions from fossil fuel combustion comprise the vast majority of energy-related emissions, with CO<sub>2</sub> being the primary gas emitted (see Figure 3-1). Globally, approximately 32,190 million metric tons (MMT) of CO<sub>2</sub> were added to the atmosphere through the combustion of fossil fuels in 2013, of which the United States accounted for approximately 16 percent.<sup>2</sup> Due to their relative importance, fossil fuel combustion-related CO<sub>2</sub> emissions are considered separately, and in more detail than other energy-related emissions (see Figure 3-2). Fossil fuel combustion also emits CH<sub>4</sub> and N<sub>2</sub>O. Stationary combustion of fossil fuels was the second-largest source of N<sub>2</sub>O emissions in the United States and mobile fossil fuel combustion was the fourth-largest source.

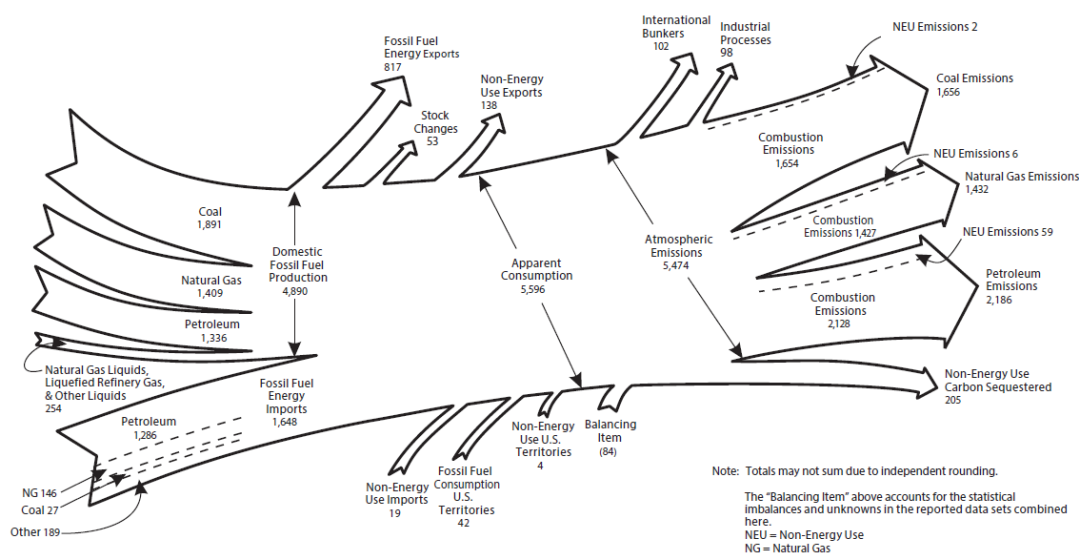
**Figure 3-1: 2014 Energy Chapter Greenhouse Gas Sources (MMT CO<sub>2</sub> Eq.)**



<sup>1</sup> Estimates are presented in units of million metric tons of carbon dioxide equivalent (MMT CO<sub>2</sub> Eq.), which weight each gas by its global warming potential, or GWP, value. See section on global warming potentials in the Executive Summary.

<sup>2</sup> Global CO<sub>2</sub> emissions from fossil fuel combustion were taken from International Energy Agency *CO<sub>2</sub> Emissions from Fossil Fuels Combustion – Highlights* <<https://www.iea.org/publications/freepublications/publication/CO2EmissionsFromFuelCombustionHighlights2015.pdf>> IEA (2015).

**Figure 3-2: 2014 U.S. Fossil Carbon Flows (MMT CO<sub>2</sub> Eq.)**



Energy-related activities other than fuel combustion, such as the production, transmission, storage, and distribution of fossil fuels, also emit greenhouse gases. These emissions consist primarily of fugitive CH<sub>4</sub> from natural gas systems, petroleum systems, and coal mining. Table 3-1 summarizes emissions from the Energy sector in units of MMT CO<sub>2</sub> Eq., while unweighted gas emissions in kilotons (kt) are provided in Table 3-2. Overall, emissions due to energy-related activities were 5,746.2 MMT CO<sub>2</sub> Eq. in 2014,<sup>3</sup> an increase of 7.9 percent since 1990.

**Table 3-1: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from Energy (MMT CO<sub>2</sub> Eq.)**

Gas/Source	1990	2005	2010	2011	2012	2013	2014
<b>CO<sub>2</sub></b>	<b>4,908.8</b>	<b>5,932.5</b>	<b>5,520.0</b>	<b>5,386.6</b>	<b>5,179.7</b>	<b>5,330.8</b>	<b>5,377.9</b>
Fossil Fuel Combustion	4,740.7	5,747.1	5,358.3	5,227.7	5,024.7	5,157.6	5,208.2
Electricity Generation	1,820.8	2,400.9	2,258.4	2,157.7	2,022.2	2,038.1	2,039.3
Transportation	1,493.8	1,887.0	1,728.3	1,707.6	1,696.8	1,713.0	1,737.6
Industrial	842.5	828.0	775.5	773.3	782.9	812.2	813.3
Residential	338.3	357.8	334.6	326.8	282.5	329.7	345.1
Commercial	217.4	223.5	220.1	220.7	196.7	221.0	231.9
U.S. Territories	27.9	49.9	41.4	41.5	43.6	43.5	41.0
Non-Energy Use of Fuels	118.1	138.9	114.1	108.5	105.6	121.7	114.3
Natural Gas Systems	37.7	30.1	32.4	35.7	35.2	38.5	42.4
Incineration of Waste	8.0	12.5	11.0	10.5	10.4	9.4	9.4
Petroleum Systems	3.6	3.9	4.2	4.2	3.9	3.7	3.6
Biomass-Wood <sup>a</sup>	215.2	206.9	192.5	195.2	194.9	211.6	217.7
International Bunker Fuels <sup>a</sup>	103.5	113.1	117.0	111.7	105.8	99.8	103.2
Biomass-Ethanol <sup>a</sup>	4.2	22.9	72.6	72.9	72.8	74.7	76.1
<b>CH<sub>4</sub></b>	<b>363.3</b>	<b>307.0</b>	<b>318.5</b>	<b>313.3</b>	<b>312.5</b>	<b>321.2</b>	<b>328.3</b>
Natural Gas Systems	206.8	177.3	166.2	170.1	172.6	175.6	176.1
Petroleum Systems	38.7	48.8	54.1	56.3	58.4	64.7	68.1
Coal Mining	96.5	64.1	82.3	71.2	66.5	64.6	67.6
Stationary Combustion	8.5	7.4	7.1	7.1	6.6	8.0	8.1
Abandoned Underground Coal							
Mines	7.2	6.6	6.6	6.4	6.2	6.2	6.3
Mobile Combustion	5.6	2.7	2.3	2.2	2.2	2.1	2.0
Incineration of Waste	+	+	+	+	+	+	+
International Bunker Fuels <sup>a</sup>	0.2	0.1	0.1	0.1	0.1	0.1	0.1

<sup>3</sup> Following the revised reporting requirements under the UNFCCC, this Inventory report presents CO<sub>2</sub> equivalent values based on the IPCC Fourth Assessment Report (AR4) GWP values. See the Introduction chapter for more information.

<b>N<sub>2</sub>O</b>	<b>53.6</b>	<b>55.0</b>	<b>46.1</b>	<b>44.0</b>	<b>41.7</b>	<b>41.4</b>	<b>40.0</b>
Stationary Combustion	11.9	20.2	22.2	21.3	21.4	22.9	23.4
Mobile Combustion	41.2	34.4	23.6	22.4	20.0	18.2	16.3
Incineration of Waste	0.5	0.4	0.3	0.3	0.3	0.3	0.3
<i>International Bunker Fuels<sup>a</sup></i>	<i>0.9</i>	<i>1.0</i>	<i>1.0</i>	<i>1.0</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>
<b>Total</b>	<b>5,324.9</b>	<b>6,294.5</b>	<b>5,884.6</b>	<b>5,744.0</b>	<b>5,533.9</b>	<b>5,693.5</b>	<b>5,746.2</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

<sup>a</sup> These values are presented for informational purposes only, in line with IPCC methodological guidance and UNFCCC reporting obligations, and are not included in the specific energy sector contribution to the totals, and are already accounted for elsewhere.

Note: Totals may not sum due to independent rounding.

**Table 3-2: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from Energy (kt)**

Gas/Source	1990	2005	2010	2011	2012	2013	2014
<b>CO<sub>2</sub></b>	<b>4,908,041</b>	<b>5,932,474</b>	<b>5,519,975</b>	<b>5,386,609</b>	<b>5,179,749</b>	<b>5,330,837</b>	<b>5,377,857</b>
Fossil Fuel Combustion	4,740,671	5,747,142	5,358,292	5,227,690	5,024,685	5,157,583	5,208,207
Non-Energy Use of Fuels	118,114	138,876	114,063	108,515	105,624	121,682	114,311
Natural Gas Systems	37,732	30,076	32,439	35,662	35,203	38,457	42,351
Incineration of Waste	7,972	12,454	11,026	10,550	10,362	9,421	9,421
Petroleum Systems	3,553	3,927	4,154	4,192	3,876	3,693	3,567
<i>Biomass – Wood<sup>a</sup></i>	<i>215,186</i>	<i>206,901</i>	<i>192,462</i>	<i>195,182</i>	<i>194,903</i>	<i>211,581</i>	<i>217,654</i>
<i>International Bunker Fuels<sup>a</sup></i>	<i>103,463</i>	<i>113,139</i>	<i>116,992</i>	<i>111,660</i>	<i>105,805</i>	<i>99,763</i>	<i>103,201</i>
<i>Biomass – Ethanol<sup>a</sup></i>	<i>4,227</i>	<i>22,943</i>	<i>72,647</i>	<i>72,881</i>	<i>72,827</i>	<i>74,743</i>	<i>76,075</i>
<b>CH<sub>4</sub></b>	<b>14,532</b>	<b>12,281</b>	<b>12,741</b>	<b>12,533</b>	<b>12,498</b>	<b>12,848</b>	<b>13,132</b>
Natural Gas Systems	8,270	7,093	6,647	6,803	6,906	7,023	7,045
Petroleum Systems	1,550	1,953	2,163	2,251	2,335	2,588	2,726
Coal Mining	3,860	2,565	3,293	2,849	2,658	2,584	2,703
Stationary Combustion	339	296	283	283	265	320	324
Abandoned Underground							
Coal Mines	288	264	263	257	249	249	253
Mobile Combustion	226	110	91	90	86	84	82
Incineration of Waste	+	+	+	+	+	+	+
<i>International Bunker Fuels<sup>a</sup></i>	<i>7</i>	<i>5</i>	<i>6</i>	<i>5</i>	<i>4</i>	<i>3</i>	<i>3</i>
<b>N<sub>2</sub>O</b>	<b>180</b>	<b>185</b>	<b>155</b>	<b>148</b>	<b>140</b>	<b>139</b>	<b>134</b>
Stationary Combustion	40	68	74	71	72	77	79
Mobile Combustion	138	115	79	75	67	61	55
Incineration of Waste	2	1	1	1	1	1	1
<i>International Bunker Fuels<sup>a</sup></i>	<i>3</i>	<i>3</i>	<i>3</i>	<i>3</i>	<i>3</i>	<i>3</i>	<i>3</i>

+ Does not exceed 0.5 kt

<sup>a</sup> These values are presented for informational purposes only, in line with IPCC methodological guidance and UNFCCC reporting obligations, and are not included in the specific energy sector contribution to the totals, and are already accounted for elsewhere.

Note: Totals may not sum due to independent rounding.

### Box 3-1: Methodological Approach for Estimating and Reporting U.S. Emissions and Sinks

In following the United Nations Framework Convention on Climate Change (UNFCCC) requirement under Article 4.1 to develop and submit national greenhouse gas emission inventories, the emissions and sinks presented in this report and this chapter, are organized by source and sink categories and calculated using internationally-accepted methods provided by the Intergovernmental Panel on Climate Change (IPCC). Additionally, the calculated emissions and sinks in a given year for the United States are presented in a common manner in line with the UNFCCC reporting guidelines for the reporting of inventories under this international agreement. The use of consistent methods to calculate emissions and sinks by all nations providing their inventories to the UNFCCC ensures that these reports are comparable. In this regard, U.S. emissions and sinks reported in this inventory report are comparable to emissions and sinks reported by other countries. Emissions and sinks provided in this Inventory do not preclude alternative examinations, but rather, this Inventory presents emissions and sinks in a common format consistent with how countries are to report Inventories under the UNFCCC. The report itself, and this chapter, follows this standardized format, and provides an explanation of the IPCC methods used to calculate emissions and sinks, and the manner in which those calculations are conducted.

### Box 3-2: Energy Data from the Greenhouse Gas Reporting Program

On October 30, 2009, the U.S. Environmental Protection Agency (EPA) published a rule for the mandatory reporting of greenhouse gases from large greenhouse gas emissions sources in the United States. Implementation of 40 CFR Part 98 is referred to as the Greenhouse Gas Reporting Program (GHGRP). 40 CFR Part 98 applies to direct greenhouse gas emitters, fossil fuel suppliers, industrial gas suppliers, and facilities that inject CO<sub>2</sub> underground for sequestration or other reasons. Reporting is at the facility level, except for certain suppliers of fossil fuels and industrial greenhouse gases. 40 CFR part 98 requires reporting by 41 industrial categories. Data reporting by affected facilities included the reporting of emissions from fuel combustion at that affected facility. In general, the threshold for reporting is 25,000 metric tons or more of CO<sub>2</sub> Eq. per year.

The GHGRP dataset and the data presented in this Inventory report are complementary and, as indicated in the respective planned improvements sections for source categories in this chapter, EPA is analyzing how to use facility-level GHGRP data to improve the national estimates presented in this Inventory (see, also, Box 3-4). Most methodologies used in EPA's GHGRP are consistent with IPCC, though for EPA's GHGRP, facilities collect detailed information specific to their operations according to detailed measurement standards, which may differ with the more aggregated data collected for the Inventory to estimate total, national U.S. emissions. It should be noted that the definitions and provisions for reporting fuel types in EPA's GHGRP may differ from those used in the Inventory in meeting the UNFCCC reporting guidelines. In line with the UNFCCC reporting guidelines, the inventory report is a comprehensive accounting of all emissions from fuel types identified in the IPCC guidelines and provides a separate reporting of emissions from biomass. Further information on the reporting categorizations in EPA's GHGRP and specific data caveats associated with monitoring methods in EPA's GHGRP has been provided on the GHGRP website.

EPA presents the data collected by its GHGRP through a data publication tool that allows data to be viewed in several formats including maps, tables, charts and graphs for individual facilities or groups of facilities.

## 3.1 Fossil Fuel Combustion (IPCC Source Category 1A)

Emissions from the combustion of fossil fuels for energy include the gases CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Given that CO<sub>2</sub> is the primary gas emitted from fossil fuel combustion and represents the largest share of U.S. total emissions, CO<sub>2</sub> emissions from fossil fuel combustion are discussed at the beginning of this section. Following that is a discussion of emissions of all three gases from fossil fuel combustion presented by sectoral breakdowns. Methodologies for estimating CO<sub>2</sub> from fossil fuel combustion also differ from the estimation of CH<sub>4</sub> and N<sub>2</sub>O emissions from stationary combustion and mobile combustion. Thus, three separate descriptions of methodologies, uncertainties, recalculations, and planned improvements are provided at the end of this section. Total CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions from fossil fuel combustion are presented in Table 3-3 and Table 3-4.

**Table 3-3: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from Fossil Fuel Combustion (MMT CO<sub>2</sub> Eq.)**

Gas	1990	2005	2010	2011	2012	2013	2014
CO <sub>2</sub>	4,740.7	5,747.1	5,358.3	5,227.7	5,024.7	5,157.6	5,208.2
CH <sub>4</sub>	14.1	10.2	9.3	9.3	8.8	10.1	10.1
N <sub>2</sub> O	53.1	54.7	45.8	43.8	41.5	41.2	39.8
<b>Total</b>	<b>4,807.9</b>	<b>5,812.0</b>	<b>5,413.4</b>	<b>5,280.8</b>	<b>5,074.9</b>	<b>5,208.8</b>	<b>5,258.1</b>

Note: Totals may not sum due to independent rounding



**Table 3-4: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from Fossil Fuel Combustion (kt)**

Gas	1990	2005	2010	2011	2012	2013	2014
CO <sub>2</sub>	4,740,671	5,747,142	5,358,292	5,227,690	5,024,685	5,157,583	5,208,207
CH <sub>4</sub>	565	406	372	374	352	404	405
N <sub>2</sub> O	178	183	154	147	139	138	133

## CO<sub>2</sub> from Fossil Fuel Combustion

Carbon dioxide is the primary gas emitted from fossil fuel combustion and represents the largest share of U.S. total greenhouse gas emissions. CO<sub>2</sub> emissions from fossil fuel combustion are presented in Table 3-5. In 2014, CO<sub>2</sub> emissions from fossil fuel combustion increased by 1.0 percent relative to the previous year. The increase in CO<sub>2</sub> emissions from fossil fuel combustion was a result of multiple factors, including: (1) colder winter conditions in the first quarter of 2014 resulting in an increased demand for heating fuel in the residential and commercial sectors; (2) an increase in transportation emissions resulting from an increase in vehicle miles traveled (VMT) and fuel use across on-road transportation modes; and (3) an increase in industrial production across multiple sectors resulting in slight increases in industrial sector emissions.<sup>4</sup> In 2014, CO<sub>2</sub> emissions from fossil fuel combustion were 5,208.2 MMT CO<sub>2</sub> Eq., or 9.9 percent above emissions in 1990 (see Table 3-5).<sup>5</sup>

**Table 3-5: CO<sub>2</sub> Emissions from Fossil Fuel Combustion by Fuel Type and Sector (MMT CO<sub>2</sub> Eq.)**

Fuel/Sector	1990	2005	2010	2011	2012	2013	2014
<b>Coal</b>	<b>1,718.4</b>	<b>2,112.3</b>	<b>1,927.7</b>	<b>1,813.9</b>	<b>1,592.8</b>	<b>1,654.4</b>	<b>1,653.7</b>
Residential	3.0	0.8	NO	NO	NO	NO	NO
Commercial	12.0	9.3	6.6	5.8	4.1	3.9	4.5
Industrial	155.3	115.3	90.1	82.0	74.1	75.7	75.3
Transportation	NE	NE	NE	NE	NE	NE	NE
Electricity Generation	1,547.6	1,983.8	1,827.6	1,722.7	1,511.2	1,571.3	1,570.4
U.S. Territories	0.6	3.0	3.4	3.4	3.4	3.4	3.4
<b>Natural Gas</b>	<b>1,000.3</b>	<b>1,166.7</b>	<b>1,272.1</b>	<b>1,291.5</b>	<b>1,352.6</b>	<b>1,391.2</b>	<b>1,426.6</b>
Residential	238.0	262.2	258.6	254.7	224.8	266.2	277.6
Commercial	142.1	162.9	167.7	170.5	156.9	179.1	189.2
Industrial	408.9	388.5	407.2	417.3	434.8	451.9	466.0
Transportation	36.0	33.1	38.1	38.9	41.3	47.0	47.6
Electricity Generation	175.3	318.8	399.0	408.8	492.2	444.0	443.2
U.S. Territories	NO	1.3	1.5	1.4	2.6	3.0	3.0
<b>Petroleum</b>	<b>2,021.5</b>	<b>2,467.8</b>	<b>2,158.2</b>	<b>2,121.9</b>	<b>2,078.9</b>	<b>2,111.6</b>	<b>2,127.5</b>
Residential	97.4	94.9	76.0	72.2	57.7	63.4	67.5
Commercial	63.3	51.3	45.8	44.5	35.7	38.0	38.2
Industrial	278.3	324.2	278.2	274.0	274.1	284.6	271.9
Transportation	1,457.7	1,854.0	1,690.2	1,668.8	1,655.4	1,666.0	1,690.0
Electricity Generation	97.5	97.9	31.4	25.8	18.3	22.4	25.3
U.S. Territories	27.2	45.6	36.5	36.7	37.6	37.1	34.6
<b>Geothermal<sup>a</sup></b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>
<b>Total</b>	<b>4,740.7</b>	<b>5,747.1</b>	<b>5,358.3</b>	<b>5,227.7</b>	<b>5,024.7</b>	<b>5,157.6</b>	<b>5,208.2</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NE (Not estimated)

<sup>4</sup> Further details on industrial sector combustion emissions are provided by EPA's GHGRP <<http://ghgdata.epa.gov/ghgp/main.do>>.

<sup>5</sup> An additional discussion of fossil fuel emission trends is presented in the Trends in U.S. Greenhouse Gas Emissions Chapter.

NO (Not occurring)

<sup>a</sup> Although not technically a fossil fuel, geothermal energy-related CO<sub>2</sub> emissions are included for reporting purposes.

Note: Totals may not sum due to independent rounding.

Trends in CO<sub>2</sub> emissions from fossil fuel combustion are influenced by many long-term and short-term factors. On a year-to-year basis, the overall demand for fossil fuels in the United States and other countries generally fluctuates in response to changes in general economic conditions, energy prices, weather, and the availability of non-fossil alternatives. For example, in a year with increased consumption of goods and services, low fuel prices, severe summer and winter weather conditions, nuclear plant closures, and lower precipitation feeding hydroelectric dams, there would likely be proportionally greater fossil fuel consumption than a year with poor economic performance, high fuel prices, mild temperatures, and increased output from nuclear and hydroelectric plants.

Longer-term changes in energy consumption patterns, however, tend to be more a function of aggregate societal trends that affect the scale of consumption (e.g., population, number of cars, size of houses, and number of houses), the efficiency with which energy is used in equipment (e.g., cars, power plants, steel mills, and light bulbs), and social planning and consumer behavior (e.g., walking, bicycling, or telecommuting to work instead of driving).

Carbon dioxide emissions also depend on the source of energy and its carbon (C) intensity. The amount of C in fuels varies significantly by fuel type. For example, coal contains the highest amount of C per unit of useful energy. Petroleum has roughly 75 percent of the C per unit of energy as coal, and natural gas has only about 55 percent.<sup>6</sup> Table 3-6 shows annual changes in emissions during the last five years for coal, petroleum, and natural gas in selected sectors.

**Table 3-6: Annual Change in CO<sub>2</sub> Emissions and Total 2014 Emissions from Fossil Fuel Combustion for Selected Fuels and Sectors (MMT CO<sub>2</sub> Eq. and Percent)**

Sector	Fuel Type	2010 to 2011		2011 to 2012		2012 to 2013		2013 to 2014		Total 2014
Electricity Generation	Coal	-104.9	-5.7%	-211.5	-12.3%	60.1	4.0%	-0.9	-0.1%	1,570.4
Electricity Generation	Natural Gas	9.8	2.5%	83.5	20.4%	-48.3	-9.8%	-0.8	-0.2%	443.2
Electricity Generation	Petroleum	-5.6	-17.8%	-7.5	-29.0%	4.1	22.3%	2.9	12.8%	25.3
Transportation <sup>a</sup>	Petroleum	-21.4	-1.3%	-13.3	-0.8%	10.6	0.6%	24.0	1.4%	1,690.0
Residential	Natural Gas	-3.9	-1.5%	-29.8	-11.7%	41.4	18.4%	11.4	4.3%	277.6
Commercial	Natural Gas	2.7	1.6%	-13.6	-8.0%	22.3	14.2%	10.0	5.6%	189.2
Industrial	Coal	-8.1	-9.0%	-7.9	-9.7%	1.7	2.3%	-0.4	-0.6%	75.3
Industrial	Natural Gas	10.1	2.5%	17.5	4.2%	17.1	3.9%	14.2	3.1%	466.0
<b>All Sectors<sup>b</sup></b>	<b>All Fuels<sup>b</sup></b>	<b>-130.6</b>	<b>-2.4%</b>	<b>-203.0</b>	<b>-3.9%</b>	<b>132.9</b>	<b>2.6%</b>	<b>50.6</b>	<b>1.0%</b>	<b>5,208.2</b>

<sup>a</sup> Excludes emissions from International Bunker Fuels.

<sup>b</sup> Includes fuels and sectors not shown in table.

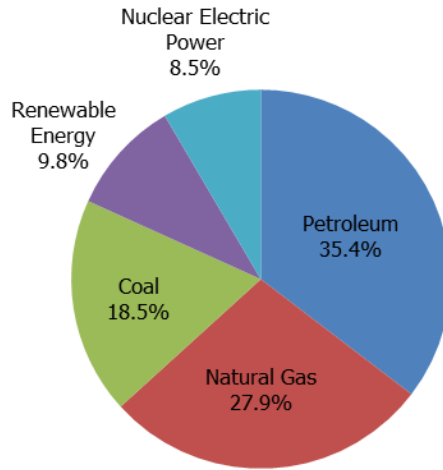
Note: Totals may not sum due to independent rounding.

In the United States, 82 percent of the energy consumed in 2014 was produced through the combustion of fossil fuels such as coal, natural gas, and petroleum (see Figure 3-3 and Figure 3-4). The remaining portion was supplied by nuclear electric power (8 percent) and by a variety of renewable energy sources (10 percent), primarily hydroelectric power, wind energy and biofuels (EIA 2016).<sup>7</sup> Specifically, petroleum supplied the largest share of domestic energy demands, accounting for 35 percent of total U.S. energy consumption in 2014. Natural gas and coal followed in order of energy demand importance, accounting for approximately 28 percent and 19 percent of total U.S. energy consumption, respectively. Petroleum was consumed primarily in the transportation end-use sector and the vast majority of coal was used in electricity generation. Natural gas was broadly consumed in all end-use sectors except transportation (see Figure 3-5) (EIA 2016).

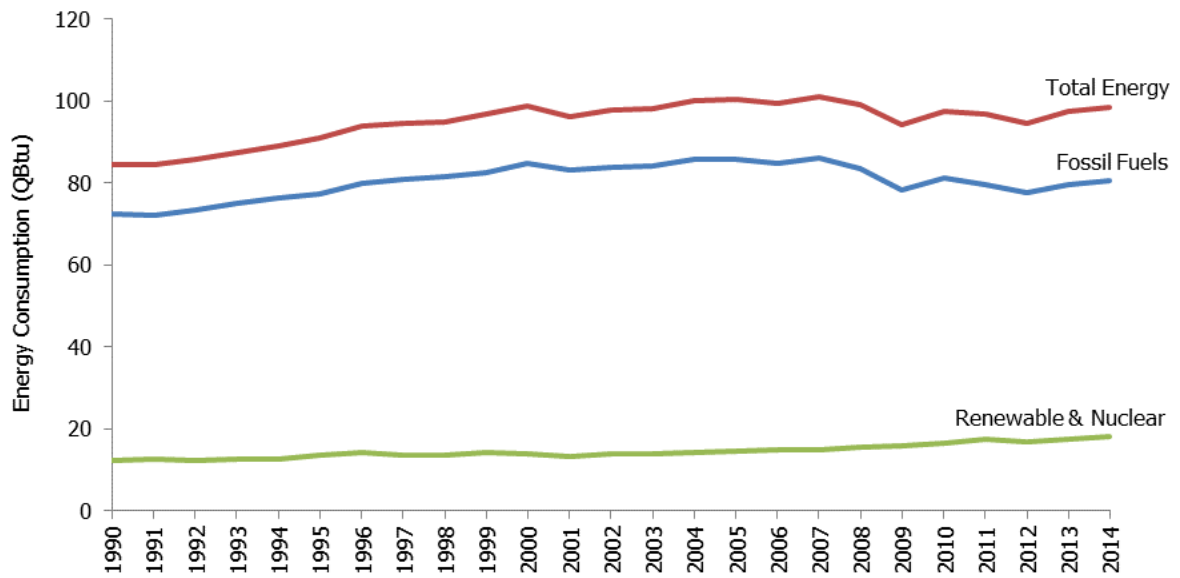
<sup>6</sup> Based on national aggregate carbon content of all coal, natural gas, and petroleum fuels combusted in the United States.

<sup>7</sup> Renewable energy, as defined in EIA's energy statistics, includes the following energy sources: hydroelectric power, geothermal energy, biofuels, solar energy, and wind energy.

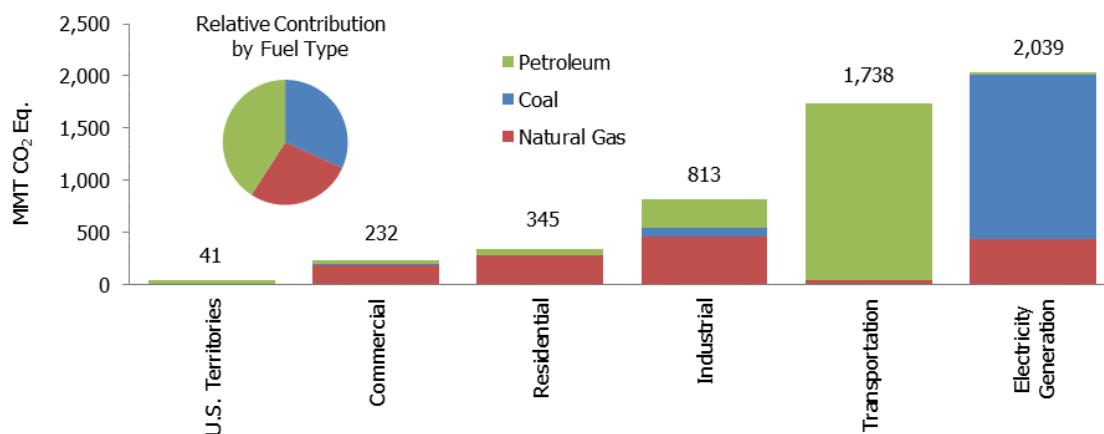
**Figure 3-3: 2014 U.S. Energy Consumption by Energy Source (Percent)**



**Figure 3-4: U.S. Energy Consumption (Quadrillion Btu)**



**Figure 3-5: 2014 CO<sub>2</sub> Emissions from Fossil Fuel Combustion by Sector and Fuel Type (MMT CO<sub>2</sub> Eq.)**



Fossil fuels are generally combusted for the purpose of producing energy for useful heat and work. During the combustion process, the C stored in the fuels is oxidized and emitted as CO<sub>2</sub> and smaller amounts of other gases, including CH<sub>4</sub>, CO, and NMVOCs.<sup>8</sup> These other C containing non-CO<sub>2</sub> gases are emitted as a byproduct of incomplete fuel combustion, but are, for the most part, eventually oxidized to CO<sub>2</sub> in the atmosphere. Therefore, it is assumed all of the C in fossil fuels used to produce energy is eventually converted to atmospheric CO<sub>2</sub>.

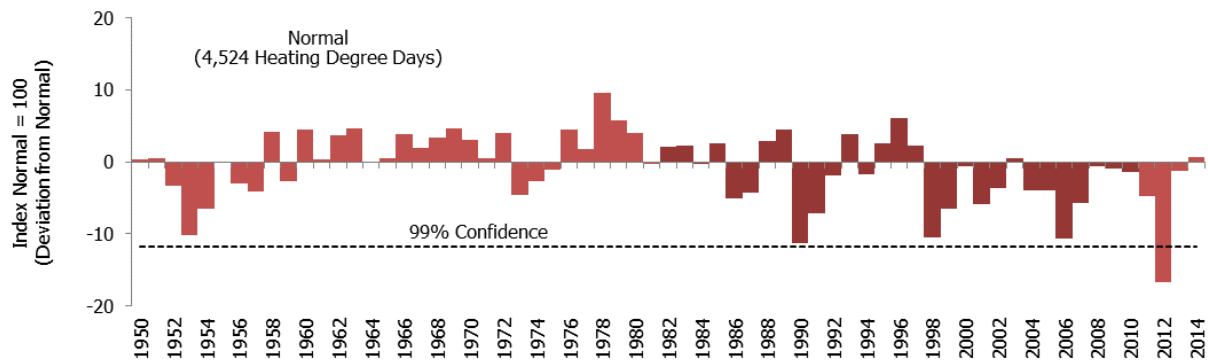
**Box 3-3: Weather and Non-Fossil Energy Effects on CO<sub>2</sub> from Fossil Fuel Combustion Trends**

In 2014, weather conditions, and a very cold first quarter of the year in particular, caused a significant increase in energy demand for heating fuels and is reflected in the increased residential emissions during the early part of the year (EIA 2016). The United States in 2014 also experienced a cooler winter overall compared to 2013, as heating degree days increased (1.9 percent). Cooling degree days decreased by 0.6 percent and despite this decrease in cooling degree days, electricity demand to cool homes still increased slightly. Colder winter conditions compared to 2013 resulted in a significant increase in the amount of energy required for heating, and heating degree days in the United States were 0.6 percent above normal for the first time since 2003 (see Figure 3-6). Summer conditions were slightly cooler in 2014 compared to 2013, and summer temperatures were warmer than normal, with cooling degree days 6.7 percent above normal (see Figure 3-7) (EIA 2016).<sup>9</sup>

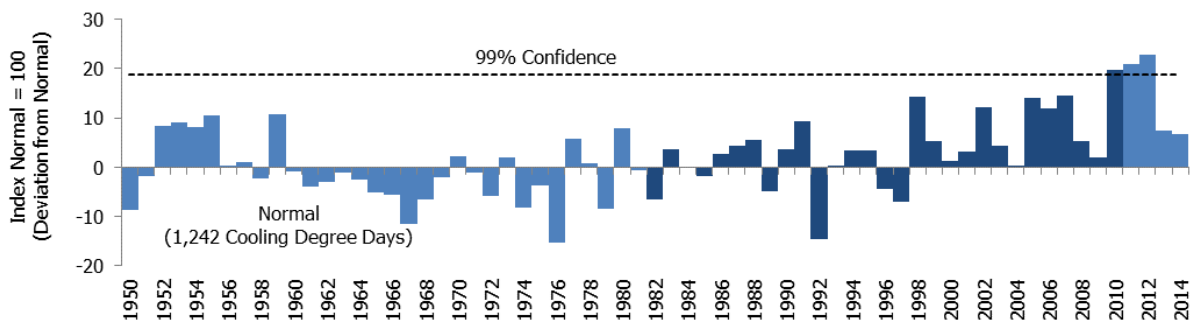
<sup>8</sup> See the sections entitled Stationary Combustion and Mobile Combustion in this chapter for information on non-CO<sub>2</sub> gas emissions from fossil fuel combustion.

<sup>9</sup> Degree days are relative measurements of outdoor air temperature. Heating degree days are deviations of the mean daily temperature below 65 degrees Fahrenheit, while cooling degree days are deviations of the mean daily temperature above 65 degrees Fahrenheit. Heating degree days have a considerably greater effect on energy demand and related emissions than do cooling degree days. Excludes Alaska and Hawaii. Normals are based on data from 1971 through 2000. The variation in these normals during this time period was ±10 percent and ±14 percent for heating and cooling degree days, respectively (99 percent confidence interval).

**Figure 3-6: Annual Deviations from Normal Heating Degree Days for the United States (1950–2014, Index Normal = 100)**



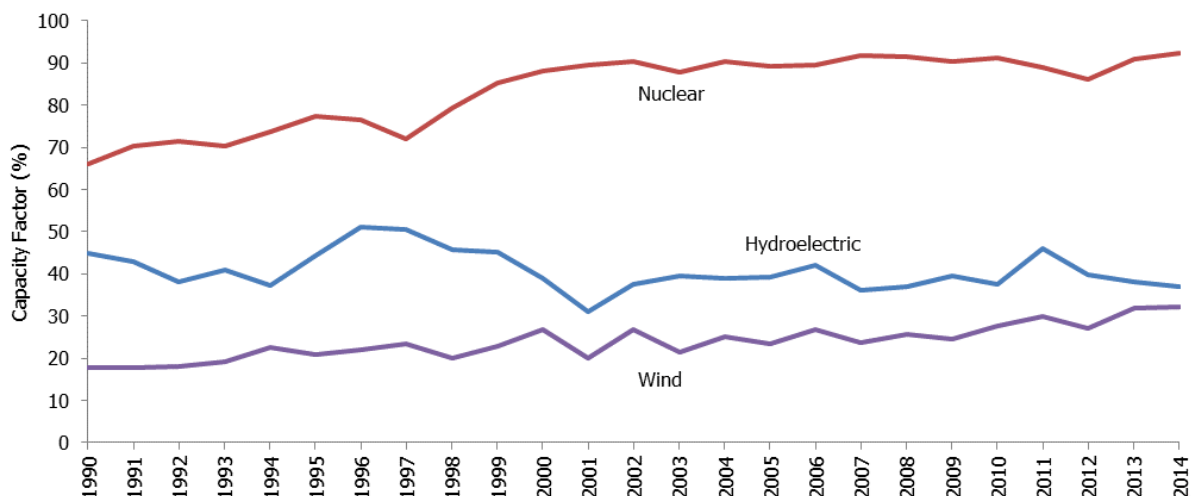
**Figure 3-7: Annual Deviations from Normal Cooling Degree Days for the United States (1950–2014, Index Normal = 100)**



Although no new U.S. nuclear power plants have been constructed in recent years, the utilization (i.e., capacity factors)<sup>10</sup> of existing plants in 2014 remained high at 92 percent. Electricity output by hydroelectric power plants decreased in 2014 by approximately 3 percent. In recent years, the wind power sector has been showing strong growth, such that, on the margin, it is becoming a relatively important electricity source. Electricity generated by nuclear plants in 2014 provided more than 3 times as much of the energy generated in the United States from hydroelectric plants (EIA 2016). Nuclear, hydroelectric, and wind power capacity factors since 1990 are shown in Figure 3-8.

<sup>10</sup> The capacity factor equals generation divided by net summer capacity. Summer capacity is defined as "The maximum output that generating equipment can supply to system load, as demonstrated by a multi-hour test, at the time of summer peak demand (period of June 1 through September 30)." Data for both the generation and net summer capacity are from EIA (2016).

**Figure 3-8: Nuclear, Hydroelectric, and Wind Power Plant Capacity Factors in the United States (1990–2014, Percent)**



## Fossil Fuel Combustion Emissions by Sector

In addition to the CO<sub>2</sub> emitted from fossil fuel combustion, CH<sub>4</sub> and N<sub>2</sub>O are emitted from stationary and mobile combustion as well. Table 3-7 provides an overview of the CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions from fossil fuel combustion by sector.

**Table 3-7: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from Fossil Fuel Combustion by Sector (MMT CO<sub>2</sub> Eq.)**

End-Use Sector	1990	2005	2010	2011	2012	2013	2014
<b>Electricity Generation</b>	<b>1,828.5</b>	<b>2,417.4</b>	<b>2,277.4</b>	<b>2,175.8</b>	<b>2,040.5</b>	<b>2,057.7</b>	<b>2,059.4</b>
CO <sub>2</sub>	1,820.8	2,400.9	2,258.4	2,157.7	2,022.2	2,038.1	2,039.3
CH <sub>4</sub>	0.3	0.5	0.5	0.4	0.4	0.4	0.4
N <sub>2</sub> O	7.4	16.0	18.5	17.6	17.8	19.1	19.6
<b>Transportation</b>	<b>1,540.6</b>	<b>1,924.1</b>	<b>1,754.2</b>	<b>1,732.3</b>	<b>1,718.9</b>	<b>1,733.3</b>	<b>1,756.0</b>
CO <sub>2</sub>	1,493.8	1,887.0	1,728.3	1,707.6	1,696.8	1,713.0	1,737.6
CH <sub>4</sub>	5.6	2.7	2.3	2.2	2.2	2.1	2.0
N <sub>2</sub> O	41.2	34.4	23.6	22.4	20.0	18.2	16.3
<b>Industrial</b>	<b>847.4</b>	<b>832.7</b>	<b>779.3</b>	<b>777.3</b>	<b>786.9</b>	<b>816.2</b>	<b>817.2</b>
CO <sub>2</sub>	842.5	828.0	775.5	773.3	782.9	812.2	813.3
CH <sub>4</sub>	1.8	1.7	1.4	1.5	1.5	1.5	1.5
N <sub>2</sub> O	3.1	2.9	2.4	2.5	2.5	2.4	2.4
<b>Residential</b>	<b>344.6</b>	<b>362.8</b>	<b>339.4</b>	<b>331.7</b>	<b>287.0</b>	<b>335.6</b>	<b>351.1</b>
CO <sub>2</sub>	338.3	357.8	334.6	326.8	282.5	329.7	345.1
CH <sub>4</sub>	5.2	4.1	4.0	4.0	3.7	5.0	5.0
N <sub>2</sub> O	1.0	0.9	0.8	0.8	0.7	1.0	1.0
<b>Commercial</b>	<b>218.8</b>	<b>224.9</b>	<b>221.5</b>	<b>222.1</b>	<b>197.9</b>	<b>222.4</b>	<b>233.3</b>
CO <sub>2</sub>	217.4	223.5	220.1	220.7	196.7	221.0	231.9
CH <sub>4</sub>	1.0	1.1	1.1	1.0	0.9	1.0	1.1
N <sub>2</sub> O	0.4	0.3	0.3	0.3	0.3	0.3	0.3

<b>U.S. Territories<sup>a</sup></b>	<b>28.0</b>	<b>50.1</b>	<b>41.6</b>	<b>41.7</b>	<b>43.7</b>	<b>43.7</b>	<b>41.2</b>
<b>Total</b>	<b>4,807.9</b>	<b>5,812.0</b>	<b>5,413.4</b>	<b>5,280.8</b>	<b>5,074.9</b>	<b>5,208.8</b>	<b>5,258.1</b>

<sup>a</sup> U.S. Territories are not apportioned by sector, and emissions are total greenhouse gas emissions from all fuel combustion sources.

Notes: Totals may not sum due to independent rounding. Emissions from fossil fuel combustion by electricity generation are allocated based on aggregate national electricity consumption by each end-use sector.

Other than CO<sub>2</sub>, gases emitted from stationary combustion include the greenhouse gases CH<sub>4</sub> and N<sub>2</sub>O and the indirect greenhouse gases NO<sub>x</sub>, CO, and NMVOCs.<sup>11</sup> Methane and N<sub>2</sub>O emissions from stationary combustion sources depend upon fuel characteristics, size and vintage, along with combustion technology, pollution control equipment, ambient environmental conditions, and operation and maintenance practices. Nitrous oxide emissions from stationary combustion are closely related to air-fuel mixes and combustion temperatures, as well as the characteristics of any pollution control equipment that is employed. Methane emissions from stationary combustion are primarily a function of the CH<sub>4</sub> content of the fuel and combustion efficiency.

Mobile combustion produces greenhouse gases other than CO<sub>2</sub>, including CH<sub>4</sub>, N<sub>2</sub>O, and indirect greenhouse gases including NO<sub>x</sub>, CO, and NMVOCs. As with stationary combustion, N<sub>2</sub>O and NO<sub>x</sub> emissions from mobile combustion are closely related to fuel characteristics, air-fuel mixes, combustion temperatures, and the use of pollution control equipment. N<sub>2</sub>O from mobile sources, in particular, can be formed by the catalytic processes used to control NO<sub>x</sub>, CO, and hydrocarbon emissions. Carbon monoxide emissions from mobile combustion are significantly affected by combustion efficiency and the presence of post-combustion emission controls. Carbon monoxide emissions are highest when air-fuel mixtures have less oxygen than required for complete combustion. These emissions occur especially in idle, low speed, and cold start conditions. Methane and NMVOC emissions from motor vehicles are a function of the CH<sub>4</sub> content of the motor fuel, the amount of hydrocarbons passing uncombusted through the engine, and any post-combustion control of hydrocarbon emissions (such as catalytic converters).

An alternative method of presenting combustion emissions is to allocate emissions associated with electricity generation to the sectors in which it is used. Four end-use sectors were defined: industrial, transportation, residential, and commercial. In the table below, electricity generation emissions have been distributed to each end-use sector based upon the sector's share of national electricity consumption, with the exception of CH<sub>4</sub> and N<sub>2</sub>O from transportation.<sup>12</sup> Emissions from U.S. Territories are also calculated separately due to a lack of end-use-specific consumption data. This method assumes that emissions from combustion sources are distributed across the four end-use sectors based on the ratio of electricity consumption in that sector. The results of this alternative method are presented in Table 3-8.

**Table 3-8: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from Fossil Fuel Combustion by End-Use Sector (MMT CO<sub>2</sub> Eq.)**

<b>End-Use Sector</b>	<b>1990</b>	<b>2005</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Transportation</b>	<b>1,543.7</b>	<b>1,928.9</b>	<b>1,758.7</b>	<b>1,736.6</b>	<b>1,722.8</b>	<b>1,737.4</b>	<b>1,760.1</b>
CO <sub>2</sub>	1,496.8	1,891.8	1,732.7	1,711.9	1,700.6	1,717.0	1,741.7
CH <sub>4</sub>	5.6	2.7	2.3	2.2	2.2	2.1	2.0
N <sub>2</sub> O	41.2	34.4	23.7	22.5	20.1	18.2	16.4
<b>Industrial</b>	<b>1,537.0</b>	<b>1,574.3</b>	<b>1,425.7</b>	<b>1,407.2</b>	<b>1,385.0</b>	<b>1,416.6</b>	<b>1,416.6</b>
CO <sub>2</sub>	1,529.2	1,564.6	1,416.5	1,398.0	1,375.7	1,407.0	1,406.8
CH <sub>4</sub>	2.0	1.9	1.6	1.6	1.6	1.6	1.6
N <sub>2</sub> O	5.9	7.8	7.6	7.6	7.7	8.0	8.2
<b>Residential</b>	<b>940.2</b>	<b>1,224.9</b>	<b>1,186.5</b>	<b>1,129.0</b>	<b>1,018.8</b>	<b>1,077.6</b>	<b>1,093.6</b>
CO <sub>2</sub>	931.4	1,214.1	1,174.6	1,117.5	1,007.8	1,064.6	1,080.3
CH <sub>4</sub>	5.4	4.2	4.2	4.2	3.9	5.1	5.2
N <sub>2</sub> O	3.4	6.6	7.7	7.3	7.1	7.9	8.1

<sup>11</sup> Sulfur dioxide (SO<sub>2</sub>) emissions from stationary combustion are addressed in Annex 6.3.

<sup>12</sup> Separate calculations were performed for transportation-related CH<sub>4</sub> and N<sub>2</sub>O. The methodology used to calculate these emissions are discussed in the mobile combustion section.

<b>Commercial</b>	<b>759.1</b>	<b>1,033.7</b>	<b>1,000.9</b>	<b>966.3</b>	<b>904.5</b>	<b>933.6</b>	<b>946.7</b>
CO <sub>2</sub>	755.4	1,026.8	993.0	958.8	897.0	925.5	938.4
CH <sub>4</sub>	1.1	1.2	1.2	1.2	1.1	1.2	1.2
N <sub>2</sub> O	2.5	5.7	6.6	6.3	6.4	6.9	7.1
<b>U.S. Territories<sup>a</sup></b>	<b>28.0</b>	<b>50.1</b>	<b>41.6</b>	<b>41.7</b>	<b>43.7</b>	<b>43.7</b>	<b>41.2</b>
<b>Total</b>	<b>4,807.9</b>	<b>5,812.0</b>	<b>5,413.4</b>	<b>5,280.8</b>	<b>5,074.9</b>	<b>5,208.8</b>	<b>5,258.1</b>

<sup>a</sup> U.S. Territories are not apportioned by sector, and emissions are total greenhouse gas emissions from all fuel combustion sources.

Notes: Totals may not sum due to independent rounding. Emissions from fossil fuel combustion by electricity generation are allocated based on aggregate national electricity consumption by each end-use sector.

## Stationary Combustion

The direct combustion of fuels by stationary sources in the electricity generation, industrial, commercial, and residential sectors represent the greatest share of U.S. greenhouse gas emissions. Table 3-9 presents CO<sub>2</sub> emissions from fossil fuel combustion by stationary sources. The CO<sub>2</sub> emitted is closely linked to the type of fuel being combusted in each sector (see Methodology section of CO<sub>2</sub> from Fossil Fuel Combustion). Other than CO<sub>2</sub>, gases emitted from stationary combustion include the greenhouse gases CH<sub>4</sub> and N<sub>2</sub>O. Table 3-10 and Table 3-11 present CH<sub>4</sub> and N<sub>2</sub>O emissions from the combustion of fuels in stationary sources.<sup>13</sup> Methane and N<sub>2</sub>O emissions from stationary combustion sources depend upon fuel characteristics, combustion technology, pollution control equipment, ambient environmental conditions, and operation and maintenance practices. Nitrous oxide emissions from stationary combustion are closely related to air-fuel mixes and combustion temperatures, as well as the characteristics of any pollution control equipment that is employed. Methane emissions from stationary combustion are primarily a function of the CH<sub>4</sub> content of the fuel and combustion efficiency. The CH<sub>4</sub> and N<sub>2</sub>O emission estimation methodology was revised in 2010 to utilize the facility-specific technology and fuel use data reported to EPA's Acid Rain Program (see Methodology section for CH<sub>4</sub> and N<sub>2</sub>O from stationary combustion). Please refer to Table 3-7 for the corresponding presentation of all direct emission sources of fuel combustion.

**Table 3-9: CO<sub>2</sub> Emissions from Stationary Fossil Fuel Combustion (MMT CO<sub>2</sub> Eq.)**

Sector/Fuel Type	1990	2005	2010	2011	2012	2013	2014
<b>Electricity Generation</b>	<b>1,820.8</b>	<b>2,400.9</b>	<b>2,258.4</b>	<b>2,157.7</b>	<b>2,022.2</b>	<b>2,038.1</b>	<b>2,039.3</b>
Coal	1,547.6	1,983.8	1,827.6	1,722.7	1,511.2	1,571.3	1,570.4
Natural Gas	175.3	318.8	399.0	408.8	492.2	444.0	443.2
Fuel Oil	97.5	97.9	31.4	25.8	18.3	22.4	25.3
Geothermal	0.4	0.4	0.4	0.4	0.4	0.4	0.4
<b>Industrial</b>	<b>842.5</b>	<b>828.0</b>	<b>775.5</b>	<b>773.3</b>	<b>782.9</b>	<b>812.2</b>	<b>813.3</b>
Coal	155.3	115.3	90.1	82.0	74.1	75.7	75.3
Natural Gas	408.9	388.5	407.2	417.3	434.8	451.9	466.0
Fuel Oil	278.3	324.2	278.2	274.0	274.1	284.6	271.9
<b>Commercial</b>	<b>217.4</b>	<b>223.5</b>	<b>220.1</b>	<b>220.7</b>	<b>196.7</b>	<b>221.0</b>	<b>231.9</b>
Coal	12.0	9.3	6.6	5.8	4.1	3.9	4.5
Natural Gas	142.1	162.9	167.7	170.5	156.9	179.1	189.2
Fuel Oil	63.3	51.3	45.8	44.5	35.7	38.0	38.2
<b>Residential</b>	<b>338.3</b>	<b>357.8</b>	<b>334.6</b>	<b>326.8</b>	<b>282.5</b>	<b>329.7</b>	<b>345.1</b>
Coal	3.0	0.8	NO	NO	NO	NO	NO
Natural Gas	238.0	262.2	258.6	254.7	224.8	266.2	277.6
Fuel Oil	97.4	94.9	76.0	72.2	57.7	63.4	67.5
<b>U.S. Territories</b>	<b>27.9</b>	<b>49.9</b>	<b>41.4</b>	<b>41.5</b>	<b>43.6</b>	<b>43.5</b>	<b>41.0</b>

<sup>13</sup> Since emission estimates for U.S. Territories cannot be disaggregated by gas in Table 3-10 and Table 3-11, the values for CH<sub>4</sub> and N<sub>2</sub>O exclude U.S. territory emissions.



Coal	0.6		3.0		3.4	3.4	3.4	3.4	3.4
Natural Gas	NO		1.3		1.5	1.4	2.6	3.0	3.0
Fuel Oil	27.2		45.6		36.5	36.7	37.6	37.1	34.6
<b>Total</b>	<b>3,246.9</b>		<b>3,860.1</b>		<b>3,630.0</b>	<b>3,520.1</b>	<b>3,327.9</b>	<b>3,444.6</b>	<b>3,470.6</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NO - Not occurring

Note: Totals may not sum due to independent rounding.

**Table 3-10: CH<sub>4</sub> Emissions from Stationary Combustion (MMT CO<sub>2</sub> Eq.)**

Sector/Fuel Type	1990	2005	2010	2011	2012	2013	2014
<b>Electric Power</b>	<b>0.3</b>	<b>0.5</b>	<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>
Coal	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Fuel Oil	+	+	+	+	+	+	+
Natural gas	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Wood	+	+	+	+	+	+	+
<b>Industrial</b>	<b>1.8</b>	<b>1.7</b>	<b>1.5</b>	<b>1.5</b>	<b>1.5</b>	<b>1.5</b>	<b>1.5</b>
Coal	0.4	0.3	0.2	0.2	0.2	0.2	0.2
Fuel Oil	0.2	0.2	0.2	0.1	0.1	0.2	0.1
Natural gas	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Wood	1.0	1.0	0.9	0.9	1.0	0.9	0.9
<b>Commercial</b>	<b>1.0</b>	<b>1.1</b>	<b>1.1</b>	<b>1.0</b>	<b>0.9</b>	<b>1.0</b>	<b>1.1</b>
Coal	+	+	+	+	+	+	+
Fuel Oil	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Natural gas	0.3	0.4	0.4	0.4	0.4	0.4	0.4
Wood	0.5	0.5	0.5	0.5	0.4	0.5	0.5
<b>Residential</b>	<b>5.2</b>	<b>4.1</b>	<b>4.0</b>	<b>4.0</b>	<b>3.7</b>	<b>5.0</b>	<b>5.0</b>
Coal	0.2	0.1	NO	NO	NO	NO	NO
Fuel Oil	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Natural Gas	0.5	0.6	0.6	0.6	0.5	0.6	0.6
Wood	4.1	3.1	3.1	3.2	3.0	4.1	4.1
<b>U.S. Territories</b>	<b>+</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
Coal	+	+	+	+	+	+	+
Fuel Oil	+	0.1	0.1	0.1	0.1	0.1	0.1
Natural Gas	NO	+	+	+	+	+	+
Wood	NO	NO	NO	NO	NO	NO	NO
<b>Total</b>	<b>8.5</b>	<b>7.4</b>	<b>7.1</b>	<b>7.1</b>	<b>6.6</b>	<b>8.0</b>	<b>8.1</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

Note: Totals may not sum due to independent rounding.

**Table 3-11: N<sub>2</sub>O Emissions from Stationary Combustion (MMT CO<sub>2</sub> Eq.)**

Sector/Fuel Type	1990	2005	2010	2011	2012	2013	2014
<b>Electricity Generation</b>	<b>7.4</b>	<b>16.0</b>	<b>18.5</b>	<b>17.6</b>	<b>17.8</b>	<b>19.1</b>	<b>19.6</b>
Coal	6.3	11.6	12.5	11.5	10.2	12.1	12.4
Fuel Oil	0.1	0.1	+	+	+	+	+
Natural Gas	1.0	4.3	5.9	6.1	7.5	7.0	7.2
Wood	+	+	+	+	+	+	+
<b>Industrial</b>	<b>3.1</b>	<b>2.9</b>	<b>2.5</b>	<b>2.4</b>	<b>2.4</b>	<b>2.4</b>	<b>2.4</b>
Coal	0.7	0.5	0.4	0.4	0.4	0.4	0.4
Fuel Oil	0.5	0.5	0.4	0.4	0.3	0.4	0.3
Natural Gas	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Wood	1.6	1.6	1.4	1.5	1.5	1.5	1.5
<b>Commercial</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>
Coal	0.1	+	+	+	+	+	+
Fuel Oil	0.2	0.1	0.1	0.1	0.1	0.1	0.1

Natural Gas	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Wood	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<b>Residential</b>	<b>1.0</b>	<b>0.9</b>	<b>0.8</b>	<b>0.8</b>	<b>0.7</b>	<b>1.0</b>	<b>1.0</b>
Coal	+	+	NO	NO	NO	NO	NO
Fuel Oil	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Natural Gas	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Wood	0.7	0.5	0.5	0.5	0.5	0.7	0.7
<b>U.S. Territories</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
Coal	+	+	+	+	+	+	+
Fuel Oil	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Natural Gas	NO	+	+	+	+	+	+
Wood	NO	NO	NO	NO	NO	NO	NO
<b>Total</b>	<b>11.9</b>	<b>20.2</b>	<b>22.2</b>	<b>21.3</b>	<b>21.4</b>	<b>22.9</b>	<b>23.4</b>

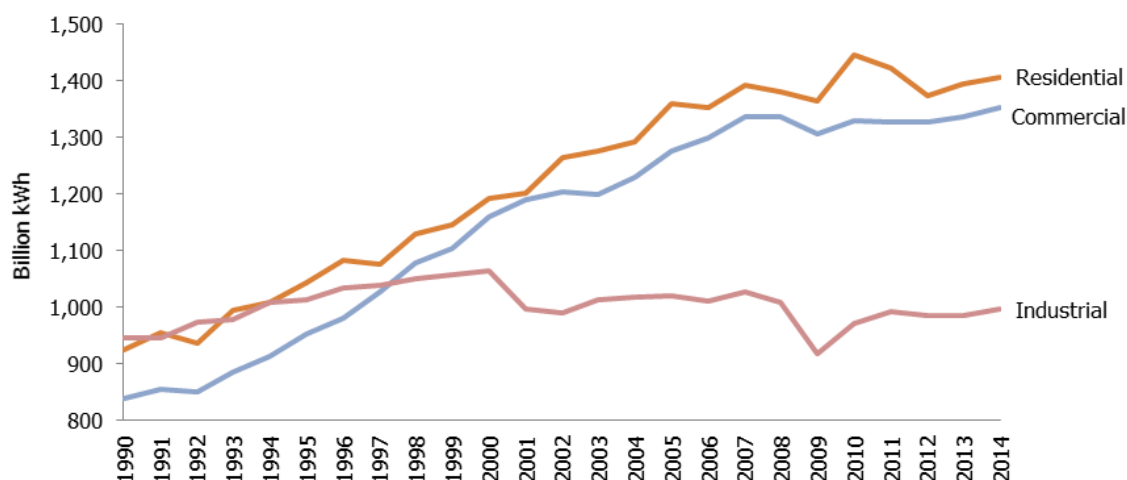
+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

Note: Totals may not sum due to independent rounding.

## Electricity Generation

The process of generating electricity is the single largest source of CO<sub>2</sub> emissions in the United States, representing 37 percent of total CO<sub>2</sub> emissions from all CO<sub>2</sub> emissions sources across the United States. Methane and N<sub>2</sub>O accounted for a small portion of emissions from electricity generation, representing less than 0.1 percent and 1.0 percent, respectively. Electricity generation also accounted for the largest share of CO<sub>2</sub> emissions from fossil fuel combustion, approximately 39.2 percent in 2014. Methane and N<sub>2</sub>O from electricity generation represented 4.4 and 49.3 percent of total methane and N<sub>2</sub>O emissions from fossil fuel combustion in 2014, respectively. Electricity was consumed primarily in the residential, commercial, and industrial end-use sectors for lighting, heating, electric motors, appliances, electronics, and air conditioning (see Figure 3-9). Electricity generators, including those using low-CO<sub>2</sub> emitting technologies, relied on coal for approximately 39 percent of their total energy requirements in 2014. Recently an increase in the carbon intensity of fuels consumed to generate electricity has occurred due to an increase in coal consumption, and decreased natural gas consumption and other generation sources. Total U.S. electricity generators used natural gas for approximately 27 percent of their total energy requirements in 2014 (EIA 2015a).

**Figure 3-9: Electricity Generation Retail Sales by End-Use Sector (Billion kWh)**



The electric power industry includes all power producers, consisting of both regulated utilities and non-utilities (e.g. independent power producers, qualifying co-generators, and other small power producers). For the underlying energy data used in this chapter, the Energy Information Administration (EIA) places electric power generation into three functional categories: the electric power sector, the commercial sector, and the industrial sector. The electric power sector consists of electric utilities and independent power producers whose primary business is the production

of electricity, while the other sectors consist of those producers that indicate their primary business is something other than the production of electricity.<sup>14</sup>

The industrial, residential, and commercial end-use sectors, as presented in Table 3-8, were reliant on electricity for meeting energy needs. The residential and commercial end-use sectors were especially reliant on electricity consumption for lighting, heating, air conditioning, and operating appliances. Electricity sales to the residential and commercial end-use sectors in 2014 increased approximately 0.9 percent and 1.1 percent, respectively. The trend in the residential and commercial sectors can largely be attributed to colder, more energy-intensive winter conditions compared to 2013. Electricity sales to the industrial sector in 2014 increased approximately 1.2 percent. Overall, in 2014, the amount of electricity generated (in kWh) increased approximately 1.1 percent relative to the previous year, while CO<sub>2</sub> emissions from the electric power sector increased by 0.1 percent. The increase in CO<sub>2</sub> emissions, despite the relatively larger increase in electricity generation was a result of a slight decrease in the consumption of coal and natural gas for electricity generation by 0.1 percent and 0.2 percent, respectively, in 2014, and an increase in the consumption of petroleum for electricity generation by 15.8 percent.

## Industrial Sector

Industrial sector CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, emissions accounted for 16, 15, and 6 percent of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, emissions from fossil fuel combustion, respectively. Carbon dioxide, CH<sub>4</sub>, and N<sub>2</sub>O emissions resulted from the direct consumption of fossil fuels for steam and process heat production.

The industrial sector, per the underlying energy consumption data from EIA, includes activities such as manufacturing, construction, mining, and agriculture. The largest of these activities in terms of energy consumption is manufacturing, of which six industries—Petroleum Refineries, Chemicals, Paper, Primary Metals, Food, and Nonmetallic Mineral Products—represent the vast majority of the energy use (EIA 2016 and EIA 2009b).

In theory, emissions from the industrial sector should be highly correlated with economic growth and industrial output, but heating of industrial buildings and agricultural energy consumption are also affected by weather conditions.<sup>15</sup> In addition, structural changes within the U.S. economy that lead to shifts in industrial output away from energy-intensive manufacturing products to less energy-intensive products (e.g., from steel to computer equipment) also have a significant effect on industrial emissions.

From 2013 to 2014, total industrial production and manufacturing output increased by 3.7 percent (FRB 2015). Over this period, output increased across production indices for Food, Petroleum Refineries, Chemicals, Primary Metals, and Nonmetallic Mineral Products, and decreased slightly for Paper (see Figure 3-10). Through EPA's Greenhouse Gas Reporting Program (GHGRP), industrial trends can be discerned from the overall EIA industrial fuel consumption data used for these calculations. For example, from 2013 to 2014 the underlying EIA data showed increased consumption of natural gas and a decrease in petroleum fuels in the industrial sector. EPA's GHGRP data highlights that chemical manufacturing and nonmetallic mineral products were contributors to these trends.<sup>16</sup>

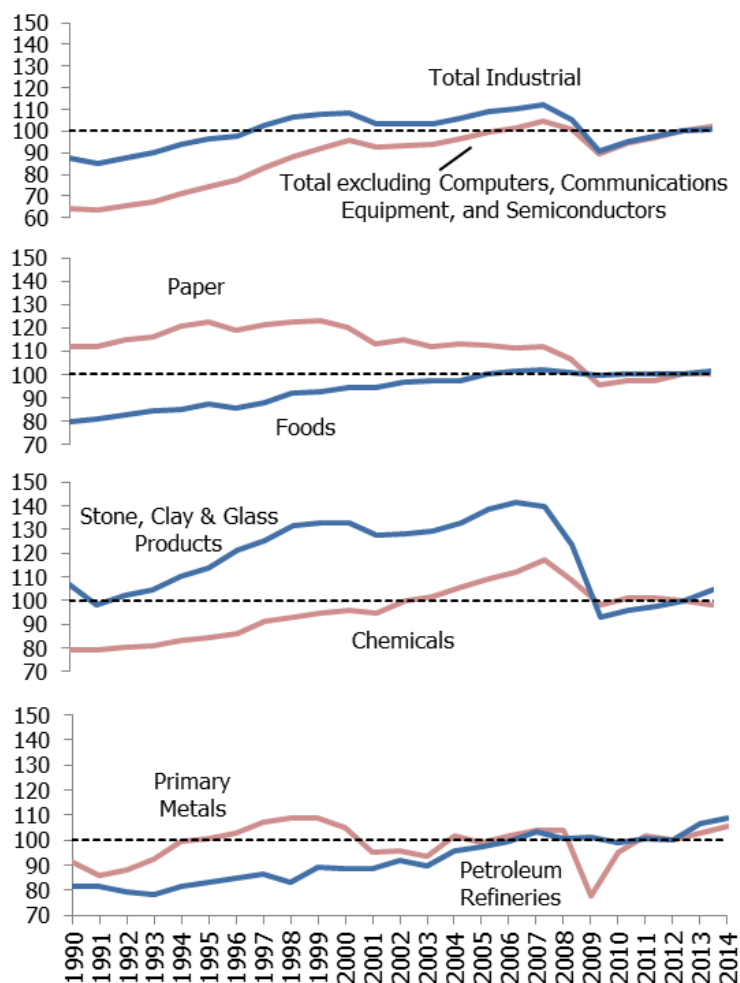
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<sup>14</sup> Utilities primarily generate power for the U.S. electric grid for sale to retail customers. Nonutilities produce electricity for their own use, to sell to large consumers, or to sell on the wholesale electricity market (e.g., to utilities for distribution and resale to customers).

<sup>15</sup> Some commercial customers are large enough to obtain an industrial price for natural gas and/or electricity and are consequently grouped with the industrial end-use sector in U.S. energy statistics. These misclassifications of large commercial customers likely cause the industrial end-use sector to appear to be more sensitive to weather conditions.

<sup>16</sup> Further details on industrial sector combustion emissions are provided by EPA's GHGRP. See <<http://ghgdata.epa.gov/ghgp/main.do>>.

**Figure 3-10: Industrial Production Indices (Index 2007=100)**



Despite the growth in industrial output (64 percent) and the overall U.S. economy (78 percent) from 1990 to 2014, CO<sub>2</sub> emissions from fossil fuel combustion in the industrial sector decreased by 3.5 percent over the same time series. A number of factors are believed to have caused this disparity between growth in industrial output and decrease in industrial emissions, including: (1) more rapid growth in output from less energy-intensive industries relative to traditional manufacturing industries, and (2) energy-intensive industries such as steel are employing new methods, such as electric arc furnaces, that are less carbon intensive than the older methods. In 2014, CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions from fossil fuel combustion and electricity use within the industrial end-use sector totaled 1,416.6 MMT CO<sub>2</sub> Eq., or approximately equal to 2013 emissions.

## Residential and Commercial Sectors

Residential and commercial sector CO<sub>2</sub> emissions accounted for 7 and 4 percent of CO<sub>2</sub> emissions from fossil fuel combustion, CH<sub>4</sub> emissions accounted for 49 and 11 percent of CH<sub>4</sub> emissions from fossil fuel combustion, and N<sub>2</sub>O emissions accounted for 2 and 1 percent of N<sub>2</sub>O emissions from fossil fuel combustion, respectively. Emissions from these sectors were largely due to the direct consumption of natural gas and petroleum products, primarily for heating and cooking needs. Coal consumption was a minor component of energy use in both of these end-use sectors. In 2014, CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions from fossil fuel combustion and electricity use within the residential and commercial end-use sectors were 1,093.6 MMT CO<sub>2</sub> Eq. and 946.7 MMT CO<sub>2</sub> Eq., respectively. Total CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions from fossil fuel combustion and electricity use within the residential and commercial end-use sectors increased by 1.5 and 1.4 percent from 2013 to 2014, respectively.

Emissions from the residential and commercial sectors have generally been increasing since 1990, and are often correlated with short-term fluctuations in energy consumption caused by weather conditions, rather than prevailing economic conditions. In the long-term, both sectors are also affected by population growth, regional migration trends, and changes in housing and building attributes (e.g., size and insulation).

In 2014, combustion emissions from natural gas consumption represent 80 and 82 percent of the direct fossil fuel CO<sub>2</sub> emissions from the residential and commercial sectors, respectively. Natural gas combustion CO<sub>2</sub> emissions from the residential and commercial sectors in 2014 increased by 4.3 percent and 5.6 percent from 2013 levels, respectively.

## U.S. Territories

Emissions from U.S. Territories are based on the fuel consumption in American Samoa, Guam, Puerto Rico, U.S. Virgin Islands, Wake Island, and other U.S. Pacific Islands. As described in the Methodology section for CO<sub>2</sub> from fossil fuel combustion, this data is collected separately from the sectoral-level data available for the general calculations. As sectoral information is not available for U.S. Territories, CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions are not presented for U.S. Territories in the tables above, though the emissions will include some transportation and mobile combustion sources.

## Transportation Sector and Mobile Combustion

This discussion of transportation emissions follows the alternative method of presenting combustion emissions by allocating emissions associated with electricity generation to the transportation end-use sector, as presented in Table 3-8. For direct emissions from transportation (i.e., not including emissions associated with the sector's electricity consumption), please see Table 3-7.

### *Transportation End-Use Sector*

The transportation end-use sector accounted for 1,760.1 MMT CO<sub>2</sub> Eq. in 2014, which represented 33 percent of CO<sub>2</sub> emissions, 20 percent of CH<sub>4</sub> emissions, and 41 percent of N<sub>2</sub>O emissions from fossil fuel combustion, respectively.<sup>17</sup> Fuel purchased in the United States for international aircraft and marine travel accounted for an additional 104.2 MMT CO<sub>2</sub> Eq. in 2014; these emissions are recorded as international bunkers and are not included in U.S. totals according to UNFCCC reporting protocols.

From 1990 to 2014, transportation emissions from fossil fuel combustion rose by 14 percent due, in large part, to increased demand for travel with limited gains in fuel efficiency for much of this time period. The number of vehicle miles traveled (VMT) by light-duty motor vehicles (passenger cars and light-duty trucks) increased 37 percent from 1990 to 2014, as a result of a confluence of factors including population growth, economic growth, urban sprawl, and periods of low fuel prices.

From 2013 to 2014, CO<sub>2</sub> emissions from the transportation end-use sector increased by 1.4 percent.<sup>18</sup> The increase in emissions can largely be attributed to small increases in VMT and fuel use across many on-road transportation modes. Commercial aircraft emissions have decreased 18 percent since 2007.<sup>19</sup> Decreases in jet fuel emissions (excluding bunkers) since 2007 are due in part to improved operational efficiency that results in more direct flight routing, improvements in aircraft and engine technologies to reduce fuel burn and emissions, and the accelerated retirement of older, less fuel efficient aircraft.

Almost all of the energy consumed for transportation was supplied by petroleum-based products, with more than half being related to gasoline consumption in automobiles and other highway vehicles. Other fuel uses, especially diesel fuel for freight trucks and jet fuel for aircraft, accounted for the remainder. The primary driver of transportation-related emissions was CO<sub>2</sub> from fossil fuel combustion, which increased by 16 percent from 1990 to

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<sup>17</sup> Note that these totals include CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions from some sources in the U.S. Territories (ships and boats, recreational boats, non-transportation mobile sources) and CH<sub>4</sub> and N<sub>2</sub>O emissions from transportation rail electricity.

<sup>18</sup> Note that this value does not include lubricants.

<sup>19</sup> Commercial aircraft, as modeled in FAA's AEDT, consists of passenger aircraft, cargo, and other chartered flights.

2014. Annex 3.2 presents the total emissions from all transportation and mobile sources, including CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, and HFCs.

### *Transportation Fossil Fuel Combustion CO<sub>2</sub> Emissions*

Domestic transportation CO<sub>2</sub> emissions increased by 16 percent (244.8 MMT CO<sub>2</sub>) between 1990 and 2014, an annualized increase of 0.7 percent. Among domestic transportation sources, light-duty vehicles (including passenger cars and light-duty trucks) represented 60 percent of CO<sub>2</sub> emissions from fossil fuel combustion, medium- and heavy-duty trucks and buses 24 percent, commercial aircraft 7 percent, and other sources 9 percent. See Table 3-12 for a detailed breakdown of transportation CO<sub>2</sub> emissions by mode and fuel type.

Almost all of the energy consumed by the transportation sector is petroleum-based, including motor gasoline, diesel fuel, jet fuel, and residual oil. Carbon dioxide emissions from the combustion of ethanol and biodiesel for transportation purposes, along with the emissions associated with the agricultural and industrial processes involved in the production of biofuel, are captured in other Inventory sectors.<sup>20</sup> Ethanol consumption from the transportation sector has increased from 0.7 billion gallons in 1990 to 12.9 billion gallons in 2014, while biodiesel consumption has increased from 0.01 billion gallons in 2001 to 1.4 billion gallons in 2014. For further information, see the section on biofuel consumption at the end of this chapter and Table A-93 in Annex 3.2.

Carbon dioxide emissions from passenger cars and light-duty trucks totaled 1,046.9 MMT CO<sub>2</sub> in 2014, an increase of 10 percent (96.4 MMT CO<sub>2</sub>) from 1990 due, in large part, to increased demand for travel as fleetwide light-duty vehicle fuel economy was relatively stable (average new vehicle fuel economy declined slowly from 1990 through 2004 and then increased more rapidly from 2005 through 2014). Carbon dioxide emissions from passenger cars and light-duty trucks peaked at 1,181.1 MMT CO<sub>2</sub> in 2004, and since then have declined about 11 percent. The decline in new light-duty vehicle fuel economy between 1990 and 2004 (Figure 3-11) reflected the increasing market share of light-duty trucks, which grew from about 30 percent of new vehicle sales in 1990 to 48 percent in 2004. Starting in 2005, the rate of VMT growth slowed while average new vehicle fuel economy began to increase. Average new vehicle fuel economy has improved almost every year since 2005, and the truck share has decreased to about 41 percent of new vehicles in model year 2014 (EPA 2015a).

Medium- and heavy-duty truck CO<sub>2</sub> emissions increased by 75 percent from 1990 to 2014. This increase was largely due to a substantial growth in medium- and heavy-duty truck VMT, which increased by 94 percent between 1990 and 2014.<sup>21</sup> Carbon dioxide from the domestic operation of commercial aircraft increased by 5 percent (5.3 MMT CO<sub>2</sub>) from 1990 to 2014.<sup>22</sup> Across all categories of aviation, excluding international bunkers, CO<sub>2</sub> emissions decreased by 20 percent (37.3 MMT CO<sub>2</sub>) between 1990 and 2014.<sup>23</sup> This includes a 56 percent (19.6 MMT CO<sub>2</sub>) decrease in CO<sub>2</sub> emissions from domestic military operations.

Transportation sources also produce CH<sub>4</sub> and N<sub>2</sub>O; these emissions are included in Table 3-13 and Table 3-14 and in the “Mobile Combustion” Section. Annex 3.2 presents total emissions from all transportation and mobile sources, including CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFCs.

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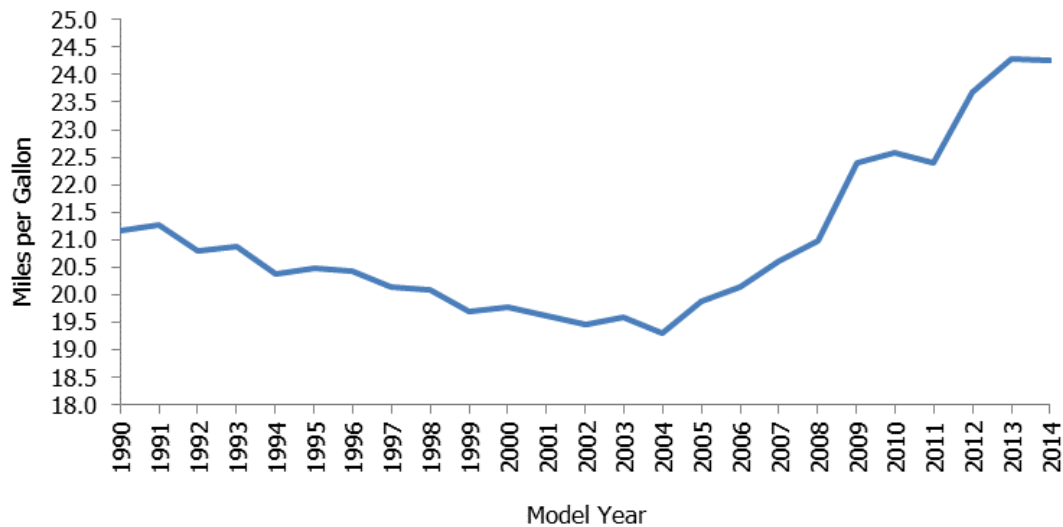
<sup>20</sup> Biofuel estimates are presented in the Energy chapter for informational purposes only, in line with IPCC methodological guidance and UNFCCC reporting obligations. Net carbon fluxes from changes in biogenic carbon reservoirs in croplands are accounted for in the estimates for Land Use, Land-Use Change, and Forestry (see Chapter 6). More information and additional analyses on biofuels are available at EPA’s “Renewable Fuels: Regulations & Standards;” See <<http://www.epa.gov/otaq/fuels/renewablefuels/regulations.htm>>.

<sup>21</sup> While FHWA data shows consistent growth in medium- and heavy-duty truck VMT over the 1990 to 2014 time period, part of the growth reflects a method change for estimating VMT starting in 2007. This change in methodology in FHWA’s VM-1 table resulted in large changes in VMT by vehicle class, thus leading to a shift in VMT and emissions among on-road vehicle classes in the 2007 to 2014 time period. During the time period prior to the method change (1990-2006), VMT for medium- and heavy-duty trucks increased by 51 percent.

<sup>22</sup> Commercial aircraft, as modeled in FAA’s AEDT, consists of passenger aircraft, cargo, and other chartered flights.

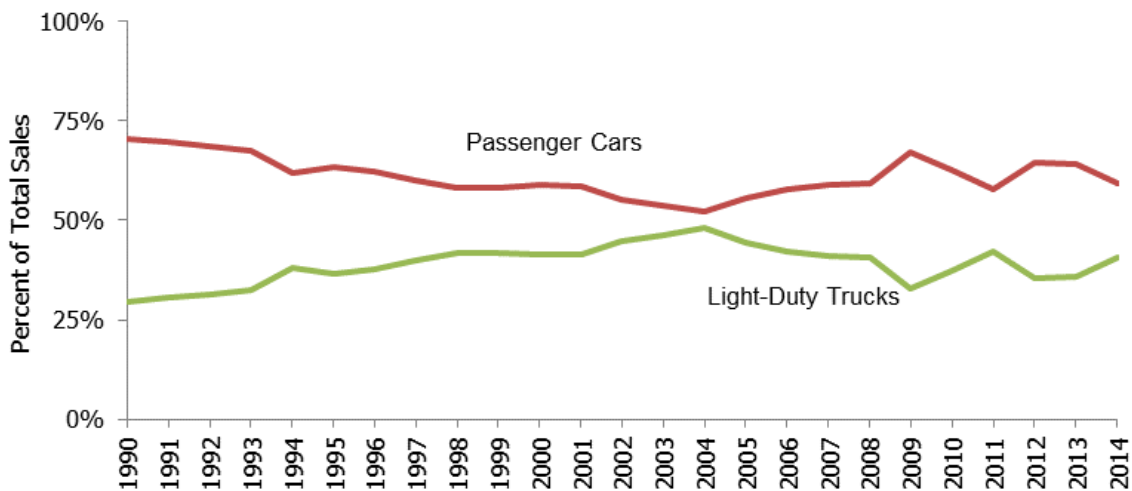
<sup>23</sup> Includes consumption of jet fuel and aviation gasoline. Does not include aircraft bunkers, which are not included in national emission totals, in line with IPCC methodological guidance and UNFCCC reporting obligations.

**Figure 3-11: Sales-Weighted Fuel Economy of New Passenger Cars and Light-Duty Trucks, 1990–2014 (miles/gallon)**



Source: EPA (2015)

**Figure 3-12: Sales of New Passenger Cars and Light-Duty Trucks, 1990–2014 (Percent)**



Source: EPA (2015)

**Table 3-12: CO<sub>2</sub> Emissions from Fossil Fuel Combustion in Transportation End-Use Sector (MMT CO<sub>2</sub> Eq.)**

Fuel/Vehicle Type	1990	2005	2010 <sup>a</sup>	2011	2012	2013	2014
<b>Gasoline<sup>b</sup></b>	<b>983.5</b>	<b>1,183.7</b>	<b>1,092.5</b>	<b>1,068.8</b>	<b>1,064.7</b>	<b>1,065.6</b>	<b>1,083.8</b>
Passenger Cars	621.4	655.9	738.2	732.8	731.4	731.4	733.5
Light-Duty Trucks	309.1	477.2	295.0	280.4	277.4	277.7	293.5

Medium- and Heavy-Duty Trucks <sup>c</sup>	38.7	34.8	42.3	38.9	38.7	39.5	40.0
Buses	0.3	0.4	0.7	0.7	0.8	0.8	0.9
Motorcycles	1.7	1.6	3.6	3.6	4.1	3.9	3.8
Recreational Boats <sup>d</sup>	12.2	13.9	12.6	12.4	12.3	12.3	12.2
<b>Distillate Fuel Oil (Diesel)<sup>b,e</sup></b>	<b>262.9</b>	<b>457.5</b>	<b>422.0</b>	<b>430.0</b>	<b>427.5</b>	<b>433.9</b>	<b>447.6</b>
Passenger Cars	7.9	4.2	3.7	4.1	4.1	4.1	4.1
Light-Duty Trucks	11.5	25.8	12.5	13.0	12.9	12.9	13.9
Medium- and Heavy-Duty Trucks <sup>c</sup>	190.5	360.2	342.7	344.4	344.4	350.0	361.3
Buses	8.0	10.6	13.5	14.4	15.4	15.5	16.6
Rail	35.5	45.5	38.6	40.4	39.5	40.1	41.7
Recreational Boats	2.0	3.2	3.6	3.6	3.7	3.7	3.8
Ships and Other Boats <sup>f</sup>	7.5	8.0	7.4	10.1	7.5	7.5	6.2
<i>International Bunker Fuels<sup>g</sup></i>	<i>11.7</i>	<i>9.4</i>	<i>9.5</i>	<i>7.9</i>	<i>6.8</i>	<i>5.6</i>	<i>6.1</i>
<b>Jet Fuel</b>	<b>184.2</b>	<b>189.3</b>	<b>151.5</b>	<b>146.6</b>	<b>143.4</b>	<b>147.1</b>	<b>148.6</b>
Commercial Aircraft <sup>h</sup>	109.9	132.7	113.3	114.6	113.3	114.3	115.2
Military Aircraft	35.0	19.4	13.6	11.6	12.1	11.0	15.4
General Aviation Aircraft	39.4	37.3	24.6	20.4	18.0	21.8	18.0
<i>International Bunker Fuels<sup>g</sup></i>	<i>38.0</i>	<i>60.1</i>	<i>61.0</i>	<i>64.8</i>	<i>64.5</i>	<i>65.7</i>	<i>69.4</i>
<i>International Bunker Fuels from Commercial Aviation</i>	<i>30.0</i>	<i>55.6</i>	<i>57.4</i>	<i>61.7</i>	<i>61.4</i>	<i>62.8</i>	<i>66.3</i>
<b>Aviation Gasoline</b>	<b>3.1</b>	<b>2.4</b>	<b>1.9</b>	<b>1.9</b>	<b>1.7</b>	<b>1.5</b>	<b>1.5</b>
General Aviation Aircraft	3.1	2.4	1.9	1.9	1.7	1.5	1.5
<b>Residual Fuel Oil</b>	<b>22.6</b>	<b>19.3</b>	<b>20.4</b>	<b>19.4</b>	<b>15.8</b>	<b>15.1</b>	<b>5.8</b>
Ships and Other Boats <sup>f</sup>	22.6	19.3	20.4	19.4	15.8	15.1	5.8
<i>International Bunker Fuels<sup>g</sup></i>	<i>53.7</i>	<i>43.6</i>	<i>46.5</i>	<i>38.9</i>	<i>34.5</i>	<i>28.5</i>	<i>27.7</i>
<b>Natural Gas</b>	<b>36.0</b>	<b>33.1</b>	<b>38.1</b>	<b>38.9</b>	<b>41.3</b>	<b>47.0</b>	<b>47.6</b>
Passenger Cars	+	+	+	+	+	+	+
Light-Duty Trucks	+	+	+	+	+	+	+
Buses	+	0.8	1.1	1.1	1.0	1.1	1.1
Pipeline <sup>i</sup>	36.0	32.2	37.1	37.8	40.3	45.9	46.5
<b>LPG</b>	<b>1.4</b>	<b>1.7</b>	<b>1.8</b>	<b>2.1</b>	<b>2.3</b>	<b>2.7</b>	<b>2.7</b>
Light-Duty Trucks	0.6	1.3	1.3	1.5	1.6	1.9	1.9
Medium- and Heavy-Duty Trucks <sup>c</sup>	0.8	0.4	0.6	0.6	0.7	0.8	0.8
Buses	+	+	+	+	+	+	+
<b>Electricity</b>	<b>3.0</b>	<b>4.7</b>	<b>4.5</b>	<b>4.3</b>	<b>3.9</b>	<b>4.0</b>	<b>4.1</b>
Rail	3.0	4.7	4.5	4.3	3.9	4.0	4.1
<b>Ethanol<sup>j</sup></b>	<b>4.1</b>	<b>22.4</b>	<b>71.3</b>	<b>71.5</b>	<b>71.5</b>	<b>73.4</b>	<b>74.8</b>
<b>Total</b>	<b>1,496.8</b>	<b>1,891.8</b>	<b>1,732.7</b>	<b>1,711.9</b>	<b>1,700.6</b>	<b>1,717.0</b>	<b>1,741.7</b>
<b>Total (Including Bunkers)<sup>g</sup></b>	<b>1,600.3</b>	<b>2,004.9</b>	<b>1,849.7</b>	<b>1,823.6</b>	<b>1,806.4</b>	<b>1,816.8</b>	<b>1,844.9</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

<sup>a</sup> In 2011 FHWA changed its methods for estimating vehicle miles traveled (VMT) and related data. These methodological changes included how vehicles are classified, moving from a system based on body-type to one that is based on wheelbase. These changes were first incorporated for the 1990 through 2010 Inventory and apply to the 2007 through 2014 time period. This resulted in large changes in VMT and fuel consumption data by vehicle class, thus leading to a shift in emissions among on-road vehicle classes.

<sup>b</sup> Gasoline and diesel highway vehicle fuel consumption estimates are based on data from FHWA Highway Statistics Table VM-1 and MF-27 (FHWA 1996 through 2015). These fuel consumption estimates are combined with estimates of fuel shares by vehicle type from DOE's TEDB Annex Tables A.1 through A.6 (DOE 1993 through 2015). TEDB data for 2014 has not been published yet, therefore 2013 data is used as a proxy.

<sup>c</sup> Includes medium- and heavy-duty trucks over 8,500 lbs.

<sup>d</sup> In 2015, EPA incorporated the NONROAD2008 model into MOVES2014. The current Inventory uses the NONROAD component of MOVES2014a for years 1999 through 2014. This update resulted in small changes (less than two percent) to the 1999 through 2013 time series for NONROAD fuel consumption due to differences in the gasoline and diesel default fuel densities used within the model iterations.

<sup>e</sup> Updates to the distillate fuel oil heat content data from EIA for years 1993 through 2014 resulted in changes to the time series for energy consumption and emissions compared to the previous Inventory.

<sup>f</sup> Note that large year over year fluctuations in emission estimates partially reflect nature of data collection for these sources.

<sup>g</sup> Official estimates exclude emissions from the combustion of both aviation and marine international bunker fuels; however, estimates including international bunker fuel-related emissions are presented for informational purposes.



<sup>h</sup> Commercial aircraft, as modeled in FAA's AEDT, consists of passenger aircraft, cargo, and other chartered flights.

<sup>i</sup> Pipelines reflect CO<sub>2</sub> emissions from natural gas powered pipelines transporting natural gas.

<sup>j</sup> Ethanol estimates are presented for informational purposes only. See Section 3.10 of this chapter and the estimates in Land Use, Land-Use Change, and Forestry (see Chapter 6), in line with IPCC methodological guidance and UNFCCC reporting obligations, for more information on ethanol.

Notes: This table does not include emissions from non-transportation mobile sources, such as agricultural equipment and construction/mining equipment; it also does not include emissions associated with electricity consumption by pipelines or lubricants used in transportation. In addition, this table does not include CO<sub>2</sub> emissions from U.S. Territories, since these are covered in a separate chapter of the Inventory. Totals may not sum due to independent rounding.

### *Mobile Fossil Fuel Combustion CH<sub>4</sub> and N<sub>2</sub>O Emissions*

Mobile combustion includes emissions of CH<sub>4</sub> and N<sub>2</sub>O from all transportation sources identified in the U.S.

Inventory with the exception of pipelines and electric locomotives;<sup>24</sup> mobile sources also include non-transportation sources such as construction/mining equipment, agricultural equipment, vehicles used off-road, and other sources (e.g., snowmobiles, lawnmowers, etc.).<sup>25</sup> Annex 3.2 includes a summary of all emissions from both transportation and mobile sources. Table 3-13 and Table 3-14 provide mobile fossil fuel CH<sub>4</sub> and N<sub>2</sub>O emission estimates in MMT CO<sub>2</sub> Eq.<sup>26</sup>

Mobile combustion was responsible for a small portion of national CH<sub>4</sub> emissions (0.3 percent) but was the fourth largest source of U.S. N<sub>2</sub>O emissions (4.0 percent). From 1990 to 2014, mobile source CH<sub>4</sub> emissions declined by 64 percent, to 2.0 MMT CO<sub>2</sub> Eq. (82 kt CH<sub>4</sub>), due largely to control technologies employed in on-road vehicles since the mid-1990s to reduce CO, NO<sub>x</sub>, NMVOC, and CH<sub>4</sub> emissions. Mobile source emissions of N<sub>2</sub>O decreased by 60 percent, to 16.3 MMT CO<sub>2</sub> Eq. (55 kt N<sub>2</sub>O). Earlier generation control technologies initially resulted in higher N<sub>2</sub>O emissions, causing a 28 percent increase in N<sub>2</sub>O emissions from mobile sources between 1990 and 1997. Improvements in later-generation emission control technologies have reduced N<sub>2</sub>O output, resulting in a 69 percent decrease in mobile source N<sub>2</sub>O emissions from 1997 to 2014 (Figure 3-13). Overall, CH<sub>4</sub> and N<sub>2</sub>O emissions were predominantly from gasoline-fueled passenger cars and light-duty trucks.

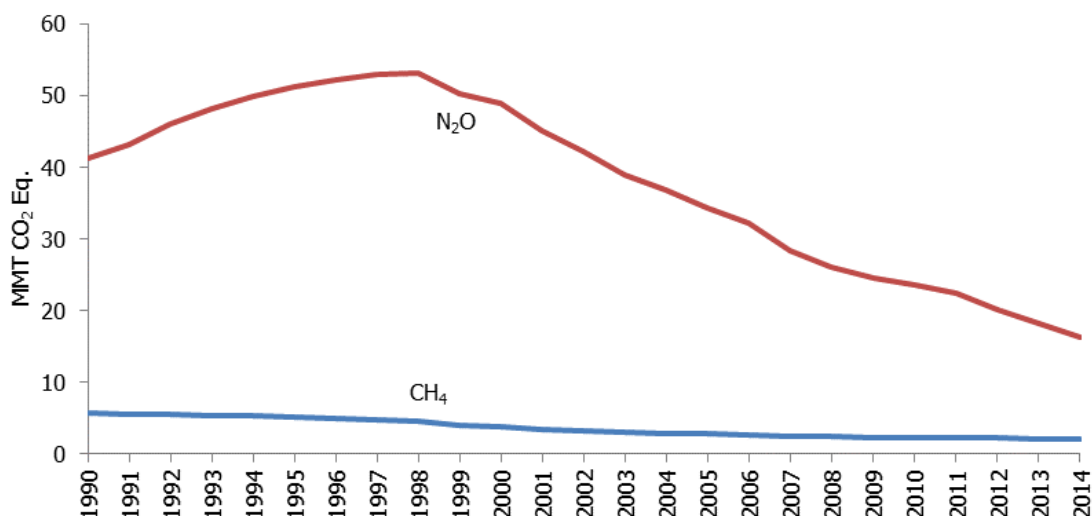
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<sup>24</sup> Emissions of CH<sub>4</sub> from natural gas systems are reported separately. More information on the methodology used to calculate these emissions are included in this chapter and Annex 3.4.

<sup>25</sup> See the methodology sub-sections of the CO<sub>2</sub> from Fossil Fuel Combustion and CH<sub>4</sub> and N<sub>2</sub>O from Mobile Combustion sections of this chapter. Note that N<sub>2</sub>O and CH<sub>4</sub> emissions are reported using different categories than CO<sub>2</sub>. CO<sub>2</sub> emissions are reported by end-use sector (Transportation, Industrial, Commercial, Residential, U.S. Territories), and generally adhere to a top-down approach to estimating emissions. CO<sub>2</sub> emissions from non-transportation sources (e.g., lawn and garden equipment, farm equipment, construction equipment) are allocated to their respective end-use sector (i.e., construction equipment CO<sub>2</sub> emissions are included in the Commercial end-use sector instead of the Transportation end-use sector). CH<sub>4</sub> and N<sub>2</sub>O emissions are reported using the "Mobile Combustion" category, which includes non-transportation mobile sources. CH<sub>4</sub> and N<sub>2</sub>O emissions estimates are bottom-up estimates, based on total activity (fuel use, VMT) and emissions factors by source and technology type. These reporting schemes are in accordance with IPCC guidance. For informational purposes only, CO<sub>2</sub> emissions from non-transportation mobile sources are presented separately from their overall end-use sector in Annex 3.2.

<sup>26</sup> See Annex 3.2 for a complete time series of emission estimates for 1990 through 2014.

**Figure 3-13: Mobile Source CH<sub>4</sub> and N<sub>2</sub>O Emissions (MMT CO<sub>2</sub> Eq.)**



**Table 3-13: CH<sub>4</sub> Emissions from Mobile Combustion (MMT CO<sub>2</sub> Eq.)**

Fuel Type/Vehicle Type <sup>a</sup>	1990	2005	2010	2011	2012	2013	2014
<b>Gasoline On-Road<sup>b</sup></b>	<b>5.2</b>	<b>2.2</b>	<b>1.7</b>	<b>1.6</b>	<b>1.5</b>	<b>1.5</b>	<b>1.4</b>
Passenger Cars	3.2	1.2	1.2	1.2	1.1	1.0	1.0
Light-Duty Trucks	1.7	0.8	0.4	0.4	0.3	0.3	0.3
Medium- and Heavy-Duty Trucks and Buses	0.3	0.1	0.1	0.1	0.1	0.1	0.1
Motorcycles	+	+	+	+	+	+	+
<b>Diesel On-Road<sup>b</sup></b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>
Passenger Cars	+	+	+	+	+	+	+
Light-Duty Trucks	+	+	+	+	+	+	+
Medium- and Heavy-Duty Trucks and Buses	+	+	+	+	+	+	+
<b>Alternative Fuel On-Road<sup>c</sup></b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>+</b>
<b>Non-Road<sup>d</sup></b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
Ships and Boats	+	+	+	+	+	+	+
Rail <sup>e</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Aircraft	0.1	0.1	+	+	+	+	+
Agricultural Equipment <sup>f</sup>	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Construction/Mining Equipment <sup>g</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other <sup>h</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<b>Total</b>	<b>5.6</b>	<b>2.7</b>	<b>2.3</b>	<b>2.2</b>	<b>2.2</b>	<b>2.1</b>	<b>2.0</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

<sup>a</sup> See Annex 3.2 for definitions of on-road vehicle types.

<sup>b</sup> Gasoline and diesel highway vehicle mileage are based on data from FHWA Highway Statistics Table VM-1 (FHWA 1996 through 2015). These mileage consumption estimates are combined with estimates of fuel shares by vehicle type from DOE's TEDB Annex Tables A.1 through A.6 (DOE 1993 through 2015). TEDB data for 2014 has not been published yet, therefore 2013 data is used as a proxy.

<sup>c</sup> In 2015, EIA changed its methods for estimating AFV fuel consumption. These methodological changes included how vehicle counts are estimated, moving from estimates based on modeling to one that is based on survey data. EIA now publishes data about fuel use and number of vehicles for only four types of AFV fleets: federal government, state government, transit agencies, and fuel providers. These changes were first incorporated in the current inventory and apply to the 1990 through 2014 time period. This resulted in large reductions in AFV VMT, thus leading to a shift in VMT to conventional on-road vehicle classes.

<sup>d</sup>In 2015, EPA incorporated the NONROAD2008 model into MOVES2014. The current Inventory uses the NONROAD component of MOVES2014a for years 1999 through 2014. This update resulted in small changes (less than 2 percent) to the 1999 through 2013 time series for NONROAD fuel consumption due to differences in the gasoline and diesel default fuel densities used within the model iterations.

<sup>e</sup>Rail emissions do not include emissions from electric powered locomotives. Class II and Class III diesel consumption data for 2014 is not available yet, therefore 2013 data is used as a proxy.

<sup>f</sup>Includes equipment, such as tractors and combines, as well as fuel consumption from trucks that are used off-road in agriculture.

<sup>g</sup>Includes equipment, such as cranes, dumpers, and excavators, as well as fuel consumption from trucks that are used off-road in construction.

<sup>h</sup>“Other” includes snowmobiles and other recreational equipment, logging equipment, lawn and garden equipment, railroad equipment, airport equipment, commercial equipment, and industrial equipment, as well as fuel consumption from trucks that are used off-road for commercial/industrial purposes.

Notes: In 2011, FHWA changed its methods for estimating vehicle miles traveled (VMT) and related data. These methodological changes included how vehicles are classified, moving from a system based on body-type to one that is based on wheelbase. These changes were first incorporated for the 1990 through 2010 Inventory and apply to the 2007 through 2014 time period. This resulted in large changes in VMT and fuel consumption data by vehicle class, thus leading to a shift in emissions among on-road vehicle classes. Totals may not sum due to independent rounding.

**Table 3-14: N<sub>2</sub>O Emissions from Mobile Combustion (MMT CO<sub>2</sub> Eq.)**

Fuel Type/Vehicle Type <sup>a</sup>	1990	2005	2010	2011	2012	2013	2014
<b>Gasoline On-Road<sup>b</sup></b>	<b>37.5</b>	<b>29.9</b>	<b>19.2</b>	<b>18.0</b>	<b>15.7</b>	<b>13.8</b>	<b>12.1</b>
Passenger Cars	24.1	15.9	12.9	12.3	10.7	9.3	7.9
Light-Duty Trucks	12.8	13.2	5.5	5.0	4.4	3.9	3.6
Medium- and Heavy-Duty Trucks and Buses	0.5	0.8	0.8	0.7	0.6	0.6	0.5
Motorcycles	+	+	+	+	+	+	+
<b>Diesel On-Road<sup>b</sup></b>	<b>0.2</b>	<b>0.3</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>
Passenger Cars	+	+	+	+	+	+	+
Light-Duty Trucks	+	+	+	+	+	+	+
Medium- and Heavy-Duty Trucks and Buses	0.2	0.3	0.4	0.4	0.4	0.4	0.4
<b>Alternative Fuel On-Road<sup>c</sup></b>	<b>+</b>	<b>+</b>	<b>+</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
<b>Non-Road<sup>d</sup></b>	<b>3.5</b>	<b>4.1</b>	<b>4.0</b>	<b>4.0</b>	<b>3.9</b>	<b>3.9</b>	<b>3.8</b>
Ships and Boats	0.6	0.6	0.8	0.8	0.7	0.7	0.5
Rail <sup>e</sup>	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Aircraft	1.7	1.8	1.4	1.4	1.3	1.4	1.4
Agricultural Equipment <sup>f</sup>	0.2	0.4	0.4	0.4	0.4	0.4	0.4
Construction/Mining Equipment <sup>g</sup>	0.3	0.5	0.6	0.6	0.6	0.6	0.6
Other <sup>h</sup>	0.4	0.6	0.6	0.6	0.6	0.6	0.6
<b>Total</b>	<b>41.2</b>	<b>34.4</b>	<b>23.6</b>	<b>22.4</b>	<b>20.0</b>	<b>18.2</b>	<b>16.3</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

<sup>a</sup> See Annex 3.2 for definitions of on-road vehicle types.

<sup>b</sup> Gasoline and diesel highway vehicle mileage are based on data from FHWA Highway Statistics Table VM-1 (FHWA 1996 through 2015). These mileage consumption estimates are combined with estimates of fuel shares by vehicle type from DOE's TEDB Annex Tables A.1 through A.6 (DOE 1993 through 2015). TEDB data for 2014 has not been published yet, therefore 2013 data is used as a proxy.

<sup>c</sup> In 2015, EIA changed its methods for estimating AFV fuel consumption. These methodological changes included how vehicle counts are estimated, moving from estimates based on modeling to one that is based on survey data. EIA now publishes data about fuel use and number of vehicles for only four types of AFV fleets: federal government, state government, transit agencies, and fuel providers. These changes were first incorporated in the current Inventory and apply to the 1990 through 2014 time period. This resulted in large reductions in AFV VMT, thus leading to a shift in VMT to conventional on-road vehicle classes.

<sup>d</sup> In 2015, EPA incorporated the NONROAD2008 model into MOVES2014. The current Inventory uses the NONROAD component of MOVES2014a for years 1999 through 2014. This update resulted in small changes (less than two percent) to the 1999 through 2013 time series for NONROAD fuel consumption due to differences in the gasoline and diesel default fuel densities used within the model iterations.

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<sup>e</sup> Rail emissions do not include emissions from electric powered locomotives. Class II and Class III diesel consumption data for 2014 is not available yet, therefore 2013 data is used as a proxy.

<sup>f</sup> Includes equipment, such as tractors and combines, as well as fuel consumption from trucks that are used off-road in agriculture.

<sup>g</sup> Includes equipment, such as cranes, dumpers, and excavators, as well as fuel consumption from trucks that are used off-road in construction.

<sup>h</sup> "Other" includes snowmobiles and other recreational equipment, logging equipment, lawn and garden equipment, railroad equipment, airport equipment, commercial equipment, and industrial equipment, as well as fuel consumption from trucks that are used off-road for commercial/industrial purposes.

Notes: In 2011, FHWA changed its methods for estimating vehicle miles traveled (VMT) and related data. These methodological changes included how vehicles are classified, moving from a system based on body type to one that is based on wheelbase. These changes were first incorporated for the 1990 through 2010 Inventory and apply to the 2007 through 2014 time period. This resulted in large changes in VMT and fuel consumption data by vehicle class, thus leading to a shift in emissions among on-road vehicle classes. Totals may not sum due to independent rounding.

## CO<sub>2</sub> from Fossil Fuel Combustion

### Methodology

The methodology used by the United States for estimating CO<sub>2</sub> emissions from fossil fuel combustion is conceptually similar to the approach recommended by the IPCC for countries that intend to develop detailed, sectoral-based emission estimates in line with a Tier 2 method in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (IPCC 2006).<sup>27</sup> The use of the most recently published calculation methodologies by the IPCC, as contained in the *2006 IPCC Guidelines*, is considered to improve the rigor and accuracy of this Inventory and is fully in line with IPCC Good Practice Guidance. A detailed description of the U.S. methodology is presented in Annex 2.1, and is characterized by the following steps:

1. *Determine total fuel consumption by fuel type and sector.* Total fossil fuel consumption for each year is estimated by aggregating consumption data by end-use sector (e.g., commercial, industrial, etc.), primary fuel type (e.g., coal, petroleum, gas), and secondary fuel category (e.g., motor gasoline, distillate fuel oil, etc.). Fuel consumption data for the United States were obtained directly from the EIA of the U.S. Department of Energy (DOE), primarily from the Monthly Energy Review and published supplemental tables on petroleum product detail (EIA 2016). The EIA does not include territories in its national energy statistics, so fuel consumption data for territories were collected separately from EIA's International Energy Statistics (EIA 2014) and Jacobs (2010).<sup>28</sup>

For consistency of reporting, the IPCC has recommended that countries report energy data using the International Energy Agency (IEA) reporting convention and/or IEA data. Data in the IEA format are presented "top down"—that is, energy consumption for fuel types and categories are estimated from energy production data (accounting for imports, exports, stock changes, and losses). The resulting quantities are referred to as "apparent consumption." The data collected in the United States by EIA on an annual basis and used in this Inventory are predominantly from mid-stream or conversion energy consumers such as refiners and electric power generators. These annual surveys are supplemented with end-use energy consumption surveys, such as the Manufacturing Energy Consumption Survey, that are conducted on a periodic basis (every four years). These consumption data sets help inform the annual surveys to arrive at the national total and sectoral breakdowns for that total.<sup>29</sup>

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<sup>27</sup> The IPCC Tier 3B methodology is used for estimating emissions from commercial aircraft.

<sup>28</sup> Fuel consumption by U.S. Territories (i.e., American Samoa, Guam, Puerto Rico, U.S. Virgin Islands, Wake Island, and other U.S. Pacific Islands) is included in this report and contributed total emissions of 41.2 MMT CO<sub>2</sub> Eq. in 2014.

<sup>29</sup> See IPCC Reference Approach for estimating CO<sub>2</sub> emissions from fossil fuel combustion in Annex 4 for a comparison of U.S. estimates using top-down and bottom-up approaches.

Also, note that U.S. fossil fuel energy statistics are generally presented using gross calorific values (GCV) (i.e., higher heating values). Fuel consumption activity data presented here have not been adjusted to correspond to international standards, which are to report energy statistics in terms of net calorific values (NCV) (i.e., lower heating values).<sup>30</sup>

2. *Subtract uses accounted for in the Industrial Processes and Product Use chapter.* Portions of the fuel consumption data for seven fuel categories—coking coal, distillate fuel, industrial other coal, petroleum coke, natural gas, residual fuel oil, and other oil—were reallocated to the Industrial Processes and Product Use chapter, as they were consumed during non-energy related industrial activity. To make these adjustments, additional data were collected from AISI (2004 through 2013), Coffeyville (2014), U.S. Census Bureau (2011), EIA (2016), USGS (1991 through 2011), USGS (1994 through 2011), USGS (1995, 1998, 2000 through 2002), USGS (2007), USGS (2009), USGS (2010), USGS (2011), USGS (1991 through 2010a), USGS (1991 through 2010b), USGS (2012a) and USGS (2012b).<sup>31</sup>
3. *Adjust for conversion of fuels and exports of CO<sub>2</sub>.* Fossil fuel consumption estimates are adjusted downward to exclude fuels created from other fossil fuels and exports of CO<sub>2</sub>.<sup>32</sup> Synthetic natural gas is created from industrial coal, and is currently included in EIA statistics for both coal and natural gas. Therefore, synthetic natural gas is subtracted from energy consumption statistics.<sup>33</sup> Since October 2000, the Dakota Gasification Plant has been exporting CO<sub>2</sub> to Canada by pipeline. Since this CO<sub>2</sub> is not emitted to the atmosphere in the United States, energy used to produce this CO<sub>2</sub> is subtracted from energy consumption statistics. To make these adjustments, additional data for ethanol were collected from EIA (2015), data for synthetic natural gas were collected from EIA (2014), and data for CO<sub>2</sub> exports were collected from the Eastman Gasification Services Company (2011), Dakota Gasification Company (2006), Fitzpatrick (2002), Erickson (2003), EIA (2008) and DOE (2012).
4. *Adjust Sectoral Allocation of Distillate Fuel Oil and Motor Gasoline.* EPA had conducted a separate bottom-up analysis of transportation fuel consumption based on data from the Federal Highway Administration that indicated that the amount of distillate and motor gasoline consumption allocated to the transportation sector in the EIA statistics should be adjusted. Therefore, for these estimates, the transportation sector's distillate fuel and motor gasoline consumption was adjusted to match the value obtained from the bottom-up analysis. As the total distillate and motor gasoline consumption estimate from EIA are considered to be accurate at the national level, the distillate and motor gasoline consumption totals for the residential, commercial, and industrial sectors were adjusted proportionately. The data sources used in the bottom-up analysis of transportation fuel consumption include AAR (2008 through 2015), Benson (2002 through 2004), DOE (1993 through 2015), EIA (2007), EIA (1991 through 2015), EPA (2015c), and FHWA (1996 through 2015).<sup>34</sup>

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<sup>30</sup> A crude convention to convert between gross and net calorific values is to multiply the heat content of solid and liquid fossil fuels by 0.95 and gaseous fuels by 0.9 to account for the water content of the fuels. Biomass-based fuels in U.S. energy statistics, however, are generally presented using net calorific values.

<sup>31</sup> See sections on Iron and Steel Production and Metallurgical Coke Production, Ammonia Production and Urea Consumption, Petrochemical Production, Titanium Dioxide Production, Ferroalloy Production, Aluminum Production, and Silicon Carbide Production and Consumption in the Industrial Processes and Product Use chapter.

<sup>32</sup> Energy statistics from EIA (2015) are already adjusted downward to account for ethanol added to motor gasoline, and biogas in natural gas.

<sup>33</sup> These adjustments are explained in greater detail in Annex 2.1.

<sup>34</sup> The source of highway vehicle VMT and fuel consumption is FHWA's VM-1 table. In 2011, FHWA changed its methods for estimating data in the VM-1 table. These methodological changes included how vehicles are classified, moving from a system based on body type to one that is based on wheelbase. These changes were first incorporated for the 1990 to 2010 Inventory and apply to the 2007 to 2014 time period. This resulted in large changes in VMT and fuel consumption data by vehicle class, thus leading to a shift in emissions among on-road vehicle classes. For example, the category "Passenger Cars" has been replaced by "Light-duty Vehicles-Short Wheelbase" and "Other 2 axle-4 Tire Vehicles" has been replaced by "Light-duty Vehicles, Long Wheelbase." This change in vehicle classification has moved some smaller trucks and sport utility vehicles from the light truck category to the passenger vehicle category in this emission inventory. These changes are reflected in a large drop in light-truck emissions between 2006 and 2007.

5. *Adjust for fuels consumed for non-energy uses.* U.S. aggregate energy statistics include consumption of fossil fuels for non-energy purposes. These are fossil fuels that are manufactured into plastics, asphalt, lubricants, or other products. Depending on the end-use, this can result in storage of some or all of the C contained in the fuel for a period of time. As the emission pathways of C used for non-energy purposes are vastly different than fuel combustion (since the C in these fuels ends up in products instead of being combusted), these emissions are estimated separately in the Carbon Emitted and Stored in Products from Non-Energy Uses of Fossil Fuels section in this chapter. Therefore, the amount of fuels used for non-energy purposes was subtracted from total fuel consumption. Data on non-fuel consumption was provided by EIA (2016).
6. *Subtract consumption of international bunker fuels.* According to the UNFCCC reporting guidelines emissions from international transport activities, or bunker fuels, should not be included in national totals. U.S. energy consumption statistics include these bunker fuels (e.g., distillate fuel oil, residual fuel oil, and jet fuel) as part of consumption by the transportation end-use sector, however, so emissions from international transport activities were calculated separately following the same procedures used for emissions from consumption of all fossil fuels (i.e., estimation of consumption, and determination of C content).<sup>35</sup> The Office of the Under Secretary of Defense (Installations and Environment) and the Defense Logistics Agency Energy (DLA Energy) of the U.S. Department of Defense (DoD) (DLA Energy 2015) supplied data on military jet fuel and marine fuel use. Commercial jet fuel use was obtained from FAA (2016); residual and distillate fuel use for civilian marine bunkers was obtained from DOC (1991 through 2014) for 1990 through 2001 and 2007 through 2014, and DHS (2008) for 2003 through 2006. Consumption of these fuels was subtracted from the corresponding fuels in the transportation end-use sector. Estimates of international bunker fuel emissions for the United States are discussed in detail in the International Bunker Fuels section of this chapter.
7. *Determine the total C content of fuels consumed.* Total C was estimated by multiplying the amount of fuel consumed by the amount of C in each fuel. This total C estimate defines the maximum amount of C that could potentially be released to the atmosphere if all of the C in each fuel was converted to CO<sub>2</sub>. The C content coefficients used by the United States were obtained from EIA's *Emissions of Greenhouse Gases in the United States 2008* (EIA 2009a), and an EPA analysis of C content coefficients used in the GHGRP (EPA 2010). A discussion of the methodology used to develop the C content coefficients are presented in Annexes 2.1 and 2.2.
8. *Estimate CO<sub>2</sub> Emissions.* Total CO<sub>2</sub> emissions are the product of the adjusted energy consumption (from the previous methodology steps 1 through 6), the C content of the fuels consumed, and the fraction of C that is oxidized. The fraction oxidized was assumed to be 100 percent for petroleum, coal, and natural gas based on guidance in IPCC (2006) (see Annex 2.1).
9. *Allocate transportation emissions by vehicle type.* This report provides a more detailed accounting of emissions from transportation because it is such a large consumer of fossil fuels in the United States. For fuel types other than jet fuel, fuel consumption data by vehicle type and transportation mode were used to allocate emissions by fuel type calculated for the transportation end-use sector. Heat contents and densities were obtained from EIA (2016) and USAF (1998).<sup>36</sup>
  - For on-road vehicles, annual estimates of combined motor gasoline and diesel fuel consumption by vehicle category were obtained from FHWA (1996 through 2014); for each vehicle category, the percent gasoline, diesel, and other (e.g., CNG, LPG) fuel consumption are estimated using data from DOE (1993 through 2013).
  - For non-road vehicles, activity data were obtained from AAR (2008 through 2015), APTA (2007 through 2015), APTA (2006), BEA (2016), Benson (2002 through 2004), DOE (1993 through 2015), DLA Energy (2015), DOC (1991 through 2015), DOT (1991 through 2015), EIA (2009a), EIA (2016), EIA (2013), EIA (1991 through 2015), EPA (2015c), and Gaffney (2007).

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<sup>35</sup> See International Bunker Fuels section in this chapter for a more detailed discussion.

<sup>36</sup> For a more detailed description of the data sources used for the analysis of the transportation end use sector see the Mobile Combustion (excluding CO<sub>2</sub>) and International Bunker Fuels sections of the Energy chapter, Annex 3.2, and Annex 3.8.

- For jet fuel used by aircraft, CO<sub>2</sub> emissions from commercial aircraft were developed by the U.S. Federal Aviation Administration (FAA) using a Tier 3B methodology, consistent IPCC (2006) (see Annex 3.3). Carbon dioxide emissions from other aircraft were calculated directly based on reported consumption of fuel as reported by EIA. Allocation to domestic military uses was made using DoD data (see Annex 3.8). General aviation jet fuel consumption is calculated as the remainder of total jet fuel use (as determined by EIA) nets all other jet fuel use as determined by FAA and DoD. For more information, see Annex 3.2.

#### Box 3-4: Uses of Greenhouse Gas Reporting Program Data and Improvements in Reporting Emissions from Industrial Sector Fossil Fuel Combustion

As described in the calculation methodology, total fossil fuel consumption for each year is based on aggregated end-use sector consumption published by the EIA. The availability of facility-level combustion emissions through EPA's Greenhouse Gas Reporting Program (GHGRP) has provided an opportunity to better characterize the industrial sector's energy consumption and emissions in the United States, through a disaggregation of EIA's industrial sector fuel consumption data from select industries.

For EPA's GHGRP 2010, 2011, 2012, 2013, and 2014 reporting years, facility-level fossil fuel combustion emissions reported through the GHGRP were categorized and distributed to specific industry types by utilizing facility-reported NAICS codes (as published by the U.S. Census Bureau). As noted previously in this report, the definitions and provisions for reporting fuel types in EPA's GHGRP include some differences from the Inventory's use of EIA national fuel statistics to meet the UNFCCC reporting guidelines. The IPCC has provided guidance on aligning facility-level reported fuels and fuel types published in national energy statistics, which guided this exercise.<sup>37</sup>

This year's effort represents an attempt to align, reconcile, and coordinate the facility-level reporting of fossil fuel combustion emissions under EPA's GHGRP with the national-level approach presented in this report. Consistent with recommendations for reporting the Inventory to the UNFCCC, progress was made on certain fuel types for specific industries and has been included in the Common Reporting Format (CRF) tables that are submitted to the UNFCCC along with this report.<sup>38</sup> For the current exercise, the efforts in reconciling fuels focused on standard, common fuel types (e.g., natural gas, distillate fuel oil, etc.) where the fuels in EIA's national statistics aligned well with facility-level GHGRP data. For these reasons, the current information presented in the CRF tables should be viewed as an initial attempt at this exercise. Additional efforts will be made for future Inventory reports to improve the mapping of fuel types, and examine ways to reconcile and coordinate any differences between facility-level data and national statistics. Additionally, this year's analysis expanded this effort through the full time series presented in the CRF tables. Analyses were conducted linking GHGRP facility-level reporting with the information published by EIA in its MECS data in order to disaggregate the full 1990 through 2014 time series in the CRF tables. It is believed that the current analysis has led to improvements in the presentation of data in the Inventory, but further work will be conducted, and future improvements will be realized in subsequent Inventory reports.

Additionally, to assist in the disaggregation of industrial fuel consumption, EIA will now synthesize energy consumption data using the same procedure as is used for the last historical (benchmark) year of the Annual Energy Outlook (AEO). This procedure reorganizes the most recent data from the Manufacturing Energy Consumption Survey (MECS) (conducted every four years) into the nominal data submission year using the same energy-economy integrated model used to produce the AEO projections, the National Energy Modeling System (NEMS). EIA believes this "nowcasting" technique provides an appropriate estimate of energy consumption for the CRF.

To address gaps in the time series, EIA performs a NEMS model projection, using the MECS baseline sub-sector energy consumption. The NEMS model accounts for changes in factors that influence industrial sector energy consumption, and has access to data which may be more recent than MECS, such as industrial sub-sector macro industrial output (i.e., shipments) and fuel prices. By evaluating the impact of these factors on industrial subsector

<sup>37</sup> See Section 4 "Use of Facility-Level Data in Good Practice National Greenhouse Gas Inventories" of the IPCC meeting report, and specifically the section on using facility-level data in conjunction with energy data, at <[http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1008\\_Model\\_and\\_Facility\\_Level\\_Data\\_Report.pdf](http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1008_Model_and_Facility_Level_Data_Report.pdf)>.

<sup>38</sup> See <<http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>>.

energy consumption, NEMS can anticipate changes to the energy shares occurring post-MECS and can provide a way to appropriately disaggregate the energy-related emissions data into the CRF.

While the fuel consumption values for the various manufacturing sub-sectors are not directly surveyed for all years, they represent EIA's best estimate of historical consumption values for non-MECS years. Moreover, as an integral part of each AEO publication, this synthetic data series is likely to be maintained consistent with all available EIA and non-EIA data sources even as the underlying data sources evolve for both manufacturing and non-manufacturing industries alike.

Other sectors' fuel consumption (commercial, residential, transportation) will be benchmarked with the latest aggregate values from the Monthly Energy Review.<sup>39</sup> EIA will work with EPA to back cast these values to 1990.

### Box 3-5: Carbon Intensity of U.S. Energy Consumption

Fossil fuels are the dominant source of energy in the United States, and CO<sub>2</sub> is the dominant greenhouse gas emitted as a product from their combustion. Energy-related CO<sub>2</sub> emissions are impacted by not only lower levels of energy consumption but also by lowering the C intensity of the energy sources employed (e.g., fuel switching from coal to natural gas). The amount of C emitted from the combustion of fossil fuels is dependent upon the C content of the fuel and the fraction of that C that is oxidized. Fossil fuels vary in their average C content, ranging from about 53 MMT CO<sub>2</sub> Eq./Qbtu for natural gas to upwards of 95 MMT CO<sub>2</sub> Eq./Qbtu for coal and petroleum coke.<sup>40</sup> In general, the C content per unit of energy of fossil fuels is the highest for coal products, followed by petroleum, and then natural gas. The overall C intensity of the U.S. economy is thus dependent upon the quantity and combination of fuels and other energy sources employed to meet demand.

Table 3-15 provides a time series of the C intensity for each sector of the U.S. economy. The time series incorporates only the energy consumed from the direct combustion of fossil fuels in each sector. For the purposes of following reporting guidelines and maintaining the focus of this section, renewable energy and nuclear electricity and consumption are not included in the totals shown in Table 3-15 in order to focus attention on fossil fuel combustion as detailed in this chapter. For example, the C intensity for the residential sector does not include the energy from or emissions related to the consumption of electricity for lighting. Looking only at this direct consumption of fossil fuels, the residential sector exhibited the lowest C intensity, which is related to the large percentage of its energy derived from natural gas for heating. The C intensity of the commercial sector has predominantly declined since 1990 as commercial businesses shift away from petroleum to natural gas. The industrial sector was more dependent on petroleum and coal than either the residential or commercial sectors, and thus had higher C intensities over this period. The C intensity of the transportation sector was closely related to the C content of petroleum products (e.g., motor gasoline and jet fuel, both around 70 MMT CO<sub>2</sub> Eq./EJ), which were the primary sources of energy. Lastly, the electricity generation sector had the highest C intensity due to its heavy reliance on coal for generating electricity.

**Table 3-15: Carbon Intensity from Direct Fossil Fuel Combustion by Sector (MMT CO<sub>2</sub> Eq./Qbtu)**

Sector	1990	2005	2010	2011	2012	2013	2014
Residential <sup>a</sup>	57.4	56.6	55.8	55.7	55.5	55.3	55.4
Commercial <sup>a</sup>	59.1	57.5	56.8	56.6	56.1	55.8	55.8
Industrial <sup>a</sup>	64.3	64.3	62.9	62.4	62.0	61.8	61.5
Transportation <sup>a</sup>	71.1	71.4	71.5	71.5	71.5	71.4	71.4
Electricity Generation <sup>b</sup>	87.3	85.8	83.5	82.9	79.9	81.3	81.3
U.S. Territories <sup>c</sup>	73.0	73.4	73.1	73.1	72.4	72.1	71.6
<b>All Sectors<sup>c</sup></b>	<b>73.0</b>	<b>73.5</b>	<b>72.4</b>	<b>72.0</b>	<b>70.9</b>	<b>70.9</b>	<b>70.7</b>

<sup>a</sup> Does not include electricity or renewable energy consumption.

<sup>39</sup> See <<http://www.eia.gov/totalenergy/data/monthly/>>.

<sup>40</sup> One exajoule (EJ) is equal to 10<sup>18</sup> joules or 0.9478 Qbtu.



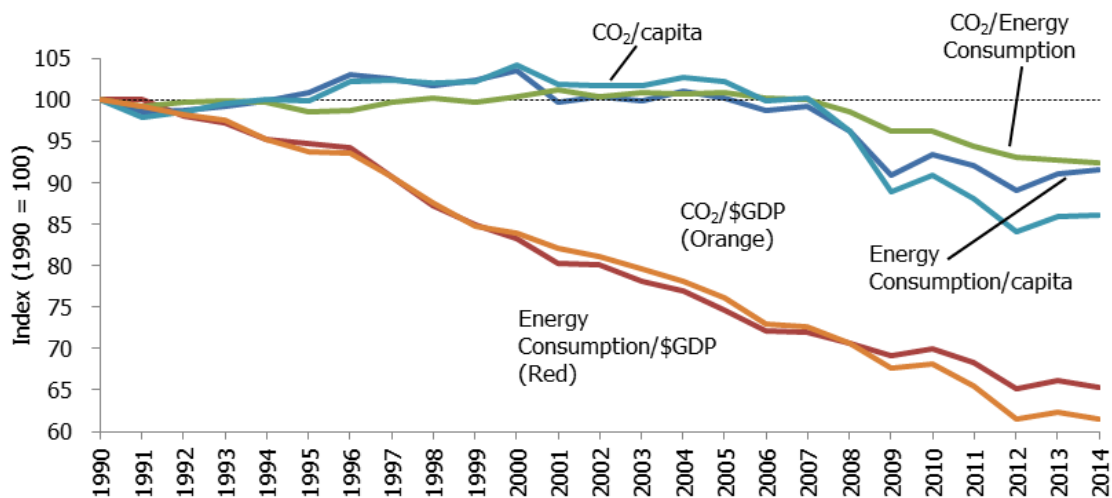
<sup>b</sup> Does not include electricity produced using nuclear or renewable energy.

<sup>c</sup> Does not include nuclear or renewable energy consumption.

Note: Excludes non-energy fuel use emissions and consumption.

Over the twenty-five-year period of 1990 through 2014, the C intensity of U.S. energy consumption has been fairly constant, as the proportion of fossil fuels used by the individual sectors has not changed significantly. Per capita energy consumption fluctuated little from 1990 to 2007, but in 2014 was approximately 8.5 percent below levels in 1990 (see Figure 3-14). To differentiate these estimates from those of Table 3-15, the C intensity trend shown in Figure 3-14 and described below includes nuclear and renewable energy EIA data to provide a comprehensive economy-wide picture of energy consumption. Due to a general shift from a manufacturing-based economy to a service-based economy, as well as overall increases in efficiency, energy consumption and energy-related CO<sub>2</sub> emissions per dollar of gross domestic product (GDP) have both declined since 1990 (BEA 2016).

**Figure 3-14: U.S. Energy Consumption and Energy-Related CO<sub>2</sub> Emissions Per Capita and Per Dollar GDP**



C intensity estimates were developed using nuclear and renewable energy data from EIA (2016), EPA (2010a), and fossil fuel consumption data as discussed above and presented in Annex 2.1.

## Uncertainty and Time-Series Consistency

For estimates of CO<sub>2</sub> from fossil fuel combustion, the amount of CO<sub>2</sub> emitted is directly related to the amount of fuel consumed, the fraction of the fuel that is oxidized, and the carbon content of the fuel. Therefore, a careful accounting of fossil fuel consumption by fuel type, average carbon contents of fossil fuels consumed, and production of fossil fuel-based products with long-term carbon storage should yield an accurate estimate of CO<sub>2</sub> emissions.

Nevertheless, there are uncertainties in the consumption data, carbon content of fuels and products, and carbon oxidation efficiencies. For example, given the same primary fuel type (e.g., coal, petroleum, or natural gas), the amount of carbon contained in the fuel per unit of useful energy can vary. For the United States, however, the impact of these uncertainties on overall CO<sub>2</sub> emission estimates is believed to be relatively small. See, for example, Marland and Pippin (1990).

Although statistics of total fossil fuel and other energy consumption are relatively accurate, the allocation of this consumption to individual end-use sectors (i.e., residential, commercial, industrial, and transportation) is less certain. For example, for some fuels the sectoral allocations are based on price rates (i.e., tariffs), but a commercial establishment may be able to negotiate an industrial rate or a small industrial establishment may end up paying an industrial rate, leading to a misallocation of emissions. Also, the deregulation of the natural gas industry and the

more recent deregulation of the electric power industry have likely led to some minor problems in collecting accurate energy statistics as firms in these industries have undergone significant restructuring.

To calculate the total CO<sub>2</sub> emission estimate from energy-related fossil fuel combustion, the amount of fuel used in these non-energy production processes were subtracted from the total fossil fuel consumption. The amount of CO<sub>2</sub> emissions resulting from non-energy related fossil fuel use has been calculated separately and reported in the Carbon Emitted from Non-Energy Uses of Fossil Fuels section of this report. These factors all contribute to the uncertainty in the CO<sub>2</sub> estimates. Detailed discussions on the uncertainties associated with C emitted from Non-Energy Uses of Fossil Fuels can be found within that section of this chapter.

Various sources of uncertainty surround the estimation of emissions from international bunker fuels, which are subtracted from the U.S. totals (see the detailed discussions on these uncertainties provided in the International Bunker Fuels section of this chapter). Another source of uncertainty is fuel consumption by U.S. Territories. The United States does not collect energy statistics for its territories at the same level of detail as for the fifty states and the District of Columbia. Therefore, estimating both emissions and bunker fuel consumption by these territories is difficult.

Uncertainties in the emission estimates presented above also result from the data used to allocate CO<sub>2</sub> emissions from the transportation end-use sector to individual vehicle types and transport modes. In many cases, bottom-up estimates of fuel consumption by vehicle type do not match aggregate fuel-type estimates from EIA. Further research is planned to improve the allocation into detailed transportation end-use sector emissions.

The uncertainty analysis was performed by primary fuel type for each end-use sector, using the IPCC-recommended Approach 2 uncertainty estimation methodology, Monte Carlo Stochastic Simulation technique, with @RISK software. For this uncertainty estimation, the inventory estimation model for CO<sub>2</sub> from fossil fuel combustion was integrated with the relevant variables from the inventory estimation model for International Bunker Fuels, to realistically characterize the interaction (or endogenous correlation) between the variables of these two models. About 120 input variables were modeled for CO<sub>2</sub> from energy-related Fossil Fuel Combustion (including about 10 for non-energy fuel consumption and about 20 for International Bunker Fuels).

In developing the uncertainty estimation model, uniform distributions were assumed for all activity-related input variables and emission factors, based on the SAIC/EIA (2001) report.<sup>41</sup> Triangular distributions were assigned for the oxidization factors (or combustion efficiencies). The uncertainty ranges were assigned to the input variables based on the data reported in SAIC/EIA (2001) and on conversations with various agency personnel.<sup>42</sup>

The uncertainty ranges for the activity-related input variables were typically asymmetric around their inventory estimates; the uncertainty ranges for the emissions factors were symmetric. Bias (or systematic uncertainties) associated with these variables accounted for much of the uncertainties associated with these variables (SAIC/EIA 2001).<sup>43</sup> For purposes of this uncertainty analysis, each input variable was simulated 10,000 times through Monte Carlo sampling.

The results of the Approach 2 quantitative uncertainty analysis are summarized in Table 3-16. Fossil fuel combustion CO<sub>2</sub> emissions in 2014 were estimated to be between 5,102.4 and 5,457.4 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level. This indicates a range of 2 percent below to 5 percent above the 2014 emission estimate of 5,208.2 MMT CO<sub>2</sub> Eq.

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<sup>41</sup> SAIC/EIA (2001) characterizes the underlying probability density function for the input variables as a combination of uniform and normal distributions (the former to represent the bias component and the latter to represent the random component). However, for purposes of the current uncertainty analysis, it was determined that uniform distribution was more appropriate to characterize the probability density function underlying each of these variables.

<sup>42</sup> In the SAIC/EIA (2001) report, the quantitative uncertainty estimates were developed for each of the three major fossil fuels used within each end-use sector; the variations within the sub-fuel types within each end-use sector were not modeled. However, for purposes of assigning uncertainty estimates to the sub-fuel type categories within each end-use sector in the current uncertainty analysis, SAIC/EIA (2001)-reported uncertainty estimates were extrapolated.

<sup>43</sup> Although, in general, random uncertainties are the main focus of statistical uncertainty analysis, when the uncertainty estimates are elicited from experts, their estimates include both random and systematic uncertainties. Hence, both these types of uncertainties are represented in this uncertainty analysis.

**Table 3-16: Approach 2 Quantitative Uncertainty Estimates for CO<sub>2</sub> Emissions from Energy-Related Fossil Fuel Combustion by Fuel Type and Sector (MMT CO<sub>2</sub> Eq. and Percent)**

Fuel/Sector	2014 Emission Estimate (MMT CO <sub>2</sub> Eq.)	Uncertainty Range Relative to Emission Estimate <sup>a</sup>			
		(MMT CO <sub>2</sub> Eq.)		(%)	
		Lower Bound	Upper Bound	Lower Bound	Upper Bound
<b>Coal<sup>b</sup></b>	<b>1,653.7</b>	<b>1,596.3</b>	<b>1,809.1</b>	<b>-3%</b>	<b>9%</b>
Residential	NE	NE	NE	NE	NE
Commercial	4.5	4.3	5.2	-5%	15%
Industrial	75.3	71.8	87.2	-5%	16%
Transportation	NE	NE	NE	NE	NE
Electricity Generation	1,570.4	1,509.0	1,721.0	-4%	10%
U.S. Territories	3.4	3.0	4.0	-13%	19%
<b>Natural Gas<sup>b</sup></b>	<b>1,426.6</b>	<b>1,411.4</b>	<b>1,492.7</b>	<b>-1%</b>	<b>5%</b>
Residential	277.6	269.7	297.1	-3%	7%
Commercial	189.2	183.8	202.4	-3%	7%
Industrial	466.0	452.1	499.6	-3%	7%
Transportation	47.6	46.3	51.0	-3%	7%
Electricity Generation	443.2	430.4	465.6	-3%	5%
U.S. Territories	3.0	2.6	3.5	-12%	17%
<b>Petroleum<sup>b</sup></b>	<b>2,127.5</b>	<b>1,997.0</b>	<b>2,251.9</b>	<b>-6%</b>	<b>6%</b>
Residential	67.5	63.8	71.0	-5%	5%
Commercial	38.2	36.3	40.0	-5%	5%
Industrial	271.9	219.1	321.2	-19%	18%
Transportation	1,690.0	1,577.3	1,800.7	-7%	7%
Electric Utilities	25.3	24.1	27.3	-5%	8%
U.S. Territories	34.6	31.9	38.5	-8%	11%
<b>Total (excluding Geothermal)<sup>b</sup></b>	<b>5,207.8</b>	<b>5,102.0</b>	<b>5,457.0</b>	<b>-2%</b>	<b>5%</b>
Geothermal	0.4	NE	NE	NE	NE
<b>Total (including Geothermal)<sup>b,c</sup></b>	<b>5,208.2</b>	<b>5,102.4</b>	<b>5,457.4</b>	<b>-2%</b>	<b>5%</b>

NE (Not Estimated)

<sup>a</sup> Range of emission estimates predicted by Monte Carlo Stochastic Simulation for a 95 percent confidence interval.

<sup>b</sup> The low and high estimates for total emissions were calculated separately through simulations and, hence, the low and high emission estimates for the sub-source categories do not sum to total emissions.

<sup>c</sup> Geothermal emissions added for reporting purposes, but an uncertainty analysis was not performed for CO<sub>2</sub> emissions from geothermal production.

Methodological recalculations were applied to the entire time series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## QA/QC and Verification

A source-specific QA/QC plan for CO<sub>2</sub> from fossil fuel combustion was developed and implemented. This effort included a Tier 1 analysis, as well as portions of a Tier 2 analysis. The Tier 2 procedures that were implemented involved checks specifically focusing on the activity data and methodology used for estimating CO<sub>2</sub> emissions from fossil fuel combustion in the United States. Emission totals for the different sectors and fuels were compared and trends were investigated to determine whether any corrective actions were needed. Minor corrective actions were taken.

## Recalculations Discussion

The Energy Information Administration (EIA 2016) updated energy consumption statistics across the time series relative to the previous Inventory. One such revision is the historical coal and petroleum product consumption in the industrial sector for the entire time series. In addition, EIA revised 2013 natural gas consumption in the

transportation sector and 2013 kerosene and Liquefied Petroleum Gas (LPG) consumption in the residential and commercial sectors.

Kerosene consumption increased in the residential sector by 9 percent in 2013 and decreased by 14 and 25 percent in the commercial and industrial sectors in 2013, respectively. Transportation sector distillate fuel consumption decreased by 0.4 percent across the entire time series.

In early 2015, EIA revised the heat content used to calculate the energy of distillate fuel oil consumption. Previously, a single constant factor (5.825 MMBtu/barrel) from EIA's Monthly Energy Review (MER) Table A1 was applied to the volumetric data. For the January 2015 release, this single constant factor in Table A1 was replaced with heat content factors for distillate fuel oil by sulfur content. Instead of using the factor(s) listed in Table A1, EIA began to use an annually variable quantity-weighted factor (5.774 MMBtu/barrel for 2013) that was added to Table A3. EIA notes that quantity-weighted averages of the sulfur-content categories of distillate fuel oil are calculated by using heat content values shown in Table A1, and that these values exclude renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

Overall, these changes resulted in an average annual decrease of 1.1 MMT CO<sub>2</sub> Eq. (less than 0.1 percent) in CO<sub>2</sub> emissions from fossil fuel combustion for the period 1990 through 2013, relative to the previous report.

## Planned Improvements

To reduce uncertainty of CO<sub>2</sub> from fossil fuel combustion estimates, efforts will be taken to work with EIA and other agencies to improve the quality of the U.S. Territories data. This improvement is not all-inclusive, and is part of an ongoing analysis and efforts to continually improve the CO<sub>2</sub> from fossil fuel combustion estimates. In addition, further expert elicitation may be conducted to better quantify the total uncertainty associated with emissions from this source.

The availability of facility-level combustion emissions through EPA's GHGRP will continue to be examined to help better characterize the industrial sector's energy consumption in the United States, and further classify business establishments according to industrial economic activity type. Most methodologies used in EPA's GHGRP are consistent with IPCC, though for EPA's GHGRP, facilities collect detailed information specific to their operations according to detailed measurement standards, which may differ with the more aggregated data collected for the Inventory to estimate total, national U.S. emissions. In addition, and unlike the reporting requirements for this chapter under the UNFCCC reporting guidelines, some facility-level fuel combustion emissions reported under the GHGRP may also include industrial process emissions.<sup>44</sup> In line with UNFCCC reporting guidelines, fuel combustion emissions are included in this chapter, while process emissions are included in the Industrial Processes and Product Use chapter of this report. In examining data from EPA's GHGRP that would be useful to improve the emission estimates for the CO<sub>2</sub> from fossil fuel combustion category, particular attention will also be made to ensure time series consistency, as the facility-level reporting data from EPA's GHGRP are not available for all inventory years as reported in this Inventory. Additional analyses will be conducted to align reported facility-level fuel types and IPCC fuel types per the national energy statistics. Additional work will commence to ensure CO<sub>2</sub> emissions from biomass are separated in the facility-level reported data, and maintaining consistency with national energy statistics provided by EIA. In implementing improvements and integration of data from EPA's GHGRP, the latest guidance from the IPCC on the use of facility-level data in national inventories will continue to be relied upon.<sup>45</sup>

Another planned improvement is to develop improved estimates of domestic waterborne fuel consumption. The inventory estimates for residual and distillate fuel used by ships and boats is based in part on data on bunker fuel use from the U.S. Department of Commerce. Domestic fuel consumption is estimated by subtracting fuel sold for international use from the total sold in the United States. It may be possible to more accurately estimate domestic fuel use and emissions by using detailed data on marine ship activity. The feasibility of using domestic marine activity data to improve the estimates is currently being investigated.

An additional potential improvement is to include CO<sub>2</sub> emissions from natural gas (LNG and CNG) use in medium- and heavy-duty trucks, light trucks and passenger cars. Currently data from the Transportation Energy Data book is

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<sup>44</sup> See <<http://unfccc.int/resource/docs/2006/sbsta/eng/09.pdf>>.

<sup>45</sup> See <[http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1008\\_Model\\_and\\_Facility\\_Level\\_Data\\_Report.pdf](http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1008_Model_and_Facility_Level_Data_Report.pdf)>.

used to allocate CO<sub>2</sub> emissions to vehicle categories. However, this data source only estimates natural gas use in buses. We are currently investigating the use of alternative data sources from the EIA that would allow some of the CO<sub>2</sub> from natural gas consumption to be allocated to these other vehicle categories.

In addition, we are investigating an approach to account for CO<sub>2</sub> emissions from the use of urea-based additives in catalytic converters for on-road vehicles between 2010 and 2014. The approach would utilize the MOVES model to estimate fuel use by diesel vehicles with urea-based catalysts. The *2006 IPCC Guidelines* estimates urea use between one and three percent of diesel fuel used.

## CH<sub>4</sub> and N<sub>2</sub>O from Stationary Combustion

### Methodology

Methane and N<sub>2</sub>O emissions from stationary combustion were estimated by multiplying fossil fuel and wood consumption data by emission factors (by sector and fuel type for industrial, residential, commercial, and U.S. Territories; and by fuel and technology type for the electric power sector). Beginning with the current Inventory report, the electric power sector utilizes a Tier 2 methodology, whereas all other sectors utilize a Tier 1 methodology. The activity data and emission factors used are described in the following subsections.

#### *Industrial, Residential, Commercial, and U.S. Territories*

National coal, natural gas, fuel oil, and wood consumption data were grouped by sector: industrial, commercial, residential, and U.S. Territories. For the CH<sub>4</sub> and N<sub>2</sub>O estimates, wood consumption data for the United States was obtained from EIA's Monthly Energy Review (EIA 2016). Fuel consumption data for coal, natural gas, and fuel oil for the United States were also obtained from EIA's Monthly Energy Review and unpublished supplemental tables on petroleum product detail (EIA 2016). Because the United States does not include territories in its national energy statistics, fuel consumption data for territories were provided separately by EIA's International Energy Statistics (EIA 2014) and Jacobs (2010).<sup>46</sup> Fuel consumption for the industrial sector was adjusted to subtract out construction and agricultural use, which is reported under mobile sources.<sup>47</sup> Construction and agricultural fuel use was obtained from EPA (2014). Estimates for wood biomass consumption for fuel combustion do not include wood wastes, liquors, municipal solid waste, tires, etc., that are reported as biomass by EIA. Tier 1 default emission factors for these three end-use sectors were provided by the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (IPCC 2006). U.S. Territories' emission factors were estimated using the U.S. emission factors for the primary sector in which each fuel was combusted.

#### *Electric Power Sector*

The electric power sector now uses a Tier 2 emission estimation methodology as fuel consumption for the electricity generation sector by control-technology type was obtained from EPA's Acid Rain Program Dataset (EPA 2015a). This combustion technology- and fuel-use data was available by facility from 1996 to 2014. The Tier 2 emission factors used were taken from IPCC (2006), which in turn are based on emission factors published by EPA.

Since there was a difference between the EPA (2015a) and EIA (2016) total energy consumption estimates, the remaining energy consumption from EIA (2016) was apportioned to each combustion technology type and fuel combination using a ratio of energy consumption by technology type from 1996 to 2014.

Energy consumption estimates were not available from 1990 to 1995 in the EPA (2015a) dataset, and as a result, consumption was calculated using total electric power consumption from EIA (2016) and the ratio of combustion technology and fuel types from EPA (2015a). The consumption estimates from 1990 to 1995 were estimated by

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<sup>46</sup> U.S. Territories data also include combustion from mobile activities because data to allocate territories' energy use were unavailable. For this reason, CH<sub>4</sub> and N<sub>2</sub>O emissions from combustion by U.S. Territories are only included in the stationary combustion totals.

<sup>47</sup> Though emissions from construction and farm use occur due to both stationary and mobile sources, detailed data was not available to determine the magnitude from each. Currently, these emissions are assumed to be predominantly from mobile sources.

applying the 1996 consumption ratio by combustion technology type to the total EIA consumption for each year from 1990 to 1995. Emissions were estimated by multiplying fossil fuel and wood consumption by technology- and fuel-specific Tier 2 IPCC emission factors.

Lastly, there were significant differences between wood biomass consumption in the electric power sector between the EPA (2015a) and EIA (2016) datasets. The higher wood biomass consumption from EIA (2016) in the electric power sector was distributed to the residential, commercial, and industrial sectors according to their percent share of wood biomass energy consumption calculated from EIA (2016).

More detailed information on the methodology for calculating emissions from stationary combustion, including emission factors and activity data, is provided in Annex 3.1.

## Uncertainty and Time-Series Consistency

Methane emission estimates from stationary sources exhibit high uncertainty, primarily due to difficulties in calculating emissions from wood combustion (i.e., fireplaces and wood stoves). The estimates of CH<sub>4</sub> and N<sub>2</sub>O emissions presented are based on broad indicators of emissions (i.e., fuel use multiplied by an aggregate emission factor for different sectors), rather than specific emission processes (i.e., by combustion technology and type of emission control).

An uncertainty analysis was performed by primary fuel type for each end-use sector, using the IPCC-recommended Approach 2 uncertainty estimation methodology, Monte Carlo Stochastic Simulation technique, with @RISK software.

The uncertainty estimation model for this source category was developed by integrating the CH<sub>4</sub> and N<sub>2</sub>O stationary source inventory estimation models with the model for CO<sub>2</sub> from fossil fuel combustion to realistically characterize the interaction (or endogenous correlation) between the variables of these three models. About 55 input variables were simulated for the uncertainty analysis of this source category (about 20 from the CO<sub>2</sub> emissions from fossil fuel combustion inventory estimation model and about 35 from the stationary source inventory models).

In developing the uncertainty estimation model, uniform distribution was assumed for all activity-related input variables and N<sub>2</sub>O emission factors, based on the SAIC/EIA (2001) report.<sup>48</sup> For these variables, the uncertainty ranges were assigned to the input variables based on the data reported in SAIC/EIA (2001).<sup>49</sup> However, the CH<sub>4</sub> emission factors differ from those used by EIA. These factors and uncertainty ranges are based on IPCC default uncertainty estimates (IPCC 2006).

The results of the Approach 2 quantitative uncertainty analysis are summarized in Table 3-17. Stationary combustion CH<sub>4</sub> emissions in 2014 (*including* biomass) were estimated to be between 4.8 and 20.6 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level. This indicates a range of 41 percent below to 155 percent above the 2014 emission estimate of 8.1 MMT CO<sub>2</sub> Eq.<sup>50</sup> Stationary combustion N<sub>2</sub>O emissions in 2014 (*including* biomass) were estimated to be between 17.9 and 34.2 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level. This indicates a range of 24 percent below to 46 percent above the 2014 emissions estimate of 23.4 MMT CO<sub>2</sub> Eq.

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<sup>48</sup> SAIC/EIA (2001) characterizes the underlying probability density function for the input variables as a combination of uniform and normal distributions (the former distribution to represent the bias component and the latter to represent the random component). However, for purposes of the current uncertainty analysis, it was determined that uniform distribution was more appropriate to characterize the probability density function underlying each of these variables.

<sup>49</sup> In the SAIC/EIA (2001) report, the quantitative uncertainty estimates were developed for each of the three major fossil fuels used within each end-use sector; the variations within the sub-fuel types within each end-use sector were not modeled. However, for purposes of assigning uncertainty estimates to the sub-fuel type categories within each end-use sector in the current uncertainty analysis, SAIC/EIA (2001)-reported uncertainty estimates were extrapolated.

<sup>50</sup> The low emission estimates reported in this section have been rounded down to the nearest integer values and the high emission estimates have been rounded up to the nearest integer values.

**Table 3-17: Approach 2 Quantitative Uncertainty Estimates for CH<sub>4</sub> and N<sub>2</sub>O Emissions from Energy-Related Stationary Combustion, Including Biomass (MMT CO<sub>2</sub> Eq. and Percent)**

Source	Gas	2014 Emission Estimate (MMT CO <sub>2</sub> Eq.)	Uncertainty Range Relative to Emission Estimate <sup>a</sup> (MMT CO <sub>2</sub> Eq.)			
			Lower Bound	Upper Bound	Lower Bound (%)	Upper Bound (%)
Stationary Combustion	CH <sub>4</sub>	8.1	4.8	20.6	-41%	+155%
Stationary Combustion	N <sub>2</sub> O	23.4	17.9	34.2	-24%	+46%

<sup>a</sup> Range of emission estimates predicted by Monte Carlo Stochastic Simulation for a 95 percent confidence interval.

The uncertainties associated with the emission estimates of CH<sub>4</sub> and N<sub>2</sub>O are greater than those associated with estimates of CO<sub>2</sub> from fossil fuel combustion, which mainly rely on the carbon content of the fuel combusted. Uncertainties in both CH<sub>4</sub> and N<sub>2</sub>O estimates are due to the fact that emissions are estimated based on emission factors representing only a limited subset of combustion conditions. For the indirect greenhouse gases, uncertainties are partly due to assumptions concerning combustion technology types, age of equipment, emission factors used, and activity data projections.

Methodological recalculations were applied to the entire time-series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## QA/QC and Verification

A source-specific QA/QC plan for stationary combustion was developed and implemented. This effort included a Tier 1 analysis, as well as portions of a Tier 2 analysis. The Tier 2 procedures that were implemented involved checks specifically focusing on the activity data and emission factor sources and methodology used for estimating CH<sub>4</sub>, N<sub>2</sub>O, and the indirect greenhouse gases from stationary combustion in the United States. Emission totals for the different sectors and fuels were compared and trends were investigated.

## Recalculations Discussion

Methane and N<sub>2</sub>O emissions from stationary sources (excluding CO<sub>2</sub>) across the entire time series were revised due to revised data from EIA (2016) and EPA (2015a) relative to the previous Inventory. The CH<sub>4</sub> emission estimates were also revised due to a corrected emission factor for Natural Gas Combined Cycle gas turbines that was corrected from 1 g/GJ to 4 g/GJ, per IPCC (2006). The historical data changes resulted in an average annual increase of less than 0.1 MMT CO<sub>2</sub> Eq. (less than 0.1 percent) in CH<sub>4</sub> emissions, and an average annual decrease of less than 0.1 MMT CO<sub>2</sub> Eq. (less than 0.1 percent) in N<sub>2</sub>O emissions from stationary combustion for the period 1990 through 2013.

## Planned Improvements

Several items are being evaluated to improve the CH<sub>4</sub> and N<sub>2</sub>O emission estimates from stationary combustion and to reduce uncertainty. Efforts will be taken to work with EIA and other agencies to improve the quality of the U.S. Territories data. Because these data are not broken out by stationary and mobile uses, further research will be aimed at trying to allocate consumption appropriately. In addition, the uncertainty of biomass emissions will be further investigated since it was expected that the exclusion of biomass from the uncertainty estimates would reduce the uncertainty; and in actuality the exclusion of biomass increases the uncertainty. These improvements are not all-inclusive, but are part of an ongoing analysis and efforts to continually improve these stationary estimates.

Future improvements to the CH<sub>4</sub> and N<sub>2</sub>O from Stationary Combustion category involve research into the availability of CH<sub>4</sub> and N<sub>2</sub>O from stationary combustion data, and analyzing data reported under EPA's GHGRP. In examining data from EPA's GHGRP that would be useful to improve the emission estimates for CH<sub>4</sub> and N<sub>2</sub>O from Stationary Combustion category, particular attention will be made to ensure time series consistency, as the facility-level reporting data from EPA's GHGRP are not available for all Inventory years as reported in this Inventory. In

implementing improvements and integration of data from EPA's GHGRP, the latest guidance from the IPCC on the use of facility-level data in national inventories will be relied upon.<sup>51</sup>

## CH<sub>4</sub> and N<sub>2</sub>O from Mobile Combustion

### Methodology

Estimates of CH<sub>4</sub> and N<sub>2</sub>O emissions from mobile combustion were calculated by multiplying emission factors by measures of activity for each fuel and vehicle type (e.g., light-duty gasoline trucks). Activity data included vehicle miles traveled (VMT) for on-road vehicles and fuel consumption for non-road mobile sources. The activity data and emission factors used are described in the subsections that follow. A complete discussion of the methodology used to estimate CH<sub>4</sub> and N<sub>2</sub>O emissions from mobile combustion and the emission factors used in the calculations is provided in Annex 3.2.

#### *On-Road Vehicles*

Estimates of CH<sub>4</sub> and N<sub>2</sub>O emissions from gasoline and diesel on-road vehicles are based on VMT and emission factors by vehicle type, fuel type, model year, and emission control technology. Emission estimates for alternative fuel vehicles (AFVs) are based on VMT and emission factors by vehicle and fuel type.<sup>52</sup>

Emission factors for gasoline and diesel on-road vehicles utilizing Tier 2 and Low Emission Vehicle (LEV) technologies were developed by ICF (2006b); all other gasoline and diesel on-road vehicle emissions factors were developed by ICF (2004). These factors were derived from EPA, California Air Resources Board (CARB) and Environment Canada laboratory test results of different vehicle and control technology types. The EPA, CARB and Environment Canada tests were designed following the Federal Test Procedure (FTP), which covers three separate driving segments, since vehicles emit varying amounts of greenhouse gases depending on the driving segment. These driving segments are: (1) a transient driving cycle that includes cold start and running emissions, (2) a cycle that represents running emissions only, and (3) a transient driving cycle that includes hot start and running emissions. For each test run, a bag was affixed to the tailpipe of the vehicle and the exhaust was collected; the content of this bag was then analyzed to determine quantities of gases present. The emissions characteristics of segment 2 were used to define running emissions, and subtracted from the total FTP emissions to determine start emissions. These were then recombined based upon the ratio of start to running emissions for each vehicle class from MOBILE6.2, an EPA emission factor model that predicts gram per mile emissions of CO<sub>2</sub>, CO, HC, NO<sub>x</sub>, and PM from vehicles under various conditions, to approximate average driving characteristics.<sup>53</sup>

Emission factors for AFVs were first developed by ICF (2006a) after examining Argonne National Laboratory's GREET 1.7–Transportation Fuel Cycle Model (ANL 2006) and Lipman and Delucchi (2002). These sources describe AFV emission factors in terms of ratios to conventional vehicle emission factors. Ratios of AFV to conventional vehicle emissions factors were then applied to estimated Tier 1 emissions factors from light-duty gasoline vehicles to estimate light-duty AFVs. Emissions factors for heavy-duty AFVs were developed in relation to gasoline heavy-duty vehicles. A complete discussion of the data source and methodology used to determine emission factors from AFVs is provided in Annex 3.2.

Annual VMT data for 1990 through 2014 were obtained from the Federal Highway Administration's (FHWA) Highway Performance Monitoring System database as reported in Highway Statistics (FHWA 1996 through 2015).<sup>54</sup> VMT estimates were then allocated from FHWA's vehicle categories to fuel-specific vehicle categories

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<sup>51</sup> See <[http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1008\\_Model\\_and\\_Facility\\_Level\\_Data\\_Report.pdf](http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1008_Model_and_Facility_Level_Data_Report.pdf)>.

<sup>52</sup> Alternative fuel and advanced technology vehicles are those that can operate using a motor fuel other than gasoline or diesel. This includes electric or other bi-fuel or dual-fuel vehicles that may be partially powered by gasoline or diesel.

<sup>53</sup> Additional information regarding the model can be found online at <<http://www.epa.gov/OMS/m6.htm>>.

<sup>54</sup> The source of VMT is FHWA's VM-1 table. In 2011, FHWA changed its methods for estimating data in the VM-1 table. These methodological changes included how vehicles are classified, moving from a system based on body-type to one that is based on wheelbase. These changes were first incorporated for the 1990 through 2010 Inventory and apply to the 2007 through



using the calculated shares of vehicle fuel use for each vehicle category by fuel type reported in DOE (1993 through 2015) and information on total motor vehicle fuel consumption by fuel type from FHWA (1996 through 2015). VMT for AFVs were estimated based on Browning (2015). The age distributions of the U.S. vehicle fleet were obtained from EPA (2015b, 2000), and the average annual age-specific vehicle mileage accumulation of U.S. vehicles were obtained from EPA (2015b).

Control technology and standards data for on-road vehicles were obtained from EPA's Office of Transportation and Air Quality (EPA 2007a, 2007b, 2000, 1998, and 1997) and Browning (2005). These technologies and standards are defined in Annex 3.2, and were compiled from EPA (1994a, 1994b, 1998, 1999a) and IPCC (2006).

### *Non-Road Vehicles*

To estimate emissions from non-road vehicles, fuel consumption data were employed as a measure of activity, and multiplied by fuel-specific emission factors (in grams of N<sub>2</sub>O and CH<sub>4</sub> per kilogram of fuel consumed).<sup>55</sup> Activity data were obtained from AAR (2008 through 2015), APTA (2007 through 2015), APTA (2006), BEA (1991 through 2015), Benson (2002 through 2004), DHS (2008), DLA Energy (2015), DOC (1991 through 2015), DOE (1993 through 2015), DOT (1991 through 2015), EIA (2002, 2007, 2015a), EIA (2007 through 2015), EIA (1991 through 2015), EPA (2015b), Esser (2003 through 2004), FAA (2016), FHWA (1996 through 2015), Gaffney (2007), and Whorton (2006 through 2014). Emission factors for non-road modes were taken from IPCC (2006) and Browning (2009).

## **Uncertainty and Time-Series Consistency**

A quantitative uncertainty analysis was conducted for the mobile source sector using the IPCC-recommended Approach 2 uncertainty estimation methodology, Monte Carlo Stochastic Simulation technique, using @RISK software. The uncertainty analysis was performed on 2014 estimates of CH<sub>4</sub> and N<sub>2</sub>O emissions, incorporating probability distribution functions associated with the major input variables. For the purposes of this analysis, the uncertainty was modeled for the following four major sets of input variables: (1) VMT data, by on-road vehicle and fuel type and (2) emission factor data, by on-road vehicle, fuel, and control technology type, (3) fuel consumption, data, by non-road vehicle and equipment type, and (4) emission factor data, by non-road vehicle and equipment type.

Uncertainty analyses were not conducted for NO<sub>x</sub>, CO, or NMVOC emissions. Emission factors for these gases have been extensively researched since emissions of these gases from motor vehicles are regulated in the United States, and the uncertainty in these emission estimates is believed to be relatively low. For more information, see Section 1.7 Uncertainty Analysis of Emission Estimates. However, a much higher level of uncertainty is associated with CH<sub>4</sub> and N<sub>2</sub>O emission factors due to limited emission test data, and because, unlike CO<sub>2</sub> emissions, the emission pathways of CH<sub>4</sub> and N<sub>2</sub>O are highly complex.

Mobile combustion CH<sub>4</sub> emissions from all mobile sources in 2014 were estimated to be between 1.8 and 2.4 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level. This indicates a range of 12 percent below to 18 percent above the corresponding 2014 emission estimate of 2.0 MMT CO<sub>2</sub> Eq. Also at a 95 percent confidence level, mobile combustion N<sub>2</sub>O emissions from mobile sources in 2014 were estimated to be between 15.7 and 20.7 MMT CO<sub>2</sub> Eq., indicating a range of 4 percent below to 27 percent above the corresponding 2014 emission estimate of 16.3 MMT CO<sub>2</sub> Eq.

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2014 time period. This resulted in large changes in VMT by vehicle class, thus leading to a shift in emissions among on-road vehicle classes. For example, the category "Passenger Cars" has been replaced by "Light-duty Vehicles-Short Wheelbase" and "Other 2 axle-4 Tire Vehicles" has been replaced by "Light-duty Vehicles, Long Wheelbase." This change in vehicle classification has moved some smaller trucks and sport utility vehicles from the light truck category to the passenger vehicle category in this Inventory. These changes are reflected in a large drop in light-truck emissions between 2006 and 2007.

<sup>55</sup> The consumption of international bunker fuels is not included in these activity data, but is estimated separately under the International Bunker Fuels source category.

**Table 3-18: Approach 2 Quantitative Uncertainty Estimates for CH<sub>4</sub> and N<sub>2</sub>O Emissions from Mobile Sources (MMT CO<sub>2</sub> Eq. and Percent)**

Source	Gas	2014 Emission Estimate <sup>a</sup> (MMT CO <sub>2</sub> Eq.)	Uncertainty Range Relative to Emission Estimate <sup>a</sup>			
			(MMT CO <sub>2</sub> Eq.)		(%)	
			Lower Bound	Upper Bound	Lower Bound	Upper Bound
Mobile Sources	CH <sub>4</sub>	2.0	1.8	2.4	-12%	+18%
Mobile Sources	N <sub>2</sub> O	16.3	15.7	20.7	-4%	+27%

<sup>a</sup> Range of emission estimates predicted by Monte Carlo Stochastic Simulation for a 95 percent confidence interval.

This uncertainty analysis is a continuation of a multi-year process for developing quantitative uncertainty estimates for this source category using the IPCC Approach 2 uncertainty analysis. As a result, as new information becomes available, uncertainty characterization of input variables may be improved and revised. For additional information regarding uncertainty in emission estimates for CH<sub>4</sub> and N<sub>2</sub>O please refer to the Uncertainty Annex.

Methodological recalculations were applied to the entire time-series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## QA/QC and Verification

A source-specific Quality Assurance/Quality Control plan for mobile combustion was developed and implemented. This plan is based on the IPCC-recommended QA/QC Plan. The specific plan used for mobile combustion was updated prior to collection and analysis of this current year of data. This effort included a Tier 1 analysis, as well as portions of a Tier 2 analysis. The Tier 2 procedures focused on the emission factor and activity data sources, as well as the methodology used for estimating emissions. These procedures included a qualitative assessment of the emissions estimates to determine whether they appear consistent with the most recent activity data and emission factors available. A comparison of historical emissions between the current Inventory and the previous Inventory was also conducted to ensure that the changes in estimates were consistent with the changes in activity data and emission factors.

## Recalculations Discussion

Decreases to CH<sub>4</sub> and N<sub>2</sub>O emissions from mobile combustion are largely due to updates made to the Motor Vehicle Emissions Simulator (MOVES 2014a) model that is used to estimate on-road gasoline vehicle distribution and mileage across the time series. These changes are due to the updated MOVES age distributions for years 1999 through 2013 in this year's Inventory. These changes in the age distribution increased the percentage of vehicles and VMT for some vehicle types in newer model years that have better emissions control technology. For aircrafts, a weighted jet fuel heat content was applied to the jet fuel N<sub>2</sub>O emissions calculation. The weighted factor accounts for the different heat contents of jet fuels used in commercial aviation, general aviation and the military. This resulted in a 0.4 percent increase in the heat content and a similar increase in N<sub>2</sub>O emissions.

Estimates of alternative fuel vehicle mileage were also revised to reflect updates made to Energy Information Administration (EIA) data on alternative fuel use and vehicle counts. The energy economy ratios (EERs) in the alternative fuel vehicle analysis were also updated in this Inventory. EERs are the ratio of the gasoline equivalent fuel economy of a given technology to that of conventional gasoline or diesel vehicles. These were taken from the Argonne National Laboratory's GREET model (ANL 2015). Most of the energy economy ratios were within 10 percent of their previous values. More significant changes occurred with Neighborhood Electric Vehicles (NEVs) (-26 percent), Electric Vehicles (EVs) (17 percent), Hydrogen Fuel Cell Vehicles (-15 percent), Neat Methanol Internal Combustion Engines (ICEs) (12 percent), Neat Ethanol ICEs (25 percent), LPG ICEs (11 percent) and LPG Bi-fuel (11 percent). Increases in EERs increase miles per gallon, estimated VMT, and emissions.

Overall, these changes resulted in an average annual decrease of 0.1 MMT CO<sub>2</sub> Eq. (4 percent) in CH<sub>4</sub> emissions and an average annual decrease of 1.4 MMT CO<sub>2</sub> Eq. (3 percent) in N<sub>2</sub>O emissions from mobile combustion for the period 1990 through 2013, relative to the previous report.

## Planned Improvements

While the data used for this report represent the most accurate information available, several areas have been identified that could potentially be improved in the near term given available resources.

- Develop improved estimates of domestic waterborne fuel consumption. The Inventory estimates for residual and distillate fuel used by ships and boats is based in part on data on bunker fuel use from the U.S. Department of Commerce. Domestic fuel consumption is estimated by subtracting fuel sold for international use from the total sold in the United States. It may be possible to more accurately estimate domestic fuel use and emissions by using detailed data on marine ship activity. The feasibility of using domestic marine activity data to improve the estimates is currently being investigated. Additionally, the feasibility of including data from a broader range of domestic and international sources for domestic bunker fuels, including data from studies such as the *Third IMO GHG Study 2014*, is being considered.
- Continue to examine the use of EPA’s MOVES model in the development of the Inventory estimates, including use for uncertainty analysis. Although the Inventory uses some of the underlying data from MOVES, such as vehicle age distributions by model year, MOVES is not used directly in calculating mobile source emissions. The use of MOVES will be further explored.

## 3.2 Carbon Emitted from Non-Energy Uses of Fossil Fuels (IPCC Source Category 1A)

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In addition to being combusted for energy, fossil fuels are also consumed for non-energy uses (NEU) in the United States. The fuels used for these purposes are diverse, including natural gas, liquefied petroleum gases (LPG), asphalt (a viscous liquid mixture of heavy crude oil distillates), petroleum coke (manufactured from heavy oil), and coal (metallurgical) coke (manufactured from coking coal). The non-energy applications of these fuels are equally diverse, including feedstocks for the manufacture of plastics, rubber, synthetic fibers and other materials; reducing agents for the production of various metals and inorganic products; and non-energy products such as lubricants, waxes, and asphalt (IPCC 2006).

CO<sub>2</sub> emissions arise from non-energy uses via several pathways. Emissions may occur during the manufacture of a product, as is the case in producing plastics or rubber from fuel-derived feedstocks. Additionally, emissions may occur during the product’s lifetime, such as during solvent use. Overall, throughout the time series and across all uses, about 60 percent of the total C consumed for non-energy purposes was stored in products, and not released to the atmosphere; the remaining 40 percent was emitted.

There are several areas in which non-energy uses of fossil fuels are closely related to other parts of this Inventory. For example, some of the NEU products release CO<sub>2</sub> at the end of their commercial life when they are combusted after disposal; these emissions are reported separately within the Energy chapter in the Incineration of Waste source category. In addition, there is some overlap between fossil fuels consumed for non-energy uses and the fossil-derived CO<sub>2</sub> emissions accounted for in the Industrial Processes and Product Use chapter, especially for fuels used as reducing agents. To avoid double-counting, the “raw” non-energy fuel consumption data reported by EIA are modified to account for these overlaps. There are also net exports of petrochemicals that are not completely accounted for in the EIA data, and the inventory calculations adjust for the effect of net exports on the mass of C in non-energy applications.

As shown in Table 3-19, fossil fuel emissions in 2014 from the non-energy uses of fossil fuels were 114.3 MMT CO<sub>2</sub> Eq., which constituted approximately 2 percent of overall fossil fuel emissions. In 2014, the consumption of fuels for non-energy uses (after the adjustments described above) was 4,761.2 TBtu, an increase of 6.3 percent since 1990 (see Table 3-20). About 55.9 MMT (205.1 MMT CO<sub>2</sub> Eq.) of the C in these fuels was stored, while the remaining 31.2 MMT C (114.3 MMT CO<sub>2</sub> Eq.) was emitted.

**Table 3-19: CO<sub>2</sub> Emissions from Non-Energy Use Fossil Fuel Consumption (MMT CO<sub>2</sub> Eq. and percent)**

Year	1990	2005	2010	2011	2012	2013	2014
Potential Emissions	312.1	377.5	325.1	316.6	311.9	327.1	319.5
C Stored	194.0	238.6	211.0	208.1	206.2	205.4	205.1
Emissions as a % of Potential	38%	37%	35%	34%	34%	37%	36%
<b>Emissions</b>	<b>118.1</b>	<b>138.9</b>	<b>114.1</b>	<b>108.5</b>	<b>105.6</b>	<b>121.7</b>	<b>114.3</b>

## Methodology

The first step in estimating C stored in products was to determine the aggregate quantity of fossil fuels consumed for non-energy uses. The C content of these feedstock fuels is equivalent to potential emissions, or the product of consumption and the fuel-specific C content values. Both the non-energy fuel consumption and C content data were supplied by the EIA (2013, 2015b) (see Annex 2.1). Consumption of natural gas, LPG, pentanes plus, naphthas, other oils, and special naphtha were adjusted to account for net exports of these products that are not reflected in the raw data from EIA. Consumption values for industrial coking coal, petroleum coke, other oils, and natural gas in Table 3-20 and Table 3-21 have been adjusted to subtract non-energy uses that are included in the source categories of the Industrial Processes and Product Use chapter.<sup>56,57</sup> Consumption values were also adjusted to subtract net exports of intermediary chemicals.

For the remaining non-energy uses, the quantity of C stored was estimated by multiplying the potential emissions by a storage factor.

- For several fuel types—petrochemical feedstocks (including natural gas for non-fertilizer uses, LPG, pentanes plus, naphthas, other oils, still gas, special naphtha, and industrial other coal), asphalt and road oil, lubricants, and waxes—U.S. data on C stocks and flows were used to develop C storage factors, calculated as the ratio of (a) the C stored by the fuel’s non-energy products to (b) the total C content of the fuel consumed. A lifecycle approach was used in the development of these factors in order to account for losses in the production process and during use. Because losses associated with municipal solid waste management are handled separately in the Energy sector under the Incineration of Waste source category, the storage factors do not account for losses at the disposal end of the life cycle.
- For industrial coking coal and distillate fuel oil, storage factors were taken from IPCC (2006), which in turn draws from Marland and Rotty (1984).
- For the remaining fuel types (petroleum coke, miscellaneous products, and other petroleum), IPCC does not provide guidance on storage factors, and assumptions were made based on the potential fate of C in the respective NEU products.

**Table 3-20: Adjusted Consumption of Fossil Fuels for Non-Energy Uses (TBTu)**

Year	1990	2005	2010	2011	2012	2013	2014
<b>Industry</b>	<b>4,215.8</b>	<b>5,110.9</b>	<b>4,572.7</b>	<b>4,470.2</b>	<b>4,377.4</b>	<b>4,621.4</b>	<b>4,571.6</b>
Industrial Coking Coal	+	80.4	64.8	60.8	132.5	119.6	23.0
Industrial Other Coal	8.2	11.9	10.3	10.3	10.3	10.3	10.3
Natural Gas to Chemical Plants	281.6	260.9	298.7	297.1	292.7	297.0	305.1

<sup>56</sup> These source categories include Iron and Steel Production, Lead Production, Zinc Production, Ammonia Manufacture, Carbon Black Manufacture (included in Petrochemical Production), Titanium Dioxide Production, Ferroalloy Production, Silicon Carbide Production, and Aluminum Production.

<sup>57</sup> Some degree of double counting may occur between these estimates of non-energy use of fuels and process emissions from petrochemical production presented in the Industrial Processes and Product Use sector. Data integration is not feasible at this time as feedstock data from EIA used to estimate non-energy uses of fuels are aggregated by fuel type, rather than disaggregated by both fuel type and particular industries (e.g., petrochemical production) as currently collected through EPA’s GHGRP and used for the petrochemical production category.

Asphalt & Road Oil	1,170.2	1,323.2	877.8	859.5	826.7	783.3	792.6
LPG	1,120.5	1,610.1	1,834.0	1,865.7	1,887.3	2,062.9	2,109.4
Lubricants	186.3	160.2	149.5	141.8	130.5	138.1	144.0
Pentanes Plus	117.6	95.5	75.3	26.4	40.3	45.4	43.5
Naphtha (<401 °F)	326.3	679.6	474.5	469.4	432.2	498.8	435.2
Other Oil (>401 °F)	662.1	499.5	433.2	368.2	267.4	209.1	236.2
Still Gas	36.7	67.7	147.8	163.6	160.6	166.7	164.6
Petroleum Coke	27.2	105.2	+	+	+	+	+
Special Naphtha	100.9	60.9	25.3	21.8	14.1	96.6	104.4
Distillate Fuel Oil	7.0	11.7	5.8	5.8	5.8	5.8	5.8
Waxes	33.3	31.4	17.1	15.1	15.3	16.5	14.8
Miscellaneous Products	137.8	112.8	158.7	164.7	161.6	171.2	182.7
<b>Transportation</b>	<b>176.0</b>	<b>151.3</b>	<b>141.2</b>	<b>133.9</b>	<b>123.2</b>	<b>130.4</b>	<b>136.0</b>
Lubricants	176.0	151.3	141.2	133.9	123.2	130.4	136.0
<b>U.S. Territories</b>	<b>86.7</b>	<b>121.9</b>	<b>56.4</b>	<b>56.7</b>	<b>58.1</b>	<b>57.4</b>	<b>53.6</b>
Lubricants	0.7	4.6	1.0	1.0	1.0	1.0	1.0
Other Petroleum (Misc. Prod.)	86.0	117.3	55.4	55.7	57.1	56.4	52.6
<b>Total</b>	<b>4,478.5</b>	<b>5,384.1</b>	<b>4,770.3</b>	<b>4,660.9</b>	<b>4,558.7</b>	<b>4,809.2</b>	<b>4,761.2</b>

+ Does not exceed 0.05 TBtu

NA - Not Applicable

Note: Totals may not sum due to independent rounding.

**Table 3-21: 2014 Adjusted Non-Energy Use Fossil Fuel Consumption, Storage, and Emissions**

Sector/Fuel Type	Adjusted Non-Energy Use <sup>a</sup> (TBtu)	Carbon Content Coefficient (MMT C/QBtu)	Potential Carbon (MMT C)	Storage Factor	Carbon Stored (MMT C)	Carbon Emissions (MMT C)	Carbon Emissions (MMT CO <sub>2</sub> Eq.)
<b>Industry</b>	<b>4,571.6</b>	<b>NA</b>	<b>83.3</b>	<b>NA</b>	<b>55.6</b>	<b>27.7</b>	<b>101.6</b>
Industrial Coking Coal	23.0	31.00	0.7	0.04	0.1	0.6	2.4
Industrial Other Coal	10.3	25.82	0.3	0.65	0.2	0.1	0.3
Natural Gas to							
Chemical Plants	305.1	14.46	4.4	0.65	2.9	1.5	5.6
Asphalt & Road Oil	792.6	20.55	16.3	1.00	16.2	0.1	0.3
LPG	2,109.4	17.06	36.0	0.65	23.6	12.4	45.6
Lubricants	144.0	20.20	2.9	0.09	0.3	2.6	9.7
Pentanes Plus	43.5	19.10	0.8	0.65	0.5	0.3	1.1
Naphtha (<401° F)	435.2	18.55	8.1	0.65	5.3	2.8	10.2
Other Oil (>401° F)	236.2	20.17	4.8	0.65	3.1	1.6	6.0
Still Gas	164.6	17.51	2.9	0.65	1.9	1.0	3.6
Petroleum Coke	+	27.85	+	0.04	+	+	+
Special Naphtha	104.4	19.74	2.1	0.65	1.3	0.7	2.6
Distillate Fuel Oil	5.8	20.17	0.1	0.04	0.1	0.1	0.2
Waxes	14.8	19.80	0.3	0.58	0.2	0.1	0.5
Miscellaneous Products	182.7	20.31	3.7	0.04	0.0	3.7	13.6
<b>Transportation</b>	<b>136.0</b>	<b>NA</b>	<b>2.7</b>	<b>NA</b>	<b>0.3</b>	<b>2.5</b>	<b>9.1</b>
Lubricants	136.0	20.20	2.7	0.09	0.3	2.5	9.1
<b>U.S. Territories</b>	<b>53.6</b>	<b>NA</b>	<b>1.1</b>	<b>NA</b>	<b>0.1</b>	<b>1.0</b>	<b>3.5</b>
Lubricants	1.0	20.20	+	0.09	+	+	0.1
Other Petroleum (Misc. Prod.)	52.6	20.00	1.1	0.04	0.1	0.9	3.5
<b>Total</b>	<b>4,761.2</b>		<b>87.1</b>		<b>55.9</b>	<b>31.2</b>	<b>114.3</b>

+ Does not exceed 0.05 TBtu

NA - Not Applicable

<sup>a</sup> To avoid double counting, net exports have been deducted.

Note: Totals may not sum due to independent rounding.

Lastly, emissions were estimated by subtracting the C stored from the potential emissions (see Table 3-19). More detail on the methodology for calculating storage and emissions from each of these sources is provided in Annex 2.3.

Where storage factors were calculated specifically for the United States, data were obtained on (1) products such as asphalt, plastics, synthetic rubber, synthetic fibers, cleansers (soaps and detergents), pesticides, food additives, antifreeze and deicers (glycols), and silicones; and (2) industrial releases including energy recovery, Toxics Release Inventory (TRI) releases, hazardous waste incineration, and volatile organic compound, solvent, and non-combustion CO emissions. Data were taken from a variety of industry sources, government reports, and expert communications. Sources include EPA reports and databases such as compilations of air emission factors (EPA 2001), *National Emissions Inventory (NEI) Air Pollutant Emissions Trends Data* (EPA 2015a), *Toxics Release Inventory, 1998* (2000b), *Biennial Reporting System* (EPA 2004, 2009), *Resource Conservation and Recovery Act Information System* (EPA 2013b, 2015b), pesticide sales and use estimates (EPA 1998, 1999, 2002, 2004, 2011), and the Chemical Data Access Tool (EPA 2012); the EIA Manufacturer's Energy Consumption Survey (MECS) (EIA 1994, 1997, 2001, 2005, 2010, 2013b, 2015b); the National Petrochemical & Refiners Association (NPRA 2002); the U.S. Bureau of the Census (1999, 2004, 2009); Bank of Canada (2012, 2013, 2014); Financial Planning Association (2006); INEGI (2006); the United States International Trade Commission (1990-2015); Gosselin, Smith, and Hodge (1984); EPA's Municipal Solid Waste (MSW) Facts and Figures (EPA 2013a; 2014a); the Rubber Manufacturers' Association (RMA 2009, 2011, 2014); the International Institute of Synthetic Rubber Products (IISRP 2000, 2003); the Fiber Economics Bureau (FEB 2001-2013); the EPA Chemical Data Access Tool (CDAT) (EPA 2014b); the American Chemistry Council (ACC 2003-2011, 2012, 2013, 2014a, 2014b, 2015); and the *Guide to the Business of Chemistry* (ACC 2015b). Specific data sources are listed in full detail in Annex 2.3.

## Uncertainty and Time-Series Consistency

An uncertainty analysis was conducted to quantify the uncertainty surrounding the estimates of emissions and storage factors from non-energy uses. This analysis, performed using @RISK software and the IPCC-recommended Approach 2 methodology (Monte Carlo Stochastic Simulation technique), provides for the specification of probability density functions for key variables within a computational structure that mirrors the calculation of the inventory estimate. The results presented below provide the 95 percent confidence interval, the range of values within which emissions are likely to fall, for this source category.

As noted above, the non-energy use analysis is based on U.S.-specific storage factors for (1) feedstock materials (natural gas, LPG, pentanes plus, naphthas, other oils, still gas, special naphthas, and other industrial coal), (2) asphalt, (3) lubricants, and (4) waxes. For the remaining fuel types (the "other" category in Table 3-20 and Table 3-21), the storage factors were taken directly from IPCC (2006), where available, and otherwise assumptions were made based on the potential fate of carbon in the respective NEU products. To characterize uncertainty, five separate analyses were conducted, corresponding to each of the five categories. In all cases, statistical analyses or expert judgments of uncertainty were not available directly from the information sources for all the activity variables; thus, uncertainty estimates were determined using assumptions based on source category knowledge.

The results of the Approach 2 quantitative uncertainty analysis are summarized in Table 3-22 (emissions) and Table 3-23 (storage factors). Carbon emitted from non-energy uses of fossil fuels in 2014 was estimated to be between 86.2 and 162.9 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level. This indicates a range of 25 percent below to 42 percent above the 2014 emission estimate of 114.3 MMT CO<sub>2</sub> Eq. The uncertainty in the emission estimates is a function of uncertainty in both the quantity of fuel used for non-energy purposes and the storage factor.

**Table 3-22: Approach 2 Quantitative Uncertainty Estimates for CO<sub>2</sub> Emissions from Non-Energy Uses of Fossil Fuels (MMT CO<sub>2</sub> Eq. and Percent)**

Source	Gas	2014 Emission Estimate (MMT CO <sub>2</sub> Eq.)	Uncertainty Range Relative to Emission Estimate <sup>a</sup>			
			(MMT CO <sub>2</sub> Eq.)		(%)	
			Lower Bound	Upper Bound	Lower Bound	Upper Bound
Feedstocks	CO <sub>2</sub>	75.1	49.6	125.3	-34%	67%
Asphalt	CO <sub>2</sub>	0.3	0.1	0.6	-57%	117%
Lubricants	CO <sub>2</sub>	18.9	15.5	21.9	-18%	16%
Waxes	CO <sub>2</sub>	0.5	0.3	0.7	-28%	63%
Other	CO <sub>2</sub>	19.6	14.1	21.7	-28%	11%
<b>Total</b>	<b>CO<sub>2</sub></b>	<b>114.3</b>	<b>86.2</b>	<b>162.9</b>	<b>-25%</b>	<b>42%</b>

<sup>a</sup> Range of emission estimates predicted by Monte Carlo Stochastic Simulation for a 95 percent confidence interval.

Note: Totals may not sum due to independent rounding.

**Table 3-23: Approach 2 Quantitative Uncertainty Estimates for Storage Factors of Non-Energy Uses of Fossil Fuels (Percent)**

Source	Gas	2014 Storage Factor (%)	Uncertainty Range Relative to Emission Estimate <sup>a</sup>			
			(%)		(% Relative)	
			Lower Bound	Upper Bound	Lower Bound	Upper Bound
Feedstocks	CO <sub>2</sub>	65%	52%	72%	-20%	10%
Asphalt	CO <sub>2</sub>	99.6%	99.1%	99.8%	-0.5%	0.25%
Lubricants	CO <sub>2</sub>	9%	4%	17%	-57%	88%
Waxes	CO <sub>2</sub>	58%	49%	70%	-15%	22%
Other	CO <sub>2</sub>	4%	4%	24%	-3%	479%

<sup>a</sup> Range of emission estimates predicted by Monte Carlo Stochastic Simulation for a 95 percent confidence interval, as a percentage of the inventory value (also expressed in percent terms).

In Table 3-23, feedstocks and asphalt contribute least to overall storage factor uncertainty on a percentage basis. Although the feedstocks category—the largest use category in terms of total carbon flows—appears to have tight confidence limits, this is to some extent an artifact of the way the uncertainty analysis was structured. As discussed in Annex 2.3, the storage factor for feedstocks is based on an analysis of six fates that result in long-term storage (e.g., plastics production), and eleven that result in emissions (e.g., volatile organic compound emissions). Rather than modeling the total uncertainty around all of these fate processes, the current analysis addresses only the storage fates, and assumes that all C that is not stored is emitted. As the production statistics that drive the storage values are relatively well-characterized, this approach yields a result that is probably biased toward understating uncertainty.

As is the case with the other uncertainty analyses discussed throughout this document, the uncertainty results above address only those factors that can be readily quantified. More details on the uncertainty analysis are provided in Annex 2.3.

Methodological recalculations were applied to the entire time series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## QA/QC and Verification

A source-specific Quality Assurance/Quality Control plan for non-energy uses of fossil fuels was developed and implemented. This effort included a Tier 1 analysis, as well as portions of a Tier 2 analysis for non-energy uses

involving petrochemical feedstocks and for imports and exports. The Tier 2 procedures that were implemented involved checks specifically focusing on the activity data and methodology for estimating the fate of C (in terms of storage and emissions) across the various end-uses of fossil C. Emission and storage totals for the different subcategories were compared, and trends across the time series were analyzed to determine whether any corrective actions were needed. Corrective actions were taken to rectify minor errors and to improve the transparency of the calculations, facilitating future QA/QC.

For petrochemical import and export data, special attention was paid to NAICS numbers and titles to verify that none had changed or been removed. Import and export totals were compared for 2013 as well as their trends across the time series.

Petrochemical input data reported by EIA will continue to be investigated in an attempt to address an input/output discrepancy in the NEU model. Since 2001, the C accounted for in the feedstocks C balance outputs (i.e., storage plus emissions) exceeds C inputs. Prior to 2001, the C balance inputs exceed outputs. Starting in 2001 through 2009, outputs exceeded inputs. In 2010 and 2011, inputs exceeded outputs, and in 2012, outputs slightly exceeded inputs. A portion of this discrepancy has been reduced and two strategies have been developed to address the remaining portion (see Planned Improvements, below).

## Recalculations Discussion

A number of updates to historical production values were included in the most recent Monthly Energy Review; these have been populated throughout this document.

## Planned Improvements

There are several improvements planned for the future:

- Analyzing the fuel and feedstock data from EPA's GHGRP to better disaggregate CO<sub>2</sub> emissions in NEU model and CO<sub>2</sub> process emissions from petrochemical production.
- More accurate accounting of C in petrochemical feedstocks. EPA has worked with EIA to determine the cause of input/output discrepancies in the C mass balance contained within the NEU model. In the future, two strategies to reduce or eliminate this discrepancy will continue to be pursued. First, accounting of C in imports and exports will be improved. The import/export adjustment methodology will be examined to ensure that net exports of intermediaries such as ethylene and propylene are fully accounted for. Second, reconsider the use of top-down C input calculation in estimating emissions will be reconsidered. Alternative approaches that rely more substantially on the bottom-up C output calculation will be considered instead.
- Response to potential changes in NEU input data. In 2013 EIA initiated implementation of new data reporting definitions for Natural Gas Liquids (NGL) and Liquefied Petroleum Gases (LPG); the new definitions may affect the characterization of the input data that EIA provides for the NEU model and may therefore result in the need for changes to the NEU methodology. EIA also obtains and applies proprietary data for LPG inputs that are not directly applied as NEU input data because the data are proprietary. The potential use of the proprietary data (in an aggregated, non-proprietary form) as inputs to the NEU model will be investigated with EIA.
- Improving the uncertainty analysis. Most of the input parameter distributions are based on professional judgment rather than rigorous statistical characterizations of uncertainty.
- Better characterizing flows of fossil C. Additional fates may be researched, including the fossil C load in organic chemical wastewaters, plasticizers, adhesives, films, paints, and coatings. There is also a need to further clarify the treatment of fuel additives and backflows (especially methyl tert-butyl ether, MTBE).
- Reviewing the trends in fossil fuel consumption for non-energy uses. Annual consumption for several fuel types is highly variable across the time series, including industrial coking coal and other petroleum (miscellaneous products). A better understanding of these trends will be pursued to identify any mischaracterized or misreported fuel consumption for non-energy uses. For example, "miscellaneous



products” category includes miscellaneous products that are not reported elsewhere in the EIA data set. The EIA does not have firm data concerning the amounts of various products that are being reported in the “miscellaneous products” category; however, EIA has indicated that recovered sulfur from petroleum and natural gas processing, and potentially also C black feedstock could be reported in this category. Recovered sulfur would not be reported in the NEU calculation or elsewhere in the Inventory.

- Updating the average C content of solvents was researched, since the entire time series depends on one year’s worth of solvent composition data. Unfortunately, the data on C emissions from solvents that were readily available do not provide composition data for all categories of solvent emissions and also have conflicting definitions for volatile organic compounds, the source of emissive C in solvents. Additional sources of solvents data will be identified in order to update the C content assumptions.
- Updating the average C content of cleansers (soaps and detergents) was researched; although production and consumption data for cleansers are published every 5 years by the Census Bureau, the composition (C content) of cleansers has not been recently updated. Recently available composition data sources may facilitate updating the average C content for this category.
- Revising the methodology for consumption, production, and C content of plastics was researched; because of recent changes to the type of data publicly available for plastics, the NEU model for plastics applies data obtained from personal communications. Potential revisions to the plastics methodology to account for the recent changes in published data will be investigated.
- Although U.S.-specific storage factors have been developed for feedstocks, asphalt, lubricants, and waxes, default values from IPCC are still used for two of the non-energy fuel types (industrial coking coal, distillate oil), and broad assumptions are being used for miscellaneous products and other petroleum. Over the long term, there are plans to improve these storage factors by analyzing C fate similar to those described in Annex 2.3 or deferring to more updated default storage factors from IPCC where available.
- Reviewing the storage of carbon black across various sectors in the Inventory; in particular, the carbon black abraded and stored in tires.

### Box 3-6: Reporting of Lubricants, Waxes, and Asphalt and Road Oil Product Use in Energy Sector

IPCC (2006) provides methodological guidance to estimate emissions from the first use of fossil fuels as a product for primary purposes other than combustion for energy purposes (including lubricants, paraffin waxes, bitumen/asphalt, and solvents) under the Industrial Processes and Product Use (IPPU) sector.<sup>58</sup> In this Inventory, C storage and C emissions from product use of lubricants, waxes, and asphalt and road oil are reported under the Energy sector in the Carbon Emitted from Non-Energy Uses of Fossil Fuels source category (IPCC Source Category 1A).<sup>59</sup>

The emissions are reported in the Energy sector, as opposed to the IPPU sector, to reflect national circumstances in its choice of methodology and to increase transparency of this source category’s unique country-specific data sources and methodology. The country-specific methodology used for the Carbon Emitted from Non-Energy Uses of Fossil Fuels source category is based on a carbon balance (i.e., C inputs-outputs) calculation of the aggregate amount of fossil fuels used for non-energy uses, including inputs of lubricants, waxes, asphalt and road oil (see Section 3.2, Table 3-21). For those inputs, U.S. country-specific data on C stocks and flows are used to develop carbon storage factors, which are calculated as the ratio of the C stored by the fossil fuel non-energy products to the total C content of the fuel consumed, taking into account losses in the production process and during product use.<sup>60</sup> The country-specific methodology to reflect national circumstances starts with the aggregate amount of fossil fuels used for non-energy uses and applies a C balance calculation, breaking out the C emissions from non-energy use of

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<sup>58</sup> See Volume 3: Industrial Processes and Product Use, Chapter 5: Non-Energy Products from Fuels and Solvent Use of the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (IPCC 2006).

<sup>59</sup> Non-methane volatile organic compound (NMVOC) emissions from solvent use are reported separately in the IPPU sector, following Chapter 5 of the *2006 IPCC Guidelines*.

<sup>60</sup> Data and calculations for lubricants and waxes and asphalt and road oil are in Annex 2.3: Methodology and Data for Estimating CO<sub>2</sub> Emissions from Fossil Fuel Combustion.

lubricants, waxes, and asphalt and road oil. Due to U.S. national circumstances, reporting these C emissions separately under IPPU would involve making artificial adjustments to both the C inputs and C outputs of the non-energy use C balance. These artificial adjustments would also result in the C emissions for lubricants, waxes, and asphalt and road oil being reported under IPPU, while the C storage for lubricants, waxes, and asphalt and road oil would be reported under Energy. To avoid presenting an incomplete C balance and a less transparent approach for the Carbon Emitted from Non-Energy Uses of Fossil Fuels source category calculation, the entire calculation of C storage and C emissions is therefore conducted in the Non-Energy Uses of Fossil Fuels category calculation methodology, and both the C storage and C emissions for lubricants, waxes, and asphalt and road oil are reported under the Energy sector.

## 3.3 Incineration of Waste (IPCC Source Category 1A1a)

Incineration is used to manage about 7 to 19 percent of the solid wastes generated in the United States, depending on the source of the estimate and the scope of materials included in the definition of solid waste (EPA 2000; Goldstein and Madtes 2001; Kaufman et al. 2004; Simmons et al. 2006; van Haaren et al. 2010). In the context of this section, waste includes all municipal solid waste (MSW) as well as scrap tires. In the United States, almost all incineration of MSW occurs at waste-to-energy facilities or industrial facilities where useful energy is recovered, and thus emissions from waste incineration are accounted for in the Energy chapter. Similarly, scrap tires are combusted for energy recovery in industrial and utility boilers, pulp and paper mills, and cement kilns. Incineration of waste results in conversion of the organic inputs to CO<sub>2</sub>. According to IPCC guidelines, when the CO<sub>2</sub> emitted is of fossil origin, it is counted as a net anthropogenic emission of CO<sub>2</sub> to the atmosphere. Thus, the emissions from waste incineration are calculated by estimating the quantity of waste combusted and the fraction of the waste that is C derived from fossil sources.

Most of the organic materials in municipal solid wastes are of biogenic origin (e.g., paper, yard trimmings), and have their net C flows accounted for under the Land Use, Land-Use Change, and Forestry chapter. However, some components—plastics, synthetic rubber, synthetic fibers, and carbon black in scrap tires—are of fossil origin. Plastics in the U.S. waste stream are primarily in the form of containers, packaging, and durable goods. Rubber is found in durable goods, such as carpets, and in non-durable goods, such as clothing and footwear. Fibers in municipal solid wastes are predominantly from clothing and home furnishings. As noted above, scrap tires (which contain synthetic rubber and carbon black) are also considered a “non-hazardous” waste and are included in the waste incineration estimate, though waste disposal practices for tires differ from municipal solid waste. Estimates on emissions from hazardous waste incineration can be found in Annex 2.3 and are accounted for as part of the C mass balance for non-energy uses of fossil fuels.

Approximately 29.6 million metric tons of MSW were incinerated in the United States in 2013 (EPA 2015). Data for the amount of MSW incinerated in 2014 were not available, so data for 2014 was assumed to be equal to data for 2013. CO<sub>2</sub> emissions from incineration of waste rose 18 percent since 1990, to an estimated 9.4 MMT CO<sub>2</sub> Eq. (9,421 kt) in 2014, as the volume of scrap tires and other fossil C-containing materials in waste increased (see Table 3-24 and Table 3-25). Waste incineration is also a source of CH<sub>4</sub> and N<sub>2</sub>O emissions (De Soete 1993; IPCC 2006). Methane emissions from the incineration of waste were estimated to be less than 0.05 MMT CO<sub>2</sub> Eq. (less than 0.5 kt CH<sub>4</sub>) in 2014, and have not changed significantly since 1990. Nitrous oxide emissions from the incineration of waste were estimated to be 0.3 MMT CO<sub>2</sub> Eq. (1 kt N<sub>2</sub>O) in 2014, and have not changed significantly since 1990.

**Table 3-24: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from the Incineration of Waste (MMT CO<sub>2</sub> Eq.)**

Gas/Waste Product	1990	2005	2010	2011	2012	2013	2014 <sup>a</sup>
CO <sub>2</sub>	8.0	12.5	11.0	10.5	10.4	9.4	9.4
Plastics	5.6	6.9	6.0	5.8	5.7	4.9	4.9
Synthetic Rubber in Tires	0.3	1.6	1.5	1.4	1.3	1.2	1.2

Carbon Black in Tires	0.4	2.0	1.8	1.7	1.5	1.4	1.4
Synthetic Rubber in MSW	0.9	0.8	0.7	0.7	0.7	0.7	0.7
Synthetic Fibers	0.8	1.2	1.1	1.1	1.1	1.3	1.3
<b>CH<sub>4</sub></b>	+	+	+	+	+	+	+
<b>N<sub>2</sub>O</b>	<b>0.5</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>
<b>Total</b>	<b>8.4</b>	<b>12.8</b>	<b>11.4</b>	<b>10.9</b>	<b>10.7</b>	<b>9.7</b>	<b>9.7</b>

<sup>a</sup> Set equal to 2013 value.

**Table 3-25: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from the Incineration of Waste (kt)**

Gas/Waste Product	1990	2005	2010	2011	2012	2013	2014 <sup>a</sup>
<b>CO<sub>2</sub></b>	<b>7,972</b>	<b>12,454</b>	<b>11,026</b>	<b>10,550</b>	<b>10,362</b>	<b>9,421</b>	<b>9,421</b>
Plastics	5,588	6,919	5,969	5,757	5,709	4,857	4,857
Synthetic Rubber in Tires	308	1,599	1,461	1,363	1,262	1,158	1,158
Carbon Black in Tires	385	1,958	1,783	1,663	1,537	1,412	1,412
Synthetic Rubber in MSW	854	765	701	712	705	729	729
Synthetic Fibers	838	1,212	1,112	1,056	1,149	1,265	1,265
<b>CH<sub>4</sub></b>	+	+	+	+	+	+	+
<b>N<sub>2</sub>O</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

<sup>a</sup> Set equal to 2013 value.

## Methodology

Emissions of CO<sub>2</sub> from the incineration of waste include CO<sub>2</sub> generated by the incineration of plastics, synthetic fibers, and synthetic rubber in MSW, as well as the incineration of synthetic rubber and carbon black in scrap tires. These emissions were estimated by multiplying the amount of each material incinerated by the C content of the material and the fraction oxidized (98 percent). Plastics incinerated in municipal solid wastes were categorized into seven plastic resin types, each material having a discrete C content. Similarly, synthetic rubber is categorized into three product types, and synthetic fibers were categorized into four product types, each having a discrete C content. Scrap tires contain several types of synthetic rubber, carbon black, and synthetic fibers. Each type of synthetic rubber has a discrete C content, and carbon black is 100 percent C. Emissions of CO<sub>2</sub> were calculated based on the amount of scrap tires used for fuel and the synthetic rubber and carbon black content of scrap tires.

More detail on the methodology for calculating emissions from each of these waste incineration sources is provided in Annex 3.7.

For each of the methods used to calculate CO<sub>2</sub> emissions from the incineration of waste, data on the quantity of product combusted and the C content of the product are needed. For plastics, synthetic rubber, and synthetic fibers in MSW, the amount of specific materials discarded as municipal solid waste (i.e., the quantity generated minus the quantity recycled) was taken from *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures* (EPA 2000 through 2003, 2005 through 2014), *Advancing Sustainable Materials Management: Facts and Figures 2013: Assessing Trends in Material Generation, Recycling and Disposal in the United States* (EPA 2015) and detailed unpublished backup data for some years not shown in the reports (Schneider 2007). For 2014, the amount of MSW incinerated was assumed to be equal to that in 2013, due to the lack of available data. The proportion of total waste discarded that is incinerated was derived from Shin (2014). Data on total waste incinerated was not available for 2012 through 2014, so these values were assumed to equal to the 2011 value. For synthetic rubber and carbon black in scrap tires, information was obtained from U.S. Scrap Tire Management Summary for 2005 through 2013 data (RMA 2014). Average C contents for the “Other” plastics category and synthetic rubber in municipal solid wastes were calculated from 1998 and 2002 production statistics: C content for 1990 through 1998 is based on the 1998 value; C content for 1999 through 2001 is the average of 1998 and 2002 values; and C content for 2002 to date is based on the 2002 value. Carbon content for synthetic fibers was calculated from 1999 production statistics. Information about scrap tire composition was taken from the Rubber Manufacturers’ Association internet site (RMA 2012a).

The assumption that 98 percent of organic C is oxidized (which applies to all waste incineration categories for CO<sub>2</sub> emissions) was reported in EPA’s life cycle analysis of greenhouse gas emissions and sinks from management of solid waste (EPA 2006).

Incineration of waste, including MSW, also results in emissions of CH<sub>4</sub> and N<sub>2</sub>O. These emissions were calculated as a function of the total estimated mass of waste incinerated and emission factors. As noted above, CH<sub>4</sub> and N<sub>2</sub>O emissions are a function of total waste incinerated in each year; for 1990 through 2008, these data were derived from the information published in *BioCycle* (van Haaren et al. 2010). Data for 2009 and 2010 were interpolated between 2008 and 2011 values. Data for 2011 were derived from Shin (2014). Data on total waste incinerated was not available in the *BioCycle* data set for 2012 through 2014, so these values were assumed to equal the 2011 *BioCycle* data set value.

Table 3-26 provides data on municipal solid waste discarded and percentage combusted for the total waste stream. The emission factors of N<sub>2</sub>O and CH<sub>4</sub> emissions per quantity of municipal solid waste combusted are default emission factors for the default continuously-fed stoker unit MSW incineration technology type and were taken from IPCC (2006).

**Table 3-26: Municipal Solid Waste Generation (Metric Tons) and Percent Combusted (BioCycle data set)**

Year	Waste Discarded	Waste Incinerated	Incinerated (% of Discards)
1990	235,733,657	30,632,057	13.0%
2005	259,559,787	25,973,520	10.0%
2010	271,592,991	22,714,122	8.0%
2011	273,116,704	20,756,870	7.6%
2012	273,116,704 <sup>a</sup>	20,756,870	7.6%
2013	273,116,704 <sup>a</sup>	20,756,870	7.6%
2014	273,116,704 <sup>a</sup>	20,756,870	7.6%

<sup>a</sup> Assumed equal to 2011 value.

Source: van Haaren et al. (2010)

## Uncertainty and Time-Series Consistency

An Approach 2 Monte Carlo analysis was performed to determine the level of uncertainty surrounding the estimates of CO<sub>2</sub> emissions and N<sub>2</sub>O emissions from the incineration of waste (given the very low emissions for CH<sub>4</sub>, no uncertainty estimate was derived). IPCC Approach 2 analysis allows the specification of probability density functions for key variables within a computational structure that mirrors the calculation of the Inventory estimate. Uncertainty estimates and distributions for waste generation variables (i.e., plastics, synthetic rubber, and textiles generation) were obtained through a conversation with one of the authors of the Municipal Solid Waste in the United States reports. Statistical analyses or expert judgments of uncertainty were not available directly from the information sources for the other variables; thus, uncertainty estimates for these variables were determined using assumptions based on source category knowledge and the known uncertainty estimates for the waste generation variables.

The uncertainties in the waste incineration emission estimates arise from both the assumptions applied to the data and from the quality of the data. Key factors include MSW incineration rate; fraction oxidized; missing data on waste composition; average C content of waste components; assumptions on the synthetic/biogenic C ratio; and combustion conditions affecting N<sub>2</sub>O emissions. The highest levels of uncertainty surround the variables that are based on assumptions (e.g., percent of clothing and footwear composed of synthetic rubber); the lowest levels of uncertainty surround variables that were determined by quantitative measurements (e.g., combustion efficiency, C content of C black).

The results of the Approach 2 quantitative uncertainty analysis are summarized in Table 3-27. Waste incineration CO<sub>2</sub> emissions in 2014 were estimated to be between 8.5 and 11.5 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level.

This indicates a range of 10 percent below to 14 percent above the 2014 emission estimate of 9.4 MMT CO<sub>2</sub> Eq. Also at a 95 percent confidence level, waste incineration N<sub>2</sub>O emissions in 2014 were estimated to be between 0.1 and 0.8 MMT CO<sub>2</sub> Eq. This indicates a range of 53 percent below to 163 percent above the 2014 emission estimate of 0.3 MMT CO<sub>2</sub> Eq.

**Table 3-27: Approach 2 Quantitative Uncertainty Estimates for CO<sub>2</sub> and N<sub>2</sub>O from the Incineration of Waste (MMT CO<sub>2</sub> Eq. and Percent)**

Source	Gas	2014 Emission Estimate (MMT CO <sub>2</sub> Eq.)	Uncertainty Range Relative to Emission Estimate <sup>a</sup>			
			(MMT CO <sub>2</sub> Eq.)		(%)	
			Lower Bound	Upper Bound	Lower Bound	Upper Bound
Incineration of Waste	CO <sub>2</sub>	9.4	8.5	11.5	-10%	+14%
Incineration of Waste	N <sub>2</sub> O	0.3	0.1	0.8	-53%	+163%

<sup>a</sup> Range of emission estimates predicted by Monte Carlo Simulation for a 95 percent confidence interval.

Methodological recalculations were applied to the entire time-series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## QA/QC and Verification

A source-specific Quality Assurance/Quality Control plan was implemented for incineration of waste. This effort included a Tier 1 analysis, as well as portions of a Tier 2 analysis. The Tier 2 procedures that were implemented involved checks specifically focusing on the activity data and specifically focused on the emission factor and activity data sources and methodology used for estimating emissions from incineration of waste. Trends across the time series were analyzed to determine whether any corrective actions were needed. Actions were taken to streamline the activity data throughout the calculations on incineration of waste.

## Recalculations Discussion

For the current Inventory, emission estimates for 2013 have been updated based on *Advancing Sustainable Materials Management: Facts and Figures 2013: Assessing Trends in Material Generation, Recycling and Disposal in the United States* (EPA 2015).

The data which calculates the percent incineration was updated in the current Inventory. *Biocycle* has not released a new State of Garbage in America Report since 2010 (with 2008 data), which used to be a semi-annual publication which publishes the results of the nation-wide MSW survey. The results of the survey have been published in Shin 2014. This provided updated incineration data for 2011, so the generation and incineration data for 2012 through 2014 are assumed equivalent to the 2011 values. The data for 2009 and 2010 were based on interpolations between 2008 and 2011.

## Planned Improvements

The availability of facility-level waste incineration data through EPA's Greenhouse Gas Reporting Program (GHGRP) will be examined to help better characterize waste incineration operations in the United States. This characterization could include future improvements as to the operations involved in waste incineration for energy, whether in the power generation sector or the industrial sector. Additional examinations will be necessary as, unlike the reporting requirements for this chapter under the UNFCCC reporting guidelines,<sup>61</sup> some facility-level waste incineration emissions reported under EPA's GHGRP may also include industrial process emissions. In line with UNFCCC reporting guidelines, emissions for waste incineration with energy recovery are included in this chapter, while process emissions are included in the Industrial Processes and Product Use chapter of this report. In

<sup>61</sup> See <<http://unfccc.int/resource/docs/2006/sbsta/eng/09.pdf>>.

examining data from EPA’s GHGRP that would be useful to improve the emission estimates for the waste incineration category, particular attention will also be made to ensure time series consistency, as the facility-level reporting data from EPA’s GHGRP are not available for all inventory years as reported in this Inventory. Additionally, analyses will focus on ensuring CO<sub>2</sub> emissions from the biomass component of waste are separated in the facility-level reported data, and on maintaining consistency with national waste generation and fate statistics currently used to estimate total, national U.S. greenhouse gas emissions. In implementing improvements and integration of data from EPA’s GHGRP, the latest guidance from the IPCC on the use of facility-level data in national inventories will be relied upon.<sup>62</sup> GHGRP data is available for MSW combustors, which contains information on the CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions from MSW combustion, plus the fraction of the emissions that are biogenic. To calculate biogenic versus total CO<sub>2</sub> emissions, a default biogenic fraction of 0.6 is used. The biogenic fraction will be calculated using the current input data and assumptions to verify the current MSW emission estimates.

If GHGRP data would not provide a more accurate estimate of the amount of solid waste combusted, new data sources for the total MSW generated will be explored given that the data previously published semi-annually in Biocycle (van Haaren et al. 2010) has ceased to be published, according to the authors. Equivalent data was derived from Shin (2014) for 2011. A new methodology would be developed based on the available data within the annual update of EPA’s *Advancing Sustainable Materials Management: Facts and Figures 2013: Assessing Trends in Material Generation, Recycling and Disposal in the United States* (EPA 2015). In developing the new methodology, appropriate assumptions would need to be made to ensure that the MSW figures included all waste. Additionally, the carbon content of the synthetic fiber will be updated based on each year’s production mix.

Additional improvements will be conducted to improve the transparency in the current reporting of waste incineration. Currently, hazardous industrial waste incineration is included within the overall calculations for the Carbon Emitted from Non-Energy Uses of Fossil Fuels category. Waste incineration activities that do not include energy recovery will be examined. Synthetic fibers within scrap tires are not included in this analysis and will be explored for future inventories. The carbon content of fibers within scrap tires would be used to calculate the associated incineration emissions. Updated fiber content data from the Fiber Economics Bureau will also be explored.

## 3.4 Coal Mining (IPCC Source Category 1B1a)

Three types of coal mining–related activities release CH<sub>4</sub> to the atmosphere: underground mining, surface mining, and post-mining (i.e., coal-handling) activities. While surface mines account for the majority of U.S. coal production, underground coal mines contribute the largest share of CH<sub>4</sub> emissions (see Table 3-29 and Table 3-30) due to the higher CH<sub>4</sub> content of coal in the deeper underground coal seams. In 2014, 345 underground coal mines and 613 surface mines were operating in the United States. In recent years the total number of active coal mines in the United States has declined. In 2014, the United States was the second largest coal producer in the world (906 MMT), after China (3,650 MMT) and followed by India (668 MMT) (IEA 2015).

**Table 3-28: Coal Production (kt)**

Year	Underground		Surface		Total	
	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production
1990	1,683	384,244	1,656	546,808	3,339	931,052
2005	586	334,398	789	691,448	1,398	1,025,846
2010	497	305,862	760	676,177	1,257	982,039
2011	508	313,529	788	684,807	1,296	998,337
2012	488	310,608	719	610,307	1,207	920,915
2013	395	309,546	637	581,270	1,032	890,815
2014	345	321,783	613	583,974	958	905,757

<sup>62</sup> See <[http://www.ipcc-nggip.iges.or.jp/meeting/pdffiles/1008\\_Model\\_and\\_Facility\\_Level\\_Data\\_Report.pdf](http://www.ipcc-nggip.iges.or.jp/meeting/pdffiles/1008_Model_and_Facility_Level_Data_Report.pdf)>.

Underground mines liberate CH<sub>4</sub> from ventilation systems and from degasification systems. Ventilation systems pump air through the mine workings to dilute noxious gases and ensure worker safety; these systems can exhaust significant amounts of CH<sub>4</sub> to the atmosphere in low concentrations. Degasification systems are wells drilled from the surface or boreholes drilled inside the mine that remove large, often highly concentrated volumes of CH<sub>4</sub> before, during, or after mining. Some mines recover and use CH<sub>4</sub> generated from ventilation and degasification systems, thereby reducing emissions to the atmosphere.

Surface coal mines liberate CH<sub>4</sub> as the overburden is removed and the coal is exposed to the atmosphere. CH<sub>4</sub> emissions are normally a function of coal rank (a classification related to the percentage of carbon in the coal) and depth. Surface coal mines typically produce lower-rank coals and remove less than 250 feet of overburden, so their level of emissions is much lower than from underground mines.

In addition, CH<sub>4</sub> is released during post-mining activities, as the coal is processed, transported, and stored for use.

Total CH<sub>4</sub> emissions in 2014 were estimated to be 2,703 kt (67.6 MMT CO<sub>2</sub> eq.), a decline of 30 percent since 1990 (see Table 3-29 and Table 3-30). Of this amount, underground mines accounted for approximately 73 percent, surface mines accounted for 14 percent, and post-mining emissions accounted for 13 percent.

**Table 3-29: CH<sub>4</sub> Emissions from Coal Mining (MMT CO<sub>2</sub> Eq.)**

Activity	1990	2005	2010	2011	2012	2013	2014
Underground (UG) Mining	74.2	42.0	61.6	50.2	47.3	46.2	49.1
Liberated	80.8	59.7	85.2	71.0	65.8	65.8	65.7
Recovered & Used	(6.6)	(17.7)	(23.6)	(20.8)	(18.5)	(19.6)	(16.6)
Surface Mining	10.8	11.9	11.5	11.6	10.3	9.7	9.6
Post-Mining (UG)	9.2	7.6	6.8	6.9	6.7	6.6	6.7
Post-Mining (Surface)	2.3	2.6	2.5	2.5	2.2	2.1	2.1
<b>Total</b>	<b>96.5</b>	<b>64.1</b>	<b>82.3</b>	<b>71.2</b>	<b>66.5</b>	<b>64.6</b>	<b>67.6</b>

Notes: Totals may not sum due to independent rounding. Parentheses indicate negative values.

**Table 3-30: CH<sub>4</sub> Emissions from Coal Mining (kt)**

Activity	1990	2005	2010	2011	2012	2013	2014
UG Mining	2,968	1,682	2,463	2,008	1,891	1,849	1,964
Liberated	3,234	2,390	3,406	2,839	2,631	2,633	2,627
Recovered & Used	(266)	(708)	(943)	(831)	(740)	(784)	(662)
Surface Mining	430	475	461	465	410	388	386
Post-Mining (UG)	368	306	270	276	268	263	270
Post-Mining (Surface)	93	103	100	101	89	84	84
<b>Total</b>	<b>3,860</b>	<b>2,565</b>	<b>3,293</b>	<b>2,849</b>	<b>2,658</b>	<b>2,584</b>	<b>2,703</b>

Notes: Totals may not sum due to independent rounding. Parentheses indicate negative values.

## Methodology

The methodology for estimating CH<sub>4</sub> emissions from coal mining consists of two steps:

- Estimate emissions from underground mines. These emissions have two sources: ventilation systems and degasification systems. They are estimated on a mine-by-mine basis, then summed to determine total CH<sub>4</sub> liberated. The CH<sub>4</sub> recovered and used is then subtracted from this total, resulting in an estimate of net emissions to the atmosphere.
- Estimate CH<sub>4</sub> emissions from surface mines and post-mining activities. Unlike the methodology for underground mines, which uses mine-specific data, the methodology for estimating emissions from surface mines and post-mining activities consists of multiplying basin-specific coal production by basin-specific gas content and an emission factor.

## Step 1: Estimate CH<sub>4</sub> Liberated and CH<sub>4</sub> Emitted from Underground Mines

Underground mines generate CH<sub>4</sub> from ventilation systems and from degasification systems. Some mines recover and use the generated CH<sub>4</sub>, thereby reducing emissions to the atmosphere. Total CH<sub>4</sub> emitted from underground mines equals the CH<sub>4</sub> liberated from ventilation systems, plus the CH<sub>4</sub> liberated from degasification systems, minus the CH<sub>4</sub> recovered and used.

### *Step 1.1: Estimate CH<sub>4</sub> Liberated from Ventilation Systems*

To estimate CH<sub>4</sub> liberated from ventilation systems, EPA uses data collected through its Greenhouse Gas Reporting Program (GHGRP) (subpart FF, “Underground Coal Mines”), data provided by the U.S. Mine Safety and Health Administration (MSHA), and occasionally data collected from other sources on a site-specific level (e.g., state data). Since 2011, the nation’s “gassiest” underground coal mines—those that liberate more than 36,500,000 actual cubic feet of CH<sub>4</sub> per year (about 14,700 MT CO<sub>2</sub> eq.)—have been required to report to EPA’s GHGRP (EPA 2015).<sup>63</sup> Mines that report to the GHGRP must report quarterly measurements of CH<sub>4</sub> emissions from ventilation systems to EPA; they have the option of recording their own measurements, or using the measurements taken by MSHA as part of that agency’s quarterly safety inspections of all mines in the United States with detectable CH<sub>4</sub> concentrations.<sup>64</sup>

Since 2013, ventilation emission estimates have been calculated based on both GHGRP data submitted by underground mines that recorded their own measurements, and on quarterly measurement data obtained directly from MSHA for the remaining mines (not MSHA data reported by the mines to the GHGRP).<sup>65</sup> The quarterly measurements are used to determine the average daily emissions rate for the reporting year quarter.

### *Step 1.2: Estimate CH<sub>4</sub> Liberated from Degasification Systems*

Particularly gassy underground mines also use degasification systems (e.g., wells or boreholes) to remove CH<sub>4</sub> before, during, or after mining. This CH<sub>4</sub> can then be collected for use or vented to the atmosphere. Twenty-five mines used degasification systems in 2014, and the CH<sub>4</sub> removed through these systems was reported to EPA’s GHGRP (EPA 2015). Based on the weekly measurements reported to EPA’s GHGRP, degasification data summaries for each mine were added together to estimate the CH<sub>4</sub> liberated from degasification systems. Sixteen of the 25 mines with degasification systems had operational CH<sub>4</sub> recovery and use projects (see step 1.3 below), and GHGRP reports show the remaining nine mines vented CH<sub>4</sub> from degasification systems to the atmosphere.<sup>66</sup>

Degasification volumes for the life of any pre-mining wells are attributed to the mine as emissions in the year in which the well is mined through.<sup>67</sup> EPA’s GHGRP does not require gas production from virgin coal seams (coalbed methane) to be reported by coal mines under subpart FF. Most pre-mining wells drilled from the surface are considered coalbed methane wells and are reported under another subpart of the program (subpart W, “Petroleum and Natural Gas Systems”). As a result, for the 10 mines with degasification systems that include pre-mining wells, GHGRP information was supplemented with historical data from state gas well production databases (GSA 2016, WVGES 2015), as well as with mine-specific information regarding the dates on which the pre-mining wells are mined through (JWR 2010, El Paso 2009).

Degasification information reported to EPA’s GHGRP by underground coal mines was the primary source of data used to develop estimates of CH<sub>4</sub> liberated from degasification systems. Data reported to EPA’s GHGRP were used to estimate CH<sub>4</sub> liberated from degasification systems at 20 of the 25 mines that employed degasification systems in 2014. For the other five mines (all with pre-mining wells from which CH<sub>4</sub> was recovered), GHGRP data—along with supplemental information from state gas production databases (GSA 2016, WVGES 2015)—were used to

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<sup>63</sup> Underground coal mines report to EPA under Subpart FF of the GHGRP. In 2014, 128 underground coal mines reported to the program.

<sup>64</sup> MSHA records coal mine CH<sub>4</sub> readings with concentrations of greater than 50 ppm (parts per million) CH<sub>4</sub>. Readings below this threshold are considered non-detectable.

<sup>65</sup> EPA has determined that certain mines are having difficulty interpreting the MSHA data so that they report them correctly to the GHGRP. EPA is working with these mines to correct their GHGRP reports, and in the meantime is relying on data obtained directly from MSHA for purposes of the national inventory.

<sup>66</sup> Several of the mines venting CH<sub>4</sub> from degasification systems use a small portion the gas to fuel gob well blowers in remote locations where electricity is not available. However, this CH<sub>4</sub> use is not considered to be a formal recovery and use project.

<sup>67</sup> A well is “mined through” when coal mining development or the working face intersects the borehole or well.



estimate CH<sub>4</sub> liberated from degasification systems. For one mine, due to a lack of mine-provided information used in prior years and a GHGRP reporting discrepancy, the CH<sub>4</sub> liberated was based on both the reported GHGRP data (for the vented portion of CH<sub>4</sub> recovered) and an estimate from historical mine-provided CH<sub>4</sub> recovery and use rates based on gas sales records (JWR 2010, El Paso 2009).

### *Step 1.3: Estimate CH<sub>4</sub> Recovered from Ventilation and Degasification Systems, and Utilized or Destroyed (Emissions Avoided)*

Sixteen mines had CH<sub>4</sub> recovery and use projects in place in 2014. Fourteen of these mines sold the recovered CH<sub>4</sub> to a pipeline, including one that also used CH<sub>4</sub> to fuel a thermal coal dryer. In addition, one mine used recovered CH<sub>4</sub> for electrical power generation, and one used recovered CH<sub>4</sub> to heat mine ventilation air.

Ten of the 16 mines deployed degasification systems in 2014; for those mines, estimates of CH<sub>4</sub> recovered from the systems were exclusively based on GHGRP data. Based on weekly measurements, the GHGRP degasification destruction data summaries for each mine were added together to estimate the CH<sub>4</sub> recovered and used from degasification systems.

All 10 mines with degasification systems used pre-mining wells as part of those systems, but only four of them intersected pre-mining wells in 2014. GHGRP and supplemental data were used to estimate CH<sub>4</sub> recovered and used at two of these four mines; supplemental data alone (GSA 2016) were used for the other two mines, which reported to EPA's GHGRP as a single entity. Supplemental information was used for these four mines because estimating CH<sub>4</sub> recovery and use from pre-mining wells requires additional data (not reported under subpart FF of EPA's GHGRP, see discussion in step 1.2 above) to account for the emissions avoided. The supplemental data came from state gas production databases, as well as mine-specific information on the timing of mined-through pre-mining wells.

GHGRP information was not used to estimate CH<sub>4</sub> recovered and used at two mines. At one of these mines, a portion (16 percent) of reported CH<sub>4</sub> vented was applied to an ongoing mine air heating project. Because of a lack of mine-provided information used in prior years and a GHGRP reporting discrepancy, the 2014 CH<sub>4</sub> recovered and used at the other mine was based on an estimate from historical mine-provided CH<sub>4</sub> recovery and use rates (including emissions avoided from pre-mining wells).

In 2014, one mine destroyed a portion of its CH<sub>4</sub> emissions from ventilation systems using thermal oxidation technology. The amount of CH<sub>4</sub> recovered and destroyed by the project was determined through publicly-available emission reduction project information (CAR 2015).

## **Step 2: Estimate CH<sub>4</sub> Emitted from Surface Mines and Post-Mining Activities**

Mine-specific data were not available for estimating CH<sub>4</sub> emissions from surface coal mines or for post-mining activities. For surface mines, basin-specific coal production obtained from the Energy Information Administration's Annual Coal Report (EIA 2015) was multiplied by basin-specific CH<sub>4</sub> contents (EPA 1996, 2005) and a 150 percent emission factor (to account for CH<sub>4</sub> from over- and under-burden) to estimate CH<sub>4</sub> emissions (see King 1994, Saghafi 2013). For post-mining activities, basin-specific coal production was multiplied by basin-specific gas contents and a mid-range 32.5 percent emission factor for CH<sub>4</sub> desorption during coal transportation and storage (Creedy 1993). Basin-specific *in situ* gas content data were compiled from AAPG (1984) and USBM (1986).

## **Uncertainty and Time-Series Consistency**

A quantitative uncertainty analysis was conducted for the coal mining source category using the IPCC-recommended Approach 2 uncertainty estimation methodology. Because emission estimates from underground ventilation systems were based on actual measurement data from EPA's GHGRP or from MSHA, uncertainty is relatively low. A degree of imprecision was introduced because the ventilation air measurements used were not continuous but rather quarterly instantaneous readings that were used to determine the average daily emissions rate for the quarter. Additionally, the measurement equipment used can be expected to have resulted in an average of 10 percent overestimation of annual CH<sub>4</sub> emissions (Mutmansky & Wang 2000). GHGRP data were used for a significant number of the mines that reported their own measurements to the program beginning in 2013; however, the equipment uncertainty is applied to both GHGRP and MSHA data.

Estimates of CH<sub>4</sub> recovered by degasification systems are relatively certain for utilized CH<sub>4</sub> because of the availability of GHGRP data and gas sales information. Many of the recovery estimates use data on wells within 100 feet of a mined area. However, uncertainty exists concerning the radius of influence of each well. The number of wells counted, and thus the avoided emissions, may vary if the drainage area is found to be larger or smaller than estimated.

EPA's GHGRP requires weekly CH<sub>4</sub> monitoring of mines that report degasification systems, and continuous CH<sub>4</sub> monitoring is required for utilized CH<sub>4</sub> on- or off-site. Since 2012, GHGRP data have been used to estimate CH<sub>4</sub> emissions from vented degasification wells, reducing the uncertainty associated with prior MSHA estimates used for this subsource. Beginning in 2013, GHGRP data were also used for determining CH<sub>4</sub> recovery and use at mines without publicly available gas usage or sales records, which has reduced the uncertainty from previous estimation methods that were based on information from coal industry contacts.

Surface mining and post-mining emissions are associated with considerably more uncertainty than underground mines, because of the difficulty in developing accurate emission factors from field measurements. However, since underground emissions constitute the majority of total coal mining emissions, the uncertainty associated with underground emissions is the primary factor that determines overall uncertainty. The results of the Approach 2 quantitative uncertainty analysis are summarized in Table 3-31. Coal mining CH<sub>4</sub> emissions in 2014 were estimated to be between 59.9 and 77.4 MMT CO<sub>2</sub> eq. at a 95 percent confidence level. This indicates a range of 11.9 percent below to 15.3 percent above the 2014 emission estimate of 67.6 MMT CO<sub>2</sub> eq.

**Table 3-31: Approach 2 Quantitative Uncertainty Estimates for CH<sub>4</sub> Emissions from Coal Mining (MMT CO<sub>2</sub> Eq. and Percent)**

Source	Gas	2014 Emission Estimate (MMT CO <sub>2</sub> Eq.)	Uncertainty Range Relative to Emission Estimate <sup>a</sup> (MMT CO <sub>2</sub> Eq.)			
			Lower Bound	Upper Bound	Lower Bound (%)	Upper Bound (%)
Coal mining	CH <sub>4</sub>	67.6	59.9	77.4	-11.9%	+15.3%

<sup>a</sup> Range of emission estimates predicted by Monte Carlo stochastic simulation for a 95 percent confidence interval.  
Note: Emissions values are presented in CO<sub>2</sub> equivalent mass units using IPCC AR4 GWP values.

Methodological recalculations were applied to the entire time-series to ensure consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the methodology section.

## Recalculations Discussion

For the current Inventory, no recalculations were performed on prior inventory years.

## Planned Improvements

Future improvements to the coal mining category will include continued analysis and integration into the national inventory of the degasification quantities and ventilation emissions data reported by underground coal mines to EPA's GHGRP. A higher reliance on EPA's GHGRP will provide greater consistency and accuracy in future inventories. MSHA data will serve as a quality assurance tool for validating GHGRP data. Reconciliation of the GHGRP and Inventory data sets is still in progress. In implementing improvements and integrating data from EPA's GHGRP, the latest guidance from the IPCC on the use of facility-level data in national inventories will be relied on (IPCC 2011).

## 3.5 Abandoned Underground Coal Mines (IPCC Source Category 1B1a)

Underground coal mines contribute the largest share of coal mine methane (CMM) emissions, with active underground mines the leading source of underground emissions. However, mines also continue to release CH<sub>4</sub> after closure. As mines mature and coal seams are mined through, mines are closed and abandoned. Many are sealed and some flood through intrusion of groundwater or surface water into the void. Shafts or portals are generally filled with gravel and capped with a concrete seal, while vent pipes and boreholes are plugged in a manner similar to oil and gas wells. Some abandoned mines are vented to the atmosphere to prevent the buildup of CH<sub>4</sub> that may find its way to surface structures through overburden fractures. As work stops within the mines, CH<sub>4</sub> liberation decreases but it does not stop completely. Following an initial decline, abandoned mines can liberate CH<sub>4</sub> at a near-steady rate over an extended period of time, or, if flooded, produce gas for only a few years. The gas can migrate to the surface through the conduits described above, particularly if they have not been sealed adequately. In addition, diffuse emissions can occur when CH<sub>4</sub> migrates to the surface through cracks and fissures in the strata overlying the coal mine. The following factors influence abandoned mine emissions:

- Time since abandonment;
- Gas content and adsorption characteristics of coal;
- CH<sub>4</sub> flow capacity of the mine;
- Mine flooding;
- Presence of vent holes; and
- Mine seals.

Annual gross abandoned mine CH<sub>4</sub> emissions ranged from 7.2 to 10.8 MMT CO<sub>2</sub> Eq. from 1990 through 2014, varying, in general, by less than 1 percent to approximately 19 percent from year to year. Fluctuations were due mainly to the number of mines closed during a given year as well as the magnitude of the emissions from those mines when active. Gross abandoned mine emissions peaked in 1996 (10.8 MMT CO<sub>2</sub> Eq.) due to the large number of gassy mine<sup>68</sup> closures from 1994 to 1996 (72 gassy mines closed during the three-year period). In spite of this rapid rise, abandoned mine emissions have been generally on the decline since 1996. Since 2002, there have been fewer than twelve gassy mine closures each year. There were seven gassy mine closures in 2014. In 2014, gross abandoned mine emissions decreased slightly to 8.7 MMT CO<sub>2</sub> Eq. (see Table 3-32 and Table 3-33). Gross emissions are reduced by CH<sub>4</sub> recovered and used at 37 mines, resulting in net emissions in 2014 of 6.3 MMT CO<sub>2</sub> Eq.

**Table 3-32: CH<sub>4</sub> Emissions from Abandoned Coal Mines (MMT CO<sub>2</sub> Eq.)**

Activity	1990	2005	2010	2011	2012	2013	2014
Abandoned Underground Mines	7.2	8.4	9.7	9.3	8.9	8.8	8.7
Recovered & Used	+	1.8	3.2	2.9	2.7	2.6	2.4
<b>Total</b>	<b>7.2</b>	<b>6.6</b>	<b>6.6</b>	<b>6.4</b>	<b>6.2</b>	<b>6.2</b>	<b>6.3</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

Note: Totals may not sum due to independent rounding.

<sup>68</sup> A mine is considered a “gassy” mine if it emits more than 100 thousand cubic feet of CH<sub>4</sub> per day (100 mcf/d).

**Table 3-33: CH<sub>4</sub> Emissions from Abandoned Coal Mines (kt)**

Activity	1990	2005	2010	2011	2012	2013	2014
Abandoned Underground Mines	288	334	389	373	358	353	350
Recovered & Used	+	70	126	116	109	104	97
<b>Total</b>	<b>288</b>	<b>264</b>	<b>263</b>	<b>257</b>	<b>249</b>	<b>249</b>	<b>253</b>

+ Does not exceed 0.5 kt

Note: Totals may not sum due to independent rounding.

## Methodology

Estimating CH<sub>4</sub> emissions from an abandoned coal mine requires predicting the emissions of a mine from the time of abandonment through the inventory year of interest. The flow of CH<sub>4</sub> from the coal to the mine void is primarily dependent on the mine's emissions when active and the extent to which the mine is flooded or sealed. The CH<sub>4</sub> emission rate before abandonment reflects the gas content of the coal, rate of coal mining, and the flow capacity of the mine in much the same way as the initial rate of a water-free conventional gas well reflects the gas content of the producing formation and the flow capacity of the well. A well or a mine which produces gas from a coal seam and the surrounding strata will produce less gas through time as the reservoir of gas is depleted. Depletion of a reservoir will follow a predictable pattern depending on the interplay of a variety of natural physical conditions imposed on the reservoir. The depletion of a reservoir is commonly modeled by mathematical equations and mapped as a type curve. Type curves which are referred to as decline curves have been developed for abandoned coal mines. Existing data on abandoned mine emissions through time, although sparse, appear to fit the hyperbolic type of decline curve used in forecasting production from natural gas wells.

In order to estimate CH<sub>4</sub> emissions over time for a given abandoned mine, it is necessary to apply a decline function, initiated upon abandonment, to that mine. In the analysis, mines were grouped by coal basin with the assumption that they will generally have the same initial pressures, permeability and isotherm. As CH<sub>4</sub> leaves the system, the reservoir pressure (Pr) declines as described by the isotherm's characteristics. The emission rate declines because the mine pressure (Pw) is essentially constant at atmospheric pressure for a vented mine, and the productivity index (PI), which is expressed as the flow rate per unit of pressure change, is essentially constant at the pressures of interest (atmospheric to 30 psia). The CH<sub>4</sub> flow rate is determined by the laws of gas flow through porous media, such as Darcy's Law. A rate-time equation can be generated that can be used to predict future emissions. This decline through time is hyperbolic in nature and can be empirically expressed as:

$$q = q_i (1 + bD_i t)^{-1/b}$$

where,

- q = Gas flow rate at time t in million cubic feet per day (mmcf/d)
- q<sub>i</sub> = Initial gas flow rate at time zero (t<sub>0</sub>), mmcf/d
- b = The hyperbolic exponent, dimensionless
- D<sub>i</sub> = Initial decline rate, 1/yr
- t = Elapsed time from t<sub>0</sub> (years)

This equation is applied to mines of various initial emission rates that have similar initial pressures, permeability and adsorption isotherms (EPA 2004).

The decline curves created to model the gas emission rate of coal mines must account for factors that decrease the rate of emissions after mining activities cease, such as sealing and flooding. Based on field measurement data, it was assumed that most U.S. mines prone to flooding will become completely flooded within eight years and therefore will no longer have any measurable CH<sub>4</sub> emissions. Based on this assumption, an average decline rate for flooded mines was established by fitting a decline curve to emissions from field measurements. An exponential equation was developed from emissions data measured at eight abandoned mines known to be filling with water located in two of the five basins. Using a least squares, curve-fitting algorithm, emissions data were matched to the exponential equation shown below. There was not enough data to establish basin-specific equations as was done with the vented, non-flooding mines (EPA 2004).

$$q = q_i e^{-Dt}$$

where,

- q = Gas flow rate at time t in mmcf/d
- q<sub>i</sub> = Initial gas flow rate at time zero (t<sub>0</sub>), mmcf/d
- D = Decline rate, 1/yr
- t = Elapsed time from t<sub>0</sub> (years)

Seals have an inhibiting effect on the rate of flow of CH<sub>4</sub> into the atmosphere compared to the flow rate that would exist if the mine had an open vent. The total volume emitted will be the same, but emissions will occur over a longer period of time. The methodology, therefore, treats the emissions prediction from a sealed mine similarly to the emissions prediction from a vented mine, but uses a lower initial rate depending on the degree of sealing. A computational fluid dynamics simulator was used with the conceptual abandoned mine model to predict the decline curve for inhibited flow. The percent sealed is defined as  $100 \times (1 - [\text{initial emissions from sealed mine} / \text{emission rate at abandonment prior to sealing}])$ . Significant differences are seen between 50 percent, 80 percent and 95 percent closure. These decline curves were therefore used as the high, middle, and low values for emissions from sealed mines (EPA 2004).

For active coal mines, those mines producing over 100 thousand cubic feet per day (mcf/d) account for 98 percent of all CH<sub>4</sub> emissions. This same relationship is assumed for abandoned mines. It was determined that the 500 abandoned mines closed after 1972 produced emissions greater than 100 mcf/d when active. Further, the status of 291 of the 500 mines (or 58 percent) is known to be either: 1) vented to the atmosphere; 2) sealed to some degree (either earthen or concrete seals); or, 3) flooded (enough to inhibit CH<sub>4</sub> flow to the atmosphere). The remaining 42 percent of the mines whose status is unknown were placed in one of these three categories by applying a probability distribution analysis based on the known status of other mines located in the same coal basin (EPA 2004).

**Table 3-34: Number of Gassy Abandoned Mines Present in U.S. Basins in 2014, grouped by Class according to Post-Abandonment State**

Basin	Sealed	Vented	Flooded	Total Known	Unknown	Total Mines
Central Appl.	37	25	51	113	137	250
Illinois	32	3	14	49	27	76
Northern Appl.	43	22	16	81	36	117
Warrior Basin	0	0	16	16	0	16
Western Basins	27	3	2	32	9	41
<b>Total</b>	<b>139</b>	<b>53</b>	<b>99</b>	<b>291</b>	<b>209</b>	<b>500</b>

Inputs to the decline equation require the average emission rate and the date of abandonment. Generally this data is available for mines abandoned after 1971; however, such data are largely unknown for mines closed before 1972. Information that is readily available, such as coal production by state and county, is helpful but does not provide enough data to directly employ the methodology used to calculate emissions from mines abandoned before 1972. It is assumed that pre-1972 mines are governed by the same physical, geologic, and hydrologic constraints that apply to post-1971 mines; thus, their emissions may be characterized by the same decline curves.

During the 1970s, 78 percent of CH<sub>4</sub> emissions from coal mining came from seventeen counties in seven states. In addition, mine closure dates were obtained for two states, Colorado and Illinois, for the hundred year period extending from 1900 through 1999. The data were used to establish a frequency of mine closure histogram (by decade) and applied to the other five states with gassy mine closures. As a result, basin-specific decline curve equations were applied to the 145 gassy coal mines estimated to have closed between 1920 and 1971 in the United States, representing 78 percent of the emissions. State-specific, initial emission rates were used based on average coal mine CH<sub>4</sub> emissions rates during the 1970s (EPA 2004).

Abandoned mine emission estimates are based on all closed mines known to have active mine CH<sub>4</sub> ventilation emission rates greater than 100 mcf/d at the time of abandonment. For example, for 1990 the analysis included 145 mines closed before 1972 and 258 mines closed between 1972 and 1990. Initial emission rates based on MSHA reports, time of abandonment, and basin-specific decline curves influenced by a number of factors were used to calculate annual emissions for each mine in the database (MSHA 2015). Coal mine degasification data are not available for years prior to 1990, thus the initial emission rates used reflect ventilation emissions only for pre-1990 closures. CH<sub>4</sub> degasification amounts were added to the quantity of CH<sub>4</sub> vented to determine the total CH<sub>4</sub> liberation rate for all mines that closed between 1992 and 2014. Since the sample of gassy mines is assumed to

account for 78 percent of the pre-1972 and 98 percent of the post-1971 abandoned mine emissions, the modeled results were multiplied by 1.22 and 1.02 to account for all U.S. abandoned mine emissions.

From 1993 through 2014, emission totals were downwardly adjusted to reflect abandoned mine CH<sub>4</sub> emissions avoided from those mines. The Inventory totals were not adjusted for abandoned mine reductions from 1990 through 1992 because no data was reported for abandoned coal mining CH<sub>4</sub> recovery projects during that time.

## Uncertainty and Time-Series Consistency

A quantitative uncertainty analysis was conducted to estimate the uncertainty surrounding the estimates of emissions from abandoned underground coal mines. The uncertainty analysis described below provides for the specification of probability density functions for key variables within a computational structure that mirrors the calculation of the inventory estimate. The results provide the range within which, with 95 percent certainty, emissions from this source category are likely to fall.

As discussed above, the parameters for which values must be estimated for each mine in order to predict its decline curve are: 1) the coal's adsorption isotherm; 2) CH<sub>4</sub> flow capacity as expressed by permeability; and 3) pressure at abandonment. Because these parameters are not available for each mine, a methodological approach to estimating emissions was used that generates a probability distribution of potential outcomes based on the most likely value and the probable range of values for each parameter. The range of values is not meant to capture the extreme values, but rather values that represent the highest and lowest quartile of the cumulative probability density function of each parameter. Once the low, mid, and high values are selected, they are applied to a probability density function.

The results of the Approach 2 quantitative uncertainty analysis are summarized in Table 3-35. Annual abandoned coal mine CH<sub>4</sub> emissions in 2014 were estimated to be between 5.2 and 7.9 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level. This indicates a range of 18 percent below to 24 percent above the 2014 emission estimate of 6.3 MMT CO<sub>2</sub> Eq. One of the reasons for the relatively narrow range is that mine-specific data is available for use in the methodology for mines closed after 1972. Emissions from mines closed prior to 1972 have the largest degree of uncertainty because no mine-specific CH<sub>4</sub> liberation rates exist.

**Table 3-35: Approach 2 Quantitative Uncertainty Estimates for CH<sub>4</sub> Emissions from Abandoned Underground Coal Mines (MMT CO<sub>2</sub> Eq. and Percent)**

Source	Gas	2014 Emission Estimate (MMT CO <sub>2</sub> Eq.)	Uncertainty Range Relative to Emission Estimate <sup>a</sup>			
			Lower Bound	Upper Bound	Lower Bound (%)	Upper Bound (%)
Abandoned Underground Coal Mines	CH <sub>4</sub>	6.3	5.2	7.9	-18%	+24%

<sup>a</sup> Range of emission estimates predicted by Monte Carlo Simulation for a 95 percent confidence interval.

Methodological recalculations were applied to the entire time-series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## 3.6 Petroleum Systems (IPCC Source Category 1B2a)

Methane emissions from petroleum systems are primarily associated with onshore and offshore crude oil production, transportation, and refining operations. During these activities, CH<sub>4</sub> is released to the atmosphere as fugitive emissions, vented emissions, emissions from operational upsets, and emissions from fuel combustion. Fugitive and vented CO<sub>2</sub> emissions from petroleum systems are primarily associated with crude oil production and refining

operations but are negligible in transportation operations. Total CH<sub>4</sub> emissions from petroleum systems in 2014 were 68.1 MMT CO<sub>2</sub> Eq. (2,726 kt).

*Production Field Operations.* Production field operations account for approximately 99 percent of total CH<sub>4</sub> emissions from petroleum systems. Vented CH<sub>4</sub> from field operations account for approximately 92 percent of the net emissions from the production sector, fugitive emissions are approximately 5 percent, uncombusted CH<sub>4</sub> emissions (i.e., unburned fuel) account for approximately 4 percent, and process upset emissions are 0.1 percent. The most dominant sources of emissions from production field operations are pneumatic controllers, oil tanks, chemical injection pumps, offshore oil platforms, hydraulic fractured oil well completions, gas engines, and oil wellheads. These sources alone emit over 95 percent of the production field operations emissions. The remaining 5 percent of the emissions are distributed among around 20 additional activities.

Since 1990, CH<sub>4</sub> emissions from production field operations have increased by nearly 80 percent. Total methane emissions (from all segments) have increased by around 5 percent from 2013 levels.

Vented CO<sub>2</sub> associated with production field operations account for approximately 99 percent of the total CO<sub>2</sub> emissions from production field operations, while fugitive and process upsets together account for approximately 1 percent of the emissions. The most dominant sources of CO<sub>2</sub> emissions are oil tanks, pneumatic controllers, chemical injection pumps, and offshore oil platforms. These five sources together account for slightly over 97 percent of the non-combustion CO<sub>2</sub> emissions from production field operations, while the remaining 3 percent of the emissions is distributed among around 20 additional activities. Note that CO<sub>2</sub> from associated gas flaring is accounted in natural gas systems production emissions. Total CO<sub>2</sub> emissions from flaring for both natural gas and oil were 20.8 MMT CO<sub>2</sub> Eq. in 2014.

*Crude Oil Transportation.* Crude oil transportation activities account for approximately 0.3 percent of total CH<sub>4</sub> emissions from the oil industry. Venting from tanks, truck loading, rail loading, and marine vessel loading operations account for 84 percent of CH<sub>4</sub> emissions from crude oil transportation. Fugitive emissions, almost entirely from floating roof tanks, account for approximately 12 percent of CH<sub>4</sub> emissions from crude oil transportation. The remaining 4 percent is distributed between two additional sources within the vented emissions category (i.e., pump station maintenance and pipeline pigging), and fugitive emissions from pump stations.

Since 1990, CH<sub>4</sub> emissions from transportation have increased by almost 24 percent. However, because emissions from crude oil transportation account for such a small percentage of the total emissions from the petroleum industry, this has had little impact on the overall emissions. Methane emissions from transportation have increased by approximately 13 percent from 2013 levels.

*Crude Oil Refining.* Crude oil refining processes and systems account for approximately 1 percent of total CH<sub>4</sub> emissions from the oil industry because most of the CH<sub>4</sub> in crude oil is removed or escapes before the crude oil is delivered to the refineries. There is an insignificant amount of CH<sub>4</sub> in all refined products. Within refineries, combustion emissions account for slightly over 50 percent of the CH<sub>4</sub> emissions, while vented and fugitive emissions account for approximately 31 and 19 percent, respectively. Flare emissions are the primary combustion emissions contributor, accounting for approximately 79 percent of combustion CH<sub>4</sub> emissions. Refinery system blowdowns for maintenance and process vents are the primary venting contributors (96 percent). Most of the fugitive CH<sub>4</sub> emissions from refineries are from equipment leaks and storage tanks (89 percent).

Methane emissions from refining of crude oil have decreased by approximately 1.4 percent since 1990; however, similar to the transportation subcategory, this decrease has had little effect on the overall emissions of CH<sub>4</sub>. Since 1990, CH<sub>4</sub> emissions from crude oil refining have fluctuated between 23 and 28 kt.

Flare emissions from crude oil refining accounts for slightly more than 94 percent of the total CO<sub>2</sub> emissions in petroleum systems. Refinery CO<sub>2</sub> emissions decreased by slightly more than 7 percent from 1990 to 2014.

**Table 3-36: CH<sub>4</sub> Emissions from Petroleum Systems (MMT CO<sub>2</sub> Eq.)**

Activity	1990	2005	2010	2011	2012	2013	2014
<b>Production Field Operations (Potential)</b>	<b>38.0</b>	<b>48.9</b>	<b>54.8</b>	<b>56.6</b>	<b>58.7</b>	<b>64.7</b>	<b>68.1</b>
Pneumatic controller venting <sup>a</sup>	19.0	30.2	33.2	33.7	33.3	37.7	39.2
Tank venting	6.3	4.7	5.3	5.5	7.0	8.2	9.9
Combustion & process upsets	2.9	2.3	2.5	2.5	2.7	2.9	3.1
Misc. venting & fugitives	8.4	10.5	12.5	13.5	14.3	14.3	14.5

Wellhead fugitives	1.5	1.2	1.4	1.4	1.5	1.5	1.5
Production Voluntary Reductions	(0.0)	(0.9)	(1.5)	(1.1)	(1.1)	(0.8)	(0.8)
<b>Production Field Operations (Net)</b>	<b>38.0</b>	<b>48.0</b>	<b>53.3</b>	<b>55.4</b>	<b>57.5</b>	<b>63.9</b>	<b>67.4</b>
<b>Crude Oil Transportation</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Refining</b>	<b>0.6</b>	<b>0.7</b>	<b>0.6</b>	<b>0.7</b>	<b>0.7</b>	<b>0.6</b>	<b>0.6</b>
<b>Total</b>	<b>38.7</b>	<b>48.8</b>	<b>54.1</b>	<b>56.3</b>	<b>58.4</b>	<b>64.7</b>	<b>68.1</b>

<sup>a</sup> Values presented in this table for pneumatic controllers are net emissions. The revised methodology for the 2016 (current) Inventory incorporates GHGRP subpart W activity and emissions data, and is detailed in the Recalculations Discussion section.

Notes: Totals may not sum due to independent rounding. Parentheses indicate emissions reductions.

**Table 3-37: CH<sub>4</sub> Emissions from Petroleum Systems (kt)**

Activity	1990	2005	2010	2011	2012	2013	2014
<b>Production Field Operations (Potential)</b>	<b>1,519</b>	<b>1,957</b>	<b>2,193</b>	<b>2,263</b>	<b>2,347</b>	<b>2,586</b>	<b>2,725</b>
Pneumatic controller venting <sup>a</sup>	761	1,209	1,328	1,346	1,332	1,509	1,567
Tank venting	250	188	210	220	278	330	396
Combustion & process upsets	115	91	98	101	108	114	122
Misc. venting & fugitives	334	421	502	540	570	573	578
Wellhead fugitives	59	48	54	56	59	60	62
Production Voluntary Reductions	(0)	(36)	(60)	(45)	(45)	(31)	(31)
<b>Production Field Operations (Net)</b>	<b>1,519</b>	<b>1,921</b>	<b>2,133</b>	<b>2,218</b>	<b>2,302</b>	<b>2,556</b>	<b>2,694</b>
<b>Crude Oil Transportation</b>	<b>7</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>Refining</b>	<b>24</b>	<b>27</b>	<b>26</b>	<b>28</b>	<b>27</b>	<b>26</b>	<b>23</b>
<b>Total</b>	<b>1,550</b>	<b>1,953</b>	<b>2,163</b>	<b>2,251</b>	<b>2,335</b>	<b>2,588</b>	<b>2,726</b>

<sup>a</sup> Values presented in this table for pneumatic controllers are net emissions. The revised methodology for the 2016 (current) Inventory incorporates GHGRP subpart W activity and emissions data, and is detailed in the Recalculations Discussion section.

Notes: Totals may not sum due to independent rounding. Parentheses indicate emissions reductions.

**Table 3-38: CO<sub>2</sub> Emissions from Petroleum Systems (MMT CO<sub>2</sub> Eq.)**

Activity	1990	2005	2010	2011	2012	2013	2014
<b>Production Field Operations</b>	<b>0.4</b>	<b>0.3</b>	<b>0.4</b>	<b>0.4</b>	<b>0.5</b>	<b>0.6</b>	<b>0.6</b>
Pneumatic controller venting	+	0.1	0.1	0.1	0.1	0.1	0.1
Tank venting	0.3	0.2	0.3	0.3	0.4	0.4	0.5
Misc. venting & fugitives	+	+	+	+	+	+	+
Wellhead fugitives	+	+	+	+	+	+	+
Process upsets	+	+	+	+	+	+	+
<b>Crude Refining</b>	<b>3.2</b>	<b>3.6</b>	<b>3.8</b>	<b>3.8</b>	<b>3.4</b>	<b>3.1</b>	<b>2.9</b>
<b>Total</b>	<b>3.6</b>	<b>3.9</b>	<b>4.2</b>	<b>4.2</b>	<b>3.9</b>	<b>3.7</b>	<b>3.6</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

Note: Totals may not sum due to independent rounding.

**Table 3-39: CO<sub>2</sub> Emissions from Petroleum Systems (kt)**

Activity	1990	2005	2010	2011	2012	2013	2014
<b>Production Field Operations</b>	<b>391</b>	<b>338</b>	<b>379</b>	<b>395</b>	<b>473</b>	<b>550</b>	<b>640</b>
Pneumatic controller venting	42	67	74	75	74	84	87
Tank venting	328	246	276	288	365	432	519
Misc. venting & fugitives	17	21	26	28	30	30	30
Wellhead fugitives	3	3	3	3	3	3	3
Process upsets	0.2	0.1	0.2	0.2	0.2	0.2	0.2
<b>Crude Refining</b>	<b>3,162</b>	<b>3,589</b>	<b>3,775</b>	<b>3,797</b>	<b>3,404</b>	<b>3,143</b>	<b>2,927</b>
<b>Total</b>	<b>3,553</b>	<b>3,927</b>	<b>4,154</b>	<b>4,192</b>	<b>3,876</b>	<b>3,693</b>	<b>3,567</b>

Note: Totals may not sum due to independent rounding.



## Methodology

The estimates of CH<sub>4</sub> emissions from petroleum systems are largely based on GRI/EPA 1996, EPA 1999, and EPA's GHGRP data (EPA 2015a). Petroleum Systems includes emission estimates for activities occurring in petroleum systems from the oil wellhead through crude oil refining, including activities for crude oil production field operations, crude oil transportation activities, and refining operations. Annex 3.5 provides detail on the emission estimates for these activities. The estimates of CH<sub>4</sub> emissions from petroleum systems do not include emissions downstream of oil refineries because these emissions are negligible.

Emissions are estimated for each activity by multiplying emission factors (e.g., emission rate per equipment or per activity) by the corresponding activity data (e.g., equipment count or frequency of activity).

References for emission factors include DrillingInfo (2015), "Methane Emissions from the Natural Gas Industry by the Gas Research Institute and EPA" (EPA/GRI 1996a-d), "Estimates of Methane Emissions from the U.S. Oil Industry" (EPA 1999), consensus of industry peer review panels, BOEMRE and BOEM reports (BOEMRE 2004, BOEM 2011), analysis of BOEMRE data (EPA 2005, BOEMRE 2004), and the GHGRP (2010 through 2014).

Emission factors from EPA 1999 are used for all activities except those related to pneumatic controllers, chemical injection pumps, hydraulic fractured oil well completions, offshore oil production, field storage tanks, and refineries. The emission factors for pneumatic controllers venting and chemical injection pumps were developed using EPA's GHGRP data for reporting year 2014. Emission factors for hydraulically fractured (HF) oil well completions (controlled and uncontrolled) were developed using data analyzed for the 2015 NSPS OOOOa proposal (EPA 2015b). For oil storage tanks, the emissions factor was calculated as the total emissions per barrel of crude charge from E&P Tank data weighted by the distribution of produced crude oil gravities from the HPDI production database (EPA 1999, HPDI 2011). For offshore oil production, two emission factors were calculated using data collected for all federal offshore platforms (EPA 2015c, BOEM 2014), one for oil platforms in shallow water, and one for oil platforms in deep water. For all sources, emission factors are held constant for the period 1990 through 2014.

References for activity data include DrillingInfo (2015), the Energy Information Administration annual and monthly reports (EIA 1990 through 2015), (EIA 1995 through 2015a, 2015b), "Methane Emissions from the Natural Gas Industry by the Gas Research Institute and EPA" (EPA/GRI 1996a-d), "Estimates of Methane Emissions from the U.S. Oil Industry" (EPA 1999), consensus of industry peer review panels, BOEMRE and BOEM reports (BOEMRE 2004, BOEM 2011), analysis of BOEMRE data (EPA 2005, BOEMRE 2004), the Oil & Gas Journal (OGJ 2015), the Interstate Oil and Gas Compact Commission (IOGCC 2012), the United States Army Corps of Engineers, (1995 through 2015), and the GHGRP (2010 through 2014).

For many sources, complete activity data were not available for all years of the time series. In such cases, one of three approaches was employed. Where appropriate, the activity data were calculated from related statistics using ratios developed based on EPA 1996, and/or GHGRP data. In other cases, the activity data were held constant from 1990 through 2014 based on EPA (1999). Lastly, the previous year's data were used when data for the current year were unavailable. For offshore production, the number of platforms in shallow water and the number of platforms in deep water are used as activity data and are taken from Bureau of Ocean Energy Management (BOEM) (formerly Bureau of Ocean Energy Management, Regulation, and Enforcement [BOEMRE]) datasets (BOEM 2011a,b,c).

For petroleum refining activities, 2010 to 2014 emissions were directly obtained from EPA's GHGRP. All refineries have been required to report CH<sub>4</sub> and CO<sub>2</sub> emissions for all major activities since 2010. The national totals of these emissions for each activity were used for the 2010 to 2014 emissions. The national emission totals for each activity were divided by refinery feed rates for those four Inventory years to develop average activity-specific emission factors, which were used to estimate national emissions for each refinery activity from 1990 to 2009 based on national refinery feed rates for each year (EPA 2015d).

The Inventory estimate for Petroleum Systems takes into account Natural Gas STAR reductions. Voluntary reductions included in the Petroleum Systems calculations were those reported to Natural Gas STAR for the following activities: artificial lift - gas lift; artificial lift - use compression; artificial lift - use pumping unit; consolidate crude oil production and water storage tanks; lower heater-treater temperature; re-inject gas for enhanced oil recovery; re-inject gas into crude; and route casinghead gas to vapor recovery unit or compressor.

The methodology for estimating CO<sub>2</sub> emissions from petroleum systems includes calculation of vented, fugitive, and process upset emissions sources from 29 activities for crude oil production field operations and three activities from petroleum refining. Generally, emissions are estimated for each activity by multiplying CO<sub>2</sub> emission factors by their corresponding activity data. The emission factors for CO<sub>2</sub> are generally estimated by multiplying the CH<sub>4</sub> emission factors by a conversion factor, which is the ratio of CO<sub>2</sub> content and CH<sub>4</sub> content in produced associated gas. One exception to this methodology is the set of emission factors for crude oil storage tanks, which are obtained from E&P Tank simulation runs, and the emission factors for offshore oil production (shallow and deep water), which were derived using data from BOEM (EPA 2015c, BOEM 2014). Other exceptions to this methodology are the three petroleum refining activities (i.e., flares, asphalt blowing, and process vents); the CO<sub>2</sub> emissions data for 2010 to 2014 were directly obtained from the GHGRP. The 2010 to 2013 CO<sub>2</sub> emissions data from GHGRP along with the refinery feed data for 2010 to 2013 were used to derive CO<sub>2</sub> emission factors (i.e., sum of activity emissions/sum of refinery feed) which were then applied to the annual refinery feed to estimate CO<sub>2</sub> emissions for 1990 to 2009.

## Uncertainty and Time-Series Consistency

The most recent uncertainty analysis for the petroleum systems emission estimates in the Inventory was conducted for the 1990 to 2009 Inventory that was released in 2011. Since the analysis was last conducted, several of the methods used in the Inventory have changed, and industry practices and equipment have evolved. In addition, new studies and other data sources such as those discussed in the sections below offer improvement to understanding and quantifying the uncertainty of some emission source estimates. EPA is planning an update to the uncertainty analysis conducted for the 2011 Inventory to reflect the new information. It is difficult to project whether updated uncertainty bounds around CH<sub>4</sub> emission estimates would be wider, tighter, or about the same as the current uncertainty bounds that were developed for the Inventory published in 2011 (i.e., minus 24 percent and plus 149 percent). Details on EPA's planned uncertainty analysis are described in the Planned Improvements section.

EPA conducted a quantitative uncertainty analysis for the 2011 Inventory to determine the level of uncertainty surrounding estimates of emissions from petroleum systems using the IPCC-recommended Approach 2 methodology (Monte Carlo Simulation technique). The @RISK software model was used to quantify the uncertainty associated with the emission estimates using the 7 highest-emitting sources ("top 7 sources") for the year 2010. The @RISK analysis provides for the specification of probability density functions for key variables within a computational structure that mirrors the calculation of the Inventory estimate. The IPCC guidance notes that in using this method, "some uncertainties that are not addressed by statistical means may exist, including those arising from omissions or double counting, or other conceptual errors, or from incomplete understanding of the processes that may lead to inaccuracies in estimates developed from models." As a result, the understanding of the uncertainty of emission estimates for this category evolves and improves as the underlying methodologies and datasets improve.

The uncertainty analysis conducted for the 2011 Inventory has not yet been updated for the 1990 through 2014 Inventory years; instead, EPA has applied the uncertainty percentage ranges calculated previously to 2014 emission estimates. The majority of sources in the current Inventory were calculated using the same emission factors and activity data for which PDFs were developed in the 1990 through 2009 uncertainty analysis. However, as discussed in the Methodology and Recalculations Discussion sections, EPA has revised the methodology and data for many emission sources. Given these revisions, the 2009 uncertainty ranges applied may not reflect the uncertainty associated with the recently revised emission factors and activity data sources.

The results presented below provide with 95 percent certainty the range within which emissions from this source category are likely to fall for the year 2014, based on the previously conducted uncertainty assessment using the recommended IPCC methodology. The results of the Approach 2 quantitative uncertainty analysis are summarized in Table 3-40. Petroleum systems CH<sub>4</sub> emissions in 2014 were estimated to be between 51.8 and 101.5 MMT CO<sub>2</sub> Eq., while CO<sub>2</sub> emissions were estimated to be between 2.7 and 5.4 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level, based on previously calculated uncertainty. This indicates a range of 24 percent below to 149 percent above the 2014 emission estimates of 68.1 and 3.6 MMT CO<sub>2</sub> Eq. for CH<sub>4</sub> and CO<sub>2</sub>, respectively.

**Table 3-40: Approach 2 Quantitative Uncertainty Estimates for CH<sub>4</sub> Emissions from Petroleum Systems (MMT CO<sub>2</sub> Eq. and Percent)**

Source	Gas	2014 Emission Estimate (MMT CO <sub>2</sub> Eq.) <sup>b</sup>	Uncertainty Range Relative to Emission Estimate <sup>a</sup>			
			(MMT CO <sub>2</sub> Eq.)		(%)	
			Lower Bound	Upper Bound	Lower Bound	Upper Bound
Petroleum Systems	CH <sub>4</sub>	68.1	51.8	101.5	-24%	149%
Petroleum Systems	CO <sub>2</sub>	3.6	2.7	5.4	-24%	149%

<sup>a</sup> Range of 2014 relative uncertainty predicted by Monte Carlo Stochastic Simulation, based on 1995 base year activity factors, for a 95 percent confidence interval.

<sup>b</sup> All reported values are rounded after calculation. As a result, lower and upper bounds may not be duplicable from other rounded values as shown in table.

EPA compared the quantitative uncertainty estimate for CH<sub>4</sub> emissions from petroleum systems to those reported in the recently published study by Lyon et al., (2015) (see “Additional Information and Updates under Consideration for Natural Gas and Petroleum Systems Uncertainty Estimates” [EPA 2016a]).<sup>69</sup> Lyon et al., (2015) used the Monte Carlo simulation technique to examine uncertainty bounds for the estimates developed by that study for the Barnett Shale. The uncertainty range in the study differ from those of EPA. However, it is difficult to extrapolate an uncertainty range from this study that can be applied to the Inventory estimate because the coverage of the Lyon et al. (2015) study is limited to the 25-county Barnett Shale area, the reported estimate encompasses natural gas in addition to petroleum system emissions, and the two estimates use different methodologies and data sources.

Methodological recalculations were applied to the entire time-series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## QA/QC and Verification Discussion

The petroleum system emission estimates in the Inventory are continually being reviewed and assessed to determine whether emission factors and activity factors accurately reflect current industry practices. A QA/QC analysis was performed for data gathering and input, documentation, and calculation. QA/QC checks are consistently conducted to minimize human error in the model calculations. EPA performs a thorough review of information associated with new studies, GHGRP data, regulations, public webcasts, and the Natural Gas STAR Program to assess whether the assumptions in the Inventory are consistent with current industry practices. In addition, EPA receives feedback through the annual expert and public review period. Feedback received is noted in the Recalculations and Planned Improvement sections.

## Recalculations Discussion

The EPA received information and data related to the emission estimates through the Inventory preparation process, previous Inventories’ formal public notice periods, GHGRP data, and new studies. The EPA carefully evaluated relevant information available, and made revisions to the production segment methodology for the 2016 (current) Inventory including revised equipment activity data, revised pneumatic controller activity and emissions data, and included a separate estimate for hydraulically fractured oil well completions, which previously were not estimated as a distinct subcategory of oil well completions.

In February 2016, the EPA released a draft memorandum, “Revisions under Consideration for Natural Gas and Petroleum Production Emissions,” that discussed the changes under consideration and requested stakeholder

<sup>69</sup> See <<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>.

feedback on those changes. Please see <https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>.

The combined impact of revisions to 2013 petroleum production segment emissions, compared to the 1990-2013 Inventory, is an increase in CH<sub>4</sub> emissions from 24.2 to 63.9 MMT CO<sub>2</sub> Eq. (40 MMT CO<sub>2</sub> Eq., or 164 percent).

The recalculations resulted in an average increase in emission estimates across the 1990 to 2013 time series, compared to the previous (2015) Inventory, of 21 MMT CO<sub>2</sub> Eq., or an 85 percent. The largest increases in the estimate occurred in later years of the time series.

## Production

This section references the final 2016 (current) Inventory memorandum, “Revisions to Natural Gas and Petroleum Production Emissions” (EPA 2016b).<sup>70</sup> “Revisions to Natural Gas and Petroleum Production Emissions” contains further details and documentation of recalculations (EPA 2016b).

### *Updated activity factors for fugitives, pumps and controllers*

Using newly available GHGRP activity data, the EPA developed activity factors (i.e., counts per oil well) for separators, headers, heater-treaters, pneumatic pumps, and pneumatic controllers. EPA reviewed this new data source and the previous data, assessed stakeholder feedback, and determined that the previous data source represents activities from the time period in which the data were collected (early 1990s) and the new GHGRP data source represents activities from recent years. The EPA applied the updated activity factors to calculate emissions from these sources for year 2011-on in the 2016 (current) Inventory petroleum production segment, while retaining the previous activity factors for 1990 through 1992. For years 1993 through 2010, the EPA calculated equipment counts by linearly interpolating between the data points of calculated national equipment counts in 1992 (based on GRI/EPA) and calculated national equipment counts in 2011 (based on GHGRP). This reflects an assumed gradual transition from the counts observed in the 1996 study and the counts observed in the recent GHGRP data.

For the year 2013, the CH<sub>4</sub> emissions increase due to use of revised activity factors for major equipment and pneumatic pumps is approximately 4.2 MMT CO<sub>2</sub> Eq.

**Table 3-41: CH<sub>4</sub> Emissions from Sources with Updates to use GHGRP Data (MMT CO<sub>2</sub> Eq.)**

Type	Source	1990	2005	2010	2013	2014
Venting	Chemical Injection Pumps	1.2	3.4	4.3	4.7	4.8
	<i>Previous-Chemical</i>					
<i>Venting</i>	<i>Injection Pumps</i>	<i>1.4</i>	<i>1.2</i>	<i>1.3</i>	<i>1.4</i>	
Fugitive	Oil Wellheads	1.5	1.2	1.4	1.5	1.5
<i>Fugitive</i>	<i>Previous-Oil Wellheads</i>	<i>1.5</i>	<i>1.2</i>	<i>1.3</i>	<i>1.5</i>	
Fugitive	Separators	0.3	0.6	0.8	0.8	0.9
<i>Fugitive</i>	<i>Previous-Separators</i>	<i>0.3</i>	<i>0.2</i>	<i>0.2</i>	<i>0.3</i>	
Fugitive	Heater/Treaters	0.3	0.3	0.4	0.4	0.4
<i>Fugitive</i>	<i>Previous-Heater/Treaters</i>	<i>0.3</i>	<i>0.2</i>	<i>0.3</i>	<i>0.3</i>	
Fugitive	Headers	0.1	0.2	0.2	0.2	0.2
<i>Fugitive</i>	<i>Previous-Headers</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	
Fugitive	Compressors	0.1	+	+	0.1	0.1
<i>Fugitive</i>	<i>Previous-Compressors</i>	<i>0.1</i>	+	+	+	

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

Note: Values in *italics* are from the previous Inventory.

Using the GHGRP data, the EPA has also developed technology-specific activity data and emission factors for pneumatic controllers. Data reported under EPA’s GHGRP allow for development of emission factors specific to bleed type (continuous high bleed, continuous low bleed, and intermittent bleed) and separation of activity data into these categories. EPA used this separation of pneumatic controller counts by bleed types and emission factors developed from reported GHGRP data. Comparing the updated 2013 estimate to the previous Inventory 2013

<sup>70</sup> See <<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>.

estimate, the impact of using bleed type-specific emission factors and activity data developed from GHGRP data is an increase of approximately 26 MMT CO<sub>2</sub> Eq. Over the 1990 through 2013 time series, the average increase due to the recalculation is 16 MMT CO<sub>2</sub> Eq.

**Table 3-42: CH<sub>4</sub> Emissions from Pneumatic Controllers (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
<b>All</b>	<b>19.0</b>	<b>30.2</b>	<b>33.2</b>	<b>37.7</b>	<b>39.2</b>
High bleed	17.8	17.5	12.6	5.5	4.7
Low bleed	1.2	1.8	2.0	1.4	1.2
Intermittent bleed	+	10.9	18.6	30.9	33.3
<i>Previous-All</i>	<i>12.2</i>	<i>10.1</i>	<i>10.8</i>	<i>11.9</i>	<i>NA</i>
<i>Previous-High bleed</i>	<i>9.5</i>	<i>7.8</i>	<i>8.4</i>	<i>9.2</i>	<i>NA</i>
<i>Previous-Low bleed</i>	<i>2.8</i>	<i>2.3</i>	<i>2.4</i>	<i>2.7</i>	<i>NA</i>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NA – Not applicable

Note: Values in *italics* are from the previous Inventory.

The EPA’s approach to revising the Inventory methodology by incorporating technology-specific GHGRP data for pneumatic controllers resulted in net emissions being directly calculated for these sources in each time series year. This methodology revision obviates the need to apply Gas STAR reductions data for pneumatic controllers as had been done in previous Inventories. EPA removed the pneumatic controller Gas STAR reductions from its calculations.

### Oil Well Completions

The Inventory previously did not distinguish between oil well completions and workovers with hydraulic fracturing (HF) and oil well completions and workovers without hydraulic fracturing. The Inventory emission factors for all oil well completions and workovers were developed using an assumption that all oil well workovers and completions are flared. In the current Inventory, an estimate for the subcategories of oil well completions with hydraulic fracturing with and without controls was included. This estimate was developed using an uncontrolled emission factor developed as part of the analysis supporting the OOOOa NSPS proposal (7.5 tons CH<sub>4</sub>/completion)<sup>71</sup>, and a controlled emission factor that assumes 95 percent control efficiency (0.4 tons CH<sub>4</sub>/completion). For the OOOOa proposal analysis, EPA extracted gas production data from oil well records in DrillingInfo, and developed average daily gas production rates (over the first month of production) for wells that were determined to have been completed with hydraulic fracturing in 2012. The average value for these wells was 255.47 Mcf/day. This was then multiplied by a 3 day completion duration, and a methane content value of 47 percent to develop the uncontrolled factor. Total annual national HF oil well completion data were developed from DrillingInfo data (DrillingInfo 2015). The Inventory uses the NSPS OOOOa proposal information for the percentage of oil well completions that are controlled due to state regulations, 7 percent and applies that value beginning in 2008. It is assumed in the inventory estimate that prior to 2008, all oil well completions with HF are uncontrolled. The inventory continues to use one estimate for workover emissions for completions of all types (i.e. both hydraulically fractured and non-hydraulically fractured). This recalculation results in a 3 MMT CO<sub>2</sub> Eq. increase from the previous 2013 estimate for completions and workovers, and an average increase of 1 MMT CO<sub>2</sub> Eq. over the 1990 through 2013 time series.

**Table 3-43: CH<sub>4</sub> Emissions from Oil Well Completions and Workovers (C&W) (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
HF Completions	0.6	0.9	1.7	3.0	3.0
NonHF Completions	+	+	+	+	+
Workovers (HF and nonHF)	+	+	+	+	+
<b>Total C&amp;W</b>	<b>0.6</b>	<b>0.9</b>	<b>1.7</b>	<b>3.0</b>	<b>3.0</b>

<sup>71</sup> The value presented in the NSPS proposal, 9.72 short tons was the average emissions calculated for the subset of HF oil well completions with GOR >300 scf/bbl. The inventory averaged emissions from the same base data set, without the GOR <300 scf/bbl exclusion, so that for the inventory, the emission factor can be applied to all HF oil well completions in the U.S., including those with lower GOR.

*Previous Total C&W* + ■ + ■ + ■ + *NA*

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

Note: Values in *italics* are from the previous Inventory.

## Planned Improvements

In response to the public review draft and earlier released memorandum outlining potential revisions to the production segment, EPA received feedback from stakeholders that will be further considered to refine future Inventories.

In the production segment, some commenters suggested that the approach taken overestimates equipment counts in the production segment, while others suggested that the approach was appropriate. The EPA will further consider how activity factors developed from GHGRP data may over- or under-represent equipment counts for non-GHGRP facilities (those not meeting the emissions reporting threshold). Preliminary assessment by EPA of this issue by disaggregating GHGRP reporter data by number of wells reported indicated that reporters with fewer wells had higher equipment counts per well than average. EPA will continue to explore other methods to assess whether the non-GHGRP population may have different average equipment counts than the reporting population and how this may be reflected in the Inventory. EPA will continue to assess GHGRP data for additional updates to the inventory. While comments received supported the update to include hydraulically fractured oil well completions as a distinct subcategory category, commenters differed on the recommended data for the update (DI Desktop approach versus GHGRP data). EPA will review the first year of reported GHGRP data on hydraulically fractured oil well completions and workovers and will consider how it may be used to update the inventory. Additionally, EPA received comments suggesting that EPA use associated gas venting and flaring data from GHGRP and apply it to the population of associated gas wells in the Inventory, to address the concern that casinghead gas emissions occur at a wider set of associated gas wells, not only at stripper wells. EPA will investigate the appropriateness of using associated gas venting and flaring data from the GHGRP to replace or supplement current estimates of casinghead gas venting from stripper wells in the 2017 Inventory.

In response to the public review memoranda, EPA also received feedback from stakeholders on aspects of emission sources that were not significantly revised in the 2016 (current) Inventory. Stakeholders noted that data generated by Allen et al. in recent studies of pneumatic controller emissions in the production segment might be used to develop a separate emission factor for malfunctioning devices (in addition to the bleed type-specific factors developed from GHGRP data and used in the 2016 [current] Inventory). EPA will evaluate available data studies on this emission source.

EPA will continue to consider stakeholder feedback on the methodology used to develop counts of active oil wells across the time series.

EPA will continue to consider methods to refine the time series. For many sources with, the time series calculations rely on linear interpolation between 1990's data points and 2011 data points.

Abandoned wells are not currently accounted for in the Inventory. EPA is seeking appropriate emission factors and national activity data available to calculate these emissions. Commenters supported including this source category, noted the currently data is limited, and suggested reviewing data that will become available in the future.

## Uncertainty

As discussed in the Recalculations Discussion section above, EPA made several revisions to the methodology and data for the 2016 (current) Inventory. As noted in the Uncertainty section above, EPA has not yet updated its uncertainty analysis to reflect this new information. It is difficult to project whether the uncertainty bounds around CH<sub>4</sub> emission estimates would be wider, tighter, or about the same as the current uncertainty bounds that were developed for the Inventory published in 2011 (i.e., minus 24 percent and plus 149 percent) given these revisions.

To update its uncertainty analysis, EPA will conduct a formal quantitative uncertainty analysis similar to that conducted for the 2011 Inventory using the IPCC-recommended Approach 2 methodology (Monte Carlo Simulation technique) using new data and taking into account stakeholder input received. For more information, please see “Additional Information and Updates under Consideration for Natural Gas and Petroleum Systems Uncertainty

Estimates” (EPA 2016a).<sup>72</sup> As in the 2011 Inventory analysis, EPA will first identify a select number of top-emitting emission sources for each source category. Refer to “Additional Information and Updates under Consideration for Natural Gas and Petroleum Systems Uncertainty Estimates” for more information on planned improvements regarding uncertainty (EPA 2016a).

**Box 3-7: Carbon Dioxide Transport, Injection, and Geological Storage**

Carbon dioxide is produced, captured, transported, and used for Enhanced Oil Recovery (EOR) as well as commercial and non-EOR industrial applications. This CO<sub>2</sub> is produced from both naturally-occurring CO<sub>2</sub> reservoirs and from industrial sources such as natural gas processing plants and ammonia plants. In the Inventory, emissions from naturally-produced CO<sub>2</sub> are estimated based on the specific application.

In the Inventory, CO<sub>2</sub> that is used in non-EOR industrial and commercial applications (e.g., food processing, chemical production) is assumed to be emitted to the atmosphere during its industrial use. These emissions are discussed in the Carbon Dioxide Consumption section. The naturally-occurring CO<sub>2</sub> used in EOR operations is assumed to be fully sequestered. Additionally, all anthropogenic CO<sub>2</sub> emitted from natural gas processing and ammonia plants is assumed to be emitted to the atmosphere, regardless of whether the CO<sub>2</sub> is captured or not. These emissions are currently included in the Natural Gas Systems and the Ammonia Production sections of the Inventory report, respectively.

IPCC includes methodological guidance to estimate emissions from the capture, transport, injection, and geological storage of CO<sub>2</sub>. The methodology is based on the principle that the carbon capture and storage system should be handled in a complete and consistent manner across the entire Energy sector. The approach accounts for CO<sub>2</sub> captured at natural and industrial sites as well as emissions from capture, transport, and use. For storage specifically, a Tier 3 methodology is outlined for estimating and reporting emissions based on site-specific evaluations. However, IPCC (IPCC 2006) notes that if a national regulatory process exists, emissions information available through that process may support development of CO<sub>2</sub> emissions estimates for geologic storage.

In the United States, facilities that produce CO<sub>2</sub> for various end-use applications (including capture facilities such as acid gas removal plants and ammonia plants), importers of CO<sub>2</sub>, exporters of CO<sub>2</sub>, facilities that conduct geologic sequestration of CO<sub>2</sub>, and facilities that inject CO<sub>2</sub> underground (including facilities conducting EOR), are required to report greenhouse gas data annually to EPA through its GHGRP. Facilities conducting geologic sequestration of CO<sub>2</sub> are required to develop and implement an EPA-approved site-specific monitoring, reporting and verification plan, and to report the amount of CO<sub>2</sub> sequestered using a mass balance approach.

Available GHGRP data relevant for this inventory estimate consists of national-level annual quantities of CO<sub>2</sub> captured and extracted for EOR applications for 2010 to 2014. In the current Inventory, the previous estimates for 2010 to 2013 were replaced with GHGRP data for 2010 to 2013, and estimates for 2014 were directly taken from the reported GHGRP data for 2014. For the year 2013, this update has resulted in an increase of approximately 28 percent over the previous estimate. Using the GHGRP data has resulted in an average annual increase of approximately 11 MMT CO<sub>2</sub> Eq., or by approximately 25 percent, over the time series 2010 through 2013.

EPA will continue to evaluate the availability of additional GHGRP data and other opportunities for improving the emission estimates.

These estimates indicate that the amount of CO<sub>2</sub> captured and extracted from industrial and natural sites for EOR applications in 2014 is 59.3 MMT CO<sub>2</sub> Eq. (59,318 kt) (see Table 3-44 and Table 3-45). Site-specific monitoring and reporting data for CO<sub>2</sub> injection sites (i.e., EOR operations) were not readily available, therefore, these estimates assume all CO<sub>2</sub> is emitted.

**Table 3-44: Potential Emissions from CO<sub>2</sub> Capture and Extraction for EOR Operations (MMT CO<sub>2</sub> Eq.)**

Stage	1990	2005	2010	2011	2012	2013	2014
Capture Facilities	4.8	6.5	9.9	9.9	9.3	12.2	13.1
Extraction Facilities	20.8	28.3	44.8	48.4	48.9	47.0	46.2
<b>Total</b>	<b>25.6</b>	<b>34.7</b>	<b>54.7</b>	<b>58.2</b>	<b>58.1</b>	<b>59.2</b>	<b>59.3</b>

<sup>72</sup> See <<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>.

**Table 3-45: Potential Emissions from CO<sub>2</sub> Capture and Extraction for EOR Operations (kt)**

Stage	1990	2005	2010	2011	2012	2013	2014
Capture Facilities	4,832	6,475	9,900	9,877	9,267	12,205	13,093
Extraction Facilities	20,811	28,267	44,759	48,370	48,869	46,984	46,225
<b>Total</b>	<b>25,643</b>	<b>34,742</b>	<b>54,659</b>	<b>58,247</b>	<b>58,136</b>	<b>59,189</b>	<b>59,318</b>

## 3.7 Natural Gas Systems (IPCC Source Category 1B2b)

The U.S. natural gas system encompasses hundreds of thousands of wells, hundreds of processing facilities, and over a million miles of transmission and distribution pipelines. Overall, natural gas systems emitted 176.1 MMT CO<sub>2</sub> Eq. (7,045 kt) of CH<sub>4</sub> in 2014, a 15 percent decrease compared to 1990 emissions, and a slight (i.e., less than 1 percent) increase compared to 2013 emissions (see Table 3-46, Table 3-47, and Table 3-48) and 42.4 MMT CO<sub>2</sub> Eq. (42,351 kt) of non-combustion CO<sub>2</sub> in 2014, a 12 percent increase compared to 1990 emissions.

The 1990 to 2014 trend is not consistent across segments. Overall, the 1990 to 2014 decrease in CH<sub>4</sub> emissions is due primarily to the decrease in emissions from in the transmission/storage and distribution segments. Over the same time period, the production and processing segments saw increased methane emissions, of 31 and 13 percent, respectively. Natural gas systems also emitted 42.4 MMT CO<sub>2</sub> Eq. (42,351 kt) of non-combustion CO<sub>2</sub> in 2014, a 12 percent increase compared to 1990 emissions, and a 10 percent increase from 2013 emissions (see Table 3-49 and Table 3-50). Both the 1990 to 2014 and the 2013 to 2014 increases in CO<sub>2</sub> are due primarily to flaring; the volume of gas flared increased 93 percent from 1990 and 12 percent from 2013.

CH<sub>4</sub> and non-combustion CO<sub>2</sub> emissions from natural gas systems include those resulting from normal operations, routine maintenance, and system upsets. Emissions from normal operations include: natural gas engine and turbine uncombusted exhaust, bleed and discharge emissions from pneumatic controllers, and fugitive emissions from system components. Routine maintenance emissions originate from pipelines, equipment, and wells during repair and maintenance activities. Pressure surge relief systems and accidents can lead to system upset emissions. Below is a characterization of the four major stages of the natural gas system. Each of the stages is described and the different factors affecting CH<sub>4</sub> and non-combustion CO<sub>2</sub> emissions are discussed.

*Production (including gathering and boosting).* In the production stage, wells are used to withdraw raw gas from underground formations. Emissions arise from the wells themselves, and well-site gas treatment facilities such as dehydrators and separators. Gathering and boosting emission sources are not reported under a unique segment, but are included within the production sector. The gathering and boosting segment of natural gas systems comprises gathering and boosting stations (with multiple emission sources on site) and gathering pipelines. The gathering and boosting stations receive natural gas from production sites and transfer it, via gathering pipelines, to transmission pipelines or processing facilities (custody transfer points are typically used to segregate sources between each segment). Emissions from production (including gathering and boosting) account for 62 percent of CH<sub>4</sub> emissions and 44 percent of non-combustion CO<sub>2</sub> emissions from natural gas systems in 2014. Emissions from gathering stations, pneumatic controllers, kimray pumps, liquids unloading, condensate tanks, gathering pipeline leaks, and offshore platforms account for the majority of CH<sub>4</sub> emissions in 2014. Flaring emissions account for the majority of the non-combustion CO<sub>2</sub> emissions. CH<sub>4</sub> emissions from production increased by 31 percent from 1990 to 2014, due primarily to increases in emissions from gathering and boosting stations (due to an increase in the number of stations), increases in emissions from pneumatic controllers (due to an increase in the number of controllers, particularly in the number of intermittent bleed controllers), and condensate tanks (due to an increase in condensate produced). CO<sub>2</sub> emissions from production increased 88 percent from 1990 to 2014 due primarily to increases in flaring.



*Processing.* In this stage, natural gas liquids and various other constituents from the raw gas are removed, resulting in “pipeline quality” gas, which is injected into the transmission system. Fugitive CH<sub>4</sub> emissions from compressors, including compressor seals, are the primary emission source from this stage. The majority of non-combustion CO<sub>2</sub> emissions come from acid gas removal (AGR) units, which are designed to remove CO<sub>2</sub> from natural gas. Processing plants account for 14 percent of CH<sub>4</sub> emissions and 56 percent of non-combustion CO<sub>2</sub> emissions from natural gas systems. CH<sub>4</sub> emissions from processing increased by 13 percent from 1990 to 2014 as emissions from compressors increased along with the quantity of gas produced. CO<sub>2</sub> emissions from processing decreased by 15 percent from 1990 to 2014, as a result of a decrease in acid gas removal emissions.

*Transmission and Storage.* Natural gas transmission involves high pressure, large diameter pipelines that transport gas long distances from field production and processing areas to distribution systems or large volume customers such as power plants or chemical plants. Compressor station facilities, which contain large reciprocating and turbine compressors, are used to move the gas throughout the U.S. transmission system. Fugitive CH<sub>4</sub> emissions from these compressor stations, and venting from pneumatic controllers account for the majority of the emissions from this stage. Uncombusted engine exhaust and pipeline venting are also sources of CH<sub>4</sub> emissions from transmission. Natural gas is also injected and stored in underground formations, or liquefied and stored in above ground tanks, during periods of low demand (e.g., summer), and withdrawn, processed, and distributed during periods of high demand (e.g., winter). Compressors and dehydrators are the primary contributors to emissions from storage. CH<sub>4</sub> emissions from the transmission and storage sector account for approximately 18 percent of emissions from natural gas systems, while CO<sub>2</sub> emissions from transmission and storage account for less than 1 percent of the non-combustion CO<sub>2</sub> emissions from natural gas systems. CH<sub>4</sub> emissions from this source decreased by 45 percent from 1990 to 2014 due to reduced compressor station emissions (including emissions from compressors and fugitives). CO<sub>2</sub> emissions from transmission and storage have decreased by 37 percent from 1990 to 2014, also due to reduced compressor station emissions.

*Distribution.* Distribution pipelines take the high-pressure gas from the transmission system at “city gate” stations, reduce the pressure and distribute the gas through primarily underground mains and service lines to individual end users. There were 1,264,340 miles of distribution mains in 2014, an increase of over 320,000 miles since 1990 (PHMSA 2015). Distribution system emissions, which account for 6 percent of CH<sub>4</sub> emissions from natural gas systems and less than 1 percent of non-combustion CO<sub>2</sub> emissions, result mainly from fugitive emissions from pipelines and stations. An increased use of plastic piping, which has lower emissions than other pipe materials, has reduced both CH<sub>4</sub> and CO<sub>2</sub> emissions from this stage, as have station upgrades at metering and regulating (M&R) stations. Distribution system CH<sub>4</sub> emissions in 2014 were 74 percent lower than 1990 levels (changed from 43.5 MMT CO<sub>2</sub> Eq. to 11.1 MMT CO<sub>2</sub> Eq.), while distribution CO<sub>2</sub> emissions in 2014 were 72 percent lower than 1990 levels (CO<sub>2</sub> emission from this segment are less than 0.1 MMT CO<sub>2</sub> Eq. across the time series).

Total CH<sub>4</sub> emissions for the four major stages of natural gas systems are shown in MMT CO<sub>2</sub> Eq. (Table 3-46) and kt (Table 3-47). Table 3-48 provides additional information on how the estimates in Table 3-46 were calculated. Table 3-48 shows the calculated CH<sub>4</sub> release (i.e., potential emissions before any controls are applied) from each stage, and the amount of CH<sub>4</sub> that is estimated to have been flared, captured, or otherwise controlled, and therefore not emitted to the atmosphere. Subtracting the value for CH<sub>4</sub> that is controlled, from the value for calculated potential release of CH<sub>4</sub>, results in the total emissions values. More disaggregated information on potential emissions and emissions is available in Annex 3.6. See Methodology for Estimating CH<sub>4</sub> and CO<sub>2</sub> Emissions from Natural Gas Systems.

**Table 3-46: CH<sub>4</sub> Emissions from Natural Gas Systems (MMT CO<sub>2</sub> Eq.)<sup>a</sup>**

Stage	1990	2005	2010	2011	2012	2013	2014
Field Production	83.4	108.1	108.3	108.8	111.1	110.7	109.0
Processing	21.3	16.4	17.9	21.3	22.3	22.6	24.0
Transmission and Storage	58.6	30.7	27.5	28.8	27.9	30.8	32.1
Distribution	43.5	22.1	12.5	11.2	11.4	11.5	11.1
<b>Total</b>	<b>206.8</b>	<b>177.3</b>	<b>166.2</b>	<b>170.1</b>	<b>172.6</b>	<b>175.6</b>	<b>176.1</b>

<sup>a</sup> These values represent CH<sub>4</sub> emitted to the atmosphere. CH<sub>4</sub> that is captured, flared, or otherwise controlled (and not emitted to the atmosphere) has been calculated and removed from emission totals.

Note: Totals may not sum due to independent rounding.

**Table 3-47: CH<sub>4</sub> Emissions from Natural Gas Systems (kt)<sup>a</sup>**

Stage	1990	2005	2010	2011	2012	2013	2014
Field Production	3,335	4,326	4,330	4,352	4,442	4,429	4,359
Processing	852	655	717	851	890	904	960
Transmission and Storage	2,343	1,230	1,100	1,152	1,116	1,232	1,282
Distribution	1,741	884	500	449	457	458	444
<b>Total</b>	<b>8,270</b>	<b>7,093</b>	<b>6,647</b>	<b>6,803</b>	<b>6,906</b>	<b>7,023</b>	<b>7,045</b>

<sup>a</sup> These values represent CH<sub>4</sub> emitted to the atmosphere. CH<sub>4</sub> that is captured, flared, or otherwise controlled (and not emitted to the atmosphere) has been calculated and removed from emission totals.

Note: Totals may not sum due to independent rounding.

**Table 3-48: Calculated Potential CH<sub>4</sub> and Captured/Combusted CH<sub>4</sub> from Natural Gas Systems (MMT CO<sub>2</sub> Eq.)**

	1990	2005	2010	2011	2012	2013	2014
<b>Calculated Potential<sup>a</sup></b>	<b>206.9</b>	<b>202.7</b>	<b>196.3</b>	<b>196.5</b>	<b>199.6</b>	<b>202.3</b>	<b>203.8</b>
Field Production	83.5	115.7	120.5	121.3	123.6	124.2	123.3
Processing	21.3	20.6	23.6	25.2	26.2	26.5	27.9
Transmission and Storage	58.6	43.1	38.3	37.3	37.3	39.1	40.4
Distribution	43.5	23.3	13.9	12.7	12.5	12.5	12.1
<b>Captured/Combusted<sup>b</sup></b>	<b>0.1</b>	<b>25.4</b>	<b>30.1</b>	<b>26.4</b>	<b>27.0</b>	<b>26.7</b>	<b>27.7</b>
Field Production	0.1	7.6	12.2	12.5	12.5	13.5	14.4
Processing	+	4.2	5.7	3.9	3.9	3.9	4.0
Transmission and Storage	+	12.4	10.8	8.5	9.4	8.3	8.4
Distribution	+	1.2	1.4	1.5	1.1	1.0	1.0
<b>Net Emissions</b>	<b>206.8</b>	<b>177.3</b>	<b>166.2</b>	<b>170.1</b>	<b>172.6</b>	<b>175.6</b>	<b>176.1</b>
Field Production	83.4	108.1	108.3	108.8	111.1	110.7	109.0
Processing	21.3	16.4	17.9	21.3	22.3	22.6	24.0
Transmission and Storage	58.6	30.7	27.5	28.8	27.9	30.8	32.1
Distribution	43.5	22.1	12.5	11.2	11.4	11.5	11.1

+ Does not exceed 0.1 MMT CO<sub>2</sub> Eq.

<sup>a</sup> In this context, “potential” means the total emissions calculated before voluntary reductions and regulatory controls are applied.

<sup>b</sup> In 2014, over half of the capture and combustion accounted here is in the production segment, while 14 percent is from processing, 30 percent from transmission and storage, and 4 percent from distribution. For additional information, please see Annex 3.6.

Note: Totals may not sum due to independent rounding.

**Table 3-49: Non-combustion CO<sub>2</sub> Emissions from Natural Gas Systems (MMT CO<sub>2</sub> Eq.)**

Stage	1990	2005	2010	2011	2012	2013	2014
Field Production	9.9	8.3	11.0	14.1	13.7	16.6	18.6
Processing	27.8	21.7	21.3	21.5	21.5	21.8	23.7
Transmission and Storage	0.1	+	+	+	+	+	+
Distribution	0.1	+	+	+	+	+	+
<b>Total</b>	<b>37.7</b>	<b>30.1</b>	<b>32.4</b>	<b>35.7</b>	<b>35.2</b>	<b>38.5</b>	<b>42.4</b>

+ Does not exceed 0.1 MMT CO<sub>2</sub> Eq.

Note: Totals may not sum due to independent rounding.

**Table 3-50: Non-combustion CO<sub>2</sub> Emissions from Natural Gas Systems (kt)**

Stage	1990	2005	2010	2011	2012	2013	2014
Field Production	9,857	8,260	11,041	14,146	13,684	16,649	18,585
Processing	27,763	21,746	21,346	21,466	21,469	21,756	23,713

Transmission and Storage	62	43	37	36	35	37	39
Distribution	50	27	16	15	14	14	14
<b>Total</b>	<b>37,732</b>	<b>30,076</b>	<b>32,439</b>	<b>35,662</b>	<b>35,203</b>	<b>38,457</b>	<b>42,351</b>

Note: Totals may not sum due to independent rounding.

## Methodology

The methodology for natural gas emissions estimates presented in this Inventory involves the calculation of CH<sub>4</sub> and CO<sub>2</sub> emissions for over 100 emissions sources, and then the summation of emissions for each natural gas segment.

The approach for calculating emissions for natural gas systems generally involves the application of emission factors to activity data. For some sources, the approach uses what are considered “potential methane factors,” and reduction data to calculate net emissions; for other sources, the approach uses technology-specific emission factors or emission factors that vary over time to take into account changes to technologies and practices, and these calculate net emissions directly.

The approach of calculating potential CH<sub>4</sub> and then applying reductions data to calculate net emissions was used to ensure a time series that reflects real emission trends. As noted below, key data on emissions from many sources are from 1996 GRI/EPA report containing data collected in 1992. Since the time of this study, practices and technologies have changed. While this study still represents best available data for some emission sources, using these emission factors alone to represent actual emissions without adjusting for emissions controls would, in many cases, overestimate emissions. As updated emission factors reflecting changing practices are not available for some sources, the 1992 emission factors continue to be used for some sources for all years of the Inventory, but they are considered to be potential emissions factors, representing what emissions would be if practices and technologies had not changed over time. For the Inventory, the calculated potential emissions are adjusted using data on reductions reported to the Natural Gas STAR program, and data on regulations that result in CH<sub>4</sub> reductions. The revisions in the current inventory (see Recalculations Discussion below) result in net emission approaches being used for many sources in the inventory.

The calculation of emissions from natural gas systems is outlined below:

**Step 1. Calculate Potential Methane (or Net Methane)** – Collect activity data on production and equipment in use and apply emission factors (i.e., scf gas per unit or activity)

**Step 2. Compile Reductions Data** – Calculate the amount of the methane that is not emitted, using data on voluntary action and regulations

**Step 3. Calculate Net Emissions** – Deduct methane that is not emitted from the total methane potential estimates to develop net CH<sub>4</sub> emissions, and calculate CO<sub>2</sub> emissions

**Step 1. Calculate Potential Methane (or Net Methane)**—Collect activity data on production and equipment in use and apply emission factors

In the first step, potential CH<sub>4</sub> is calculated by multiplying activity data (such as miles of pipeline or number of wells) by factors that relate that activity data to potential CH<sub>4</sub>. Potential CH<sub>4</sub> is the amount of CH<sub>4</sub> that would be emitted in the absence of any control technology or mitigation activity. It is important to note that potential CH<sub>4</sub> factors in most cases do not represent emitted CH<sub>4</sub>, and must be adjusted for any emissions-reducing technologies, or practices, as appropriate. For more information, please see the Annex.

### *Potential Methane Factors and Net Emission Factors*

A primary basis for estimates of CH<sub>4</sub> and non-combustion-related CO<sub>2</sub> emissions from the U.S. natural gas industry is a detailed study by the Gas Research Institute (GRI) and EPA (EPA/GRI 1996). The EPA/GRI study developed over 80 CH<sub>4</sub> emission factors to characterize emissions from the various components within the operating stages of the U.S. natural gas system. The EPA/GRI study was based on a combination of process engineering studies, collection of activity data, and measurements at representative gas facilities conducted in the early 1990s. Methane compositions from the Gas Technology Institute (GTI, formerly GRI) Unconventional Natural Gas and Gas

Composition Databases (GTI 2001) are adjusted year to year using gross production for oil and gas supply National Energy Modeling System (NEMS) regions from the EIA. Therefore, emission factors may vary from year to year due to slight changes in the CH<sub>4</sub> composition for each NEMS oil and gas supply module region. The emission factors used to estimate CH<sub>4</sub> were also used to calculate non-combustion CO<sub>2</sub> emissions. Data from GTI 2001 were used to adapt the CH<sub>4</sub> emission factors into non-combustion related CO<sub>2</sub> emission factors. Additional information about CO<sub>2</sub> content in transmission quality natural gas was obtained from numerous U.S. transmission companies to help further develop the non-combustion CO<sub>2</sub> emission factors.

Although the Inventory primarily uses EPA/GRI emission factors (especially for early years of the time series), EPA has made revisions to the potential factor methodology in the emissions estimates for several sources in recent Inventories. For gas well completions and workovers (refracturing) with hydraulic fracturing, EPA uses its Greenhouse Gas Reporting Program (GHGRP) Subpart W data to stratify the emission sources into four different categories and developed CH<sub>4</sub> emission factors for each category. For liquids unloading, EPA calculates national emissions through the use of region-specific emission factors developed from well data collected in a survey conducted by API/ANGA (API/ANGA 2012). In the current Inventory, EPA has used data generated by studies and the GHGRP to develop emission factors that are control category-specific (e.g., bleed rate-specific emission factors for pneumatic controllers in the production and transmission and storage segments) and to reflect current practices for activities (e.g., distribution M&R station emission factors for recent years). For these sources, the emission factors are not potential factors, but are instead factors for net emissions.

See Annex 3.6 for more detailed information on the methodology and data used to calculate CH<sub>4</sub> and non-combustion CO<sub>2</sub> emissions from natural gas systems.

#### *Activity Data*

Activity data were taken from the following sources: DrillingInfo, Inc (DrillingInfo 2015); American Gas Association (AGA 1991 through 1998); Bureau of Ocean Energy Management, Regulation and Enforcement (previous Minerals and Management Service) (BOEMRE 2011a, 2011b, 2011c, 2011d); Natural Gas Liquids Reserves Report (EIA 2005); Natural Gas Monthly (EIA 2015a, 2015b, 2015c); the Natural Gas STAR Program annual emissions savings (EPA 2013c); Oil and Gas Journal (OGJ 1997 through 2015); Pipeline and Hazardous Materials Safety Administration (PHMSA 2015a, 2015b); Federal Energy Regulatory Commission (FERC 2015); Greenhouse Gas Reporting Program (EPA 2015); other Energy Information Administration data and publications (EIA 2001, 2004, 2012, 2013, 2014); (EPA 1999); Conservation Commission (Wyoming 2015); and the Alabama State Oil and Gas Board (Alabama 2015).

For a few sources, recent direct activity data are not available. For these sources, either 2013 data was used as a proxy for 2014 data, or a set of industry activity data drivers was developed and used to calculate activity data over the time series. Drivers include statistics on gas production, number of wells, system throughput, miles of various kinds of pipe, and other statistics that characterize the changes in the U.S. natural gas system infrastructure and operations. More information on activity data and drivers is available in Annex 3.6.

**Step 2. Compile Reductions Data**—Calculate the amount of the CH<sub>4</sub> that is not emitted, using data on voluntary action and regulations

The emissions calculated in Step 1 above for many sources represent potential emissions from an activity, and do not take into account use of technologies and practices that reduce emissions. To take into account use of such technologies, data, where available, are collected on both regulatory and voluntary reductions. Regulatory actions taken into account using this method include National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations for dehydrator vents and condensate tanks. Voluntary reductions included in the Inventory are those reported to Natural Gas STAR. For more information on these reductions, please see Annex 3.6. The emission estimates presented in Table 3-46 and Table 3-47 are the CH<sub>4</sub> that is emitted to the atmosphere (i.e., net emissions), not potential emissions without capture or flaring.

The Inventory also includes the impacts of the New Source Performance Standards (NSPS) Subpart OOOO, which came into effect in October 2012. By separating gas well completions and workovers with hydraulic fracturing into four categories and developing control technology-specific CH<sub>4</sub> emission factors for each category, EPA is implicitly accounting for Subpart OOOO reductions from hydraulically fractured gas wells. The method for calculating emissions from pneumatic controllers (by bleed rate category) also implicitly accounts for NSPS reductions in the high bleed pneumatic controller category.

The use of data from the EPA's GHGRP and recent studies to revise certain emission factors as discussed above obviated the need to apply Gas STAR or other reductions data for those sources (i.e., the calculated emissions were already net emissions, instead of potential emissions). More information is in the Recalculations Discussion below.

**Step 3. Calculate Net Emissions**—Deduct CH<sub>4</sub> that is not emitted from the total CH<sub>4</sub> potential estimates to develop net CH<sub>4</sub> emissions, and calculate CO<sub>2</sub> emissions

In the final step, emission reductions from voluntary and regulatory actions are deducted from the total calculated potential emissions to estimate the net emissions that are presented in Table 3-46, and included in the Inventory totals. As discussed above, for a number of categories (e.g., liquids unloading, condensate tanks, gas well completions and workovers with hydraulic fracturing, gathering stations, centrifugal compressors, pneumatic controllers, transmission and storage station fugitives, M&R stations, and pipeline leaks) emissions are calculated directly using emission factors that vary by technology or over time and account for any control measures in place that reduce CH<sub>4</sub> emissions.

## Uncertainty and Time-Series Consistency

The most recent uncertainty analysis for the natural gas and petroleum systems emission estimates in the Inventory was conducted for the 1990 to 2009 Inventory report that was released in 2011. Since the analysis was last conducted, several of the methods used in the Inventory have changed, and industry practices and equipment have evolved. In addition, new studies (e.g., Lamb, et al. 2015; Lyon, et al. 2015; Marchese, et al. 2015; Zimmerle, et al. 2015) and other data sources such as those discussed in the sections below offer improvement to understanding and quantifying the uncertainty of some emission source estimates. EPA is planning an update to the uncertainty analysis conducted for the 2011 Inventory to reflect the new information. At this time, it is difficult to project whether updated uncertainty bounds around CH<sub>4</sub> emission estimates would be wider, tighter, or about the same as the current uncertainty bounds that were developed for the Inventory published in 2011 (i.e., minus 19 percent and plus 30 percent) given the extensive nature of these revisions.

Details on EPA's planned uncertainty analysis are described in the Planned Improvements section.

EPA conducted a quantitative uncertainty analysis for the 2011 Inventory to determine the level of uncertainty surrounding estimates of emissions from natural gas systems using the IPCC-recommended Approach 2 methodology (Monte Carlo Simulation technique). The @RISK software model was used to quantify the uncertainty associated with the emissions estimates using the 12 highest-emitting sources ("top 12 sources") for the year 2009. The @RISK analysis provides for the specification of probability density functions for key variables within a computational structure that mirrors the calculation of the inventory estimate. The IPCC guidance notes that in using this method, "some uncertainties that are not addressed by statistical means may exist, including those arising from omissions or double counting, or other conceptual errors, or from incomplete understanding of the processes that may lead to inaccuracies in estimates developed from models." As a result, the understanding of the uncertainty of emissions estimates for this category evolves and improves as the underlying methodologies and datasets improve.

The uncertainty analysis conducted for the 2011 Inventory has not yet been updated for this inventory; instead, EPA has applied the uncertainty percentage ranges calculated previously for 2009 to the 2014 emissions estimates. As discussed in the Recalculations Discussion section, EPA has used findings from multiple recently published studies along with GHGRP Subpart W data to revise the emission factors and activity data for many emission sources. Given these substantive revisions, it is unlikely that the 2009 uncertainty ranges applied will reflect the uncertainty associated with the recently revised emission factors and activity data sources. Details on an updated uncertainty analysis to reflect recent recalculations are described in the Planned Improvements section.

The results presented below provide with 95 percent certainty the range within which emissions from this source category are likely to fall for the year 2014, based on the previously conducted uncertainty assessment using the recommended IPCC methodology. The results of the Approach 2 quantitative uncertainty analysis are summarized in Table 3-51. Natural gas systems CH<sub>4</sub> emissions in 2014 were estimated to be between 142.7 and 229.0 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level, based on previously calculated uncertainty. Natural gas systems non-energy CO<sub>2</sub> emissions in 2014 were estimated to be between 34.3 and 55.1 MMT CO<sub>2</sub> Eq. at a 95 percent confidence level.

**Table 3-51: Approach 2 Quantitative Uncertainty Estimates for CH<sub>4</sub> and Non-energy CO<sub>2</sub> Emissions from Natural Gas Systems (MMT CO<sub>2</sub> Eq. and Percent)**

Source	Gas	2014 Emission Estimate (MMT CO <sub>2</sub> Eq.) <sup>b</sup>	Uncertainty Range Relative to Emission Estimate <sup>a</sup> (MMT CO <sub>2</sub> Eq.)			
			Lower Bound <sup>b</sup>		Upper Bound <sup>b</sup>	
Natural Gas Systems	CH <sub>4</sub>	176.1	142.7	229.0	-19%	+30%
Natural Gas Systems <sup>c</sup>	CO <sub>2</sub>	42.4	34.3	55.1	-19%	+30%

<sup>a</sup> Range of emission estimates estimated by applying the 95 percent confidence intervals obtained from the Monte Carlo Simulation analysis conducted for the year 2009.

<sup>b</sup> All reported values are rounded after calculation. As a result, lower and upper bounds may not be duplicable from other rounded values as shown in Table 3-46 and Table 3-47.

<sup>c</sup> An uncertainty analysis for the non-energy CO<sub>2</sub> emissions was not performed. The relative uncertainty estimated (expressed as a percent) from the CH<sub>4</sub> uncertainty analysis was applied to the point estimate of non-energy CO<sub>2</sub> emissions

EPA compared the quantitative uncertainty estimates for CH<sub>4</sub> emissions in recent years from natural gas systems to those reported in recently published studies (see “Additional Information and Updates under Consideration for Natural Gas and Petroleum Systems Uncertainty Estimates” [EPA 2016a]).<sup>73</sup> All studies reviewed for uncertainty information used the Monte Carlo simulation technique to examine uncertainty bounds for the estimates reported which is in line with the IPCC recommended Approach 2 methodology. The uncertainty ranges in the reported studies differ from those of EPA. However, it is difficult to extrapolate uncertainty ranges from these studies to apply to the Inventory estimates because the Inventory source category level uncertainty analysis is not directly comparable to source- or segment-specific uncertainty analyses in these studies. Further, the methodologies and data sources used in estimating CH<sub>4</sub> emissions in these studies differ significantly from the studies underlying previous Inventory methodologies.

Methodological recalculations were applied to the entire time-series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## QA/QC and Verification Discussion

The natural gas emission estimates in the Inventory are continually being reviewed and assessed to determine whether emission factors and activity factors accurately reflect current industry practices. A QA/QC analysis was performed for data gathering and input, documentation, and calculation. QA/QC checks are consistently conducted to minimize human error in the model calculations. EPA performs a thorough review of information associated with new studies, GHGRP data, regulations, public webcasts, and the Natural Gas STAR Program to assess whether the assumptions in the Inventory are consistent with current industry practices. In addition, EPA receives feedback through annual expert and public review periods. Feedback received is noted in the Recalculations and Planned Improvement sections.

## Recalculations Discussion

The EPA received information and data related to the emission estimates through the Inventory preparation process, previous Inventories’ formal public notice periods, GHGRP data, and new studies. The EPA carefully evaluated relevant information available, and made several updates, including revisions to production segment activity data, production segment pneumatic controller activity and emissions data, gathering and boosting facility emissions, transmission and storage station activity and emissions data, distribution segment emissions data for pipelines, distribution segment M&R station activity and emissions data, and distribution segment customer meter emissions data.

<sup>73</sup> See <<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>.

From December 2015 through February 2016, the EPA released four draft memoranda that discussed the changes under consideration and requested stakeholder feedback on those changes. See “Revisions under Consideration for Natural Gas and Petroleum Production Emissions,” “Revisions under Consideration for Gathering and Boosting Emissions,” “Revisions under Consideration for Transmission and Storage Emissions,” and “Revisions under Consideration for Distribution Emissions,” available at <https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>.

The impact of all revisions to natural gas systems is an increase of 18 MMT CO<sub>2</sub> Eq., or 12 percent, comparing the 2013 value from last year’s Inventory to the current Inventory. Over the time series, the average change is an increase of 13 MMT CO<sub>2</sub> Eq., or 7 percent.

Recalculations for the production segment (including gathering and boosting facilities) resulted in a large increase in the 2013 CH<sub>4</sub> emission estimate, from 47.0 MMT CO<sub>2</sub> Eq. in the previous (2015) Inventory, to 110.7 MMT CO<sub>2</sub> Eq. in the current (2016) Inventory, or 136 percent. Over the time series, the average change is an increase of 35 MMT CO<sub>2</sub> Eq., or 57 percent.

Although there were no methodological updates to the processing segment, recalculations due to updated data (specifically data on national dry gas production in 2013, which were revised slightly downwards) impacted emissions estimates, resulting in a decrease of 0.1 MMT CO<sub>2</sub> Eq., or less than 1 percent comparing the 2013 value from last year’s Inventory to the current Inventory. Over the time series, the average change was less than 1 percent.

Recalculations for the transmission and storage segment resulted in a large decrease in the 2013 CH<sub>4</sub> emission estimate, from 54.4 MMT CO<sub>2</sub> Eq. in the previous (2015) Inventory, to 30.8 MMT CO<sub>2</sub> Eq. in the current (2016) Inventory, or 43 percent. Over the time series, the average change is a decrease of 13 MMT CO<sub>2</sub> Eq., or 25 percent.

Recalculations for the distribution segment also resulted in a large decrease in the 2013 CH<sub>4</sub> emission estimate, from 33.3 MMT CO<sub>2</sub> Eq. in the previous (2015) Inventory, to 11.5 MMT CO<sub>2</sub> Eq. in the current (2016) Inventory, or 65 percent. Over the time series, the average change is a decrease of 9 MMT CO<sub>2</sub> Eq., or 27 percent.

## Production

This section references the final 2016 (current) Inventory production segment supporting memoranda: “Revisions to Natural Gas and Petroleum Production Emissions” and “Revisions to Natural Gas Gathering and Boosting Emissions” (EPA 2016b and EPA 2016c).<sup>74</sup> These memoranda contain further details and documentation of recalculations.

Using newly available GHGRP activity data, the EPA developed activity factors (i.e., counts per gas well) for in-line heaters, separators, dehydrators, compressors, meters/piping, pneumatic pumps, and pneumatic controllers. EPA reviewed this new data source and the previous data, assessed stakeholder feedback, and determined that the previous data source represents activities from the time period in which the data were collected (early 1990s) and the new GHGRP data source represents activities from recent years. The EPA applied the updated activity factors to calculate emissions from these sources for the years from 2011 to 2014 in the 2016 (current) Inventory natural gas production segment, while retaining the previous activity factors for 1990 to 1992. For years 1993 through 2010, the EPA calculated equipment counts by linearly interpolating between the data points of per well equipment counts in 1992 (based on GRI/EPA) and per well equipment counts in 2011 (based on GHGRP). This reflects an assumed gradual transition from the counts per well observed in the 1996 study and the counts observed in the recent GHGRP data.

The production segment activity data revisions not only reflect more current information on activity, but also tailor these emission sources to specifically reflect activity occurring at well pad facilities and not at gathering/centralized facilities. As discussed below and in the two supporting memoranda for the production segment, EPA has also implemented revisions to the gathering and boosting sub-segment so that equipment leaks from both types of facilities are fully, but separately, represented. In the public review draft, EPA noted potential issues with ensuring that vented emissions from certain equipment (e.g., pneumatic controllers, chemical injection pumps, dehydrator vents, and Kimray pumps) are not double-counted or inadvertently excluded due to these methodological revisions.

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<sup>74</sup> See <<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>.

The 2016 (current) Inventory methodology for these sources generally addresses this concern. Please refer to “Revisions to Natural Gas and Petroleum Production Emissions” for more information (EPA 2015b).

The impact of using activity factors developed from GHGRP data is an increase in emissions. This increase is shown in Table 3-52. For the year 2013, compared to the previous Inventory, the calculated CH<sub>4</sub> emissions increase due to use of revised activity factors for heaters, separators, dehydrators, compressors, and meters/piping is approximately 0.4 MMT CO<sub>2</sub> Eq. In addition, as dehydrator counts are an input to the calculation of emissions from the dehydrator vent and Kimray pump source, the revision to activity data impacted those estimates as well, resulting in a decrease of 2 MMT CO<sub>2</sub> Eq. for dehydrator vents, and 7 MMT CO<sub>2</sub> Eq. for Kimray pumps (comparing updated 2013 estimate to previous 2013 estimate). For chemical injection pumps, in addition to updating the activity data, emission factors were also recalculated using GHGRP data. This recalculation resulted in an increase in calculated emissions from chemical pumps for 2013 of 1.7 MMT CO<sub>2</sub> Eq., compared with the previous inventory estimate for 2013.

**Table 3-52: CH<sub>4</sub> Emissions from Sources with Updates to use GHGRP Data (MMT CO<sub>2</sub> Eq.)**

Type	Source	1990	2005	2010	2013	2014
Venting	Chemical Injection Pumps	0.7	2.4	3.3	3.2	3.2
	<i>Previous-Chemical</i>					
<i>Venting</i>	<i>Injection Pumps</i>	<i>0.7</i>	<i>1.4</i>	<i>1.6</i>	<i>1.5</i>	<i>NA</i>
Fugitive	Dehydrators	0.4	0.3	0.2	0.2	0.2
<i>Fugitive</i>	<i>Previous-Dehydrators</i>	<i>0.4</i>	<i>0.7</i>	<i>0.8</i>	<i>0.8</i>	<i>NA</i>
Fugitive	Separators	1.1	2.4	3.0	3.0	3.0
<i>Fugitive</i>	<i>Previous-Separators</i>	<i>1.1</i>	<i>2.1</i>	<i>2.6</i>	<i>2.6</i>	<i>NA</i>
Fugitive	Heaters	0.3	0.5	0.6	0.6	0.6
<i>Fugitive</i>	<i>Previous- Heaters</i>	<i>0.3</i>	<i>0.7</i>	<i>0.8</i>	<i>0.8</i>	<i>NA</i>
Fugitive	Meters/Piping	1.2	2.3	2.7	2.7	2.7
<i>Fugitive</i>	<i>Previous-Meters/Piping</i>	<i>1.3</i>	<i>2.2</i>	<i>2.7</i>	<i>2.6</i>	<i>NA</i>
Fugitive	Compressors	0.8	1.9	2.4	2.4	2.4
<i>Fugitive</i>	<i>Previous-Compressors</i>	<i>0.9</i>	<i>1.5</i>	<i>1.8</i>	<i>1.7</i>	<i>NA</i>

NA – Not applicable

Note: Values in *italics* are from the previous Inventory.

Using the GHGRP data, the EPA also developed technology-specific activity data and emission factors for pneumatic controllers. Reported data under the GHGRP allow for the development of pneumatic controller emission factors specific to bleed type (continuous high bleed, continuous low bleed, and intermittent bleed) and the associated break-out of activity data into these categories. These revised emission factors and bleed type-specific activity data reflect net emissions. Comparing the updated 2013 estimate to the previous Inventory 2013 estimate, the impact of using bleed type-specific emission factors and activity data developed from GHGRP data on pneumatic controller emissions is an increase of approximately 18.0 MMT CO<sub>2</sub> Eq., as shown in Table 3-53.

**Table 3-53: CH<sub>4</sub> Emissions from Pneumatic Controllers (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
<b>All</b>	<b>13.9</b>	<b>27.0</b>	<b>31.2</b>	<b>31.5</b>	<b>27.6</b>
High bleed	+	12.1	10.9	4.8	3.3
Low bleed	8.4	0.6	1.1	0.6	1.0
Intermittent bleed	5.5	14.3	19.2	26.0	23.3
<i>Previous-All</i>	<i>13.4</i>	<i>20.2</i>	<i>16.2</i>	<i>13.5</i>	<i>NA</i>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NA – Not applicable

Note: Values in *italics* are from the previous Inventory.

The 2015 Marchese et al. study assessed CH<sub>4</sub> emissions from an expanded universe of gathering stations compared with what was previously included in the Inventory. The Marchese et al. study analyzed emissions from five different types of gathering stations: compression only; compression and dehydration; compression, dehydration, and acid gas removal; dehydration only; and dehydration and acid gas removal. Previous Inventories estimated emissions from only gathering compression stations. In this Inventory, the EPA has applied a station-level emission factor and national activity estimates developed from the Marchese et al. data. See “Revisions to Natural Gas



Gathering and Boosting Emissions” for more information (EPA 2016c).<sup>75</sup> The impact of using revised activity data and emission factors for gathering stations cannot be straightforwardly determined based on the structure of previous Inventories (e.g., dehydrator emissions in previous inventories are not differentiated between well pad and gathering facility locations); however, due to the activity data revision alone, production segment emissions greatly increase compared to previous estimates. The station-level emission factor was applied to all years of the time series, and current activity data estimates were replaced with station counts based on the Marchese et al. estimate (scaled for earlier years based on national natural gas marketed production). Methane emissions from gathering and boosting are shown in Table 3-54.

**Table 3-54: CH<sub>4</sub> Emissions from Gathering and Boosting (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
Gathering and Boosting Stations	23.9	27.7	35.8	43.3	46.6

The EPA’s approach for revising the Inventory methodology to incorporate GHGRP data and Marchese et al. data obviates the need to apply Gas STAR reductions data for certain sources in the production segment. EPA carried forward reported reductions for sources that are not being revised to use a net emission factor approach. There are also significant Gas STAR reductions in the production segment that are not classified as applicable to specific emission sources (“other voluntary reductions” are 18 MMT CO<sub>2</sub> Eq. of CH<sub>4</sub> in year 2014). To address potential double-counting of reductions, a scaling factor was applied to the “other voluntary reductions” to reduce this reported amount based on an estimate of the fraction of those reductions that occur in the sources that are now calculated using net emissions approaches. This fraction was developed by dividing the net emissions from sources with net emissions approaches, by the total production segment emissions (without deducting the Gas STAR reductions). The result for 2014, is that approximately 50 percent of the reductions were estimated to occur in sources for which net emissions are now calculated, which yields an adjusted “other voluntary reduction” number of 9 MMT CO<sub>2</sub> Eq.

## Transmission and Storage

This section references the final 2016 (current) Inventory Transmission and Storage supporting memorandum: “Revisions to Natural Gas Transmission and Storage Emissions” (EPA 2016d).<sup>76</sup> This memorandum contains further details and documentation of recalculations.

For transmission and storage non-compressor fugitive emissions in the 2016 (current) Inventory, EPA used Zimmerle et al. data to develop the activity data for transmission stations (“Alternative” approach) and EIA data on active storage fields, along with the Zimmerle estimate of storage stations per storage field to develop storage station counts. The EPA then applied emission factors from Zimmerle et al. to calculate emissions for fugitives from these sources.

Interpolation was used to create time series consistency between earlier years’ emission factors (1990-1992) that generally rely on data from GRI/EPA 1996 and the Zimmerle et al. emission factors for recent years. However, the station fugitive emission factors in previous Inventories included station fugitives but not compressor fugitives, and separate emission factors were applied for compressor emissions (including compressor fugitive and vented sources). Because Zimmerle et al. grouped compressor fugitives with station fugitives, the two sets of emission factors (GRI/EPA and Zimmerle et al.) cannot be directly compared. Therefore in the 2016 (current) Inventory, the EPA calculated total station-level emission factors for transmission and storage stations that include station and compressor fugitive sources as well as compressor vented sources.

In the 2016 (current) Inventory, the EPA incorporated Zimmerle et al. national population estimates of reciprocating and centrifugal compressor activity data, along with the GHGRP break out between centrifugal compressor seal types (wet versus dry seals), and Zimmerle et al. emission factor data, in development of emission estimates for compressors in transmission and storage.

<sup>75</sup> See <<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>.

<sup>76</sup> See <<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>.

In order to create time series consistency between earlier years' compressor count estimates (1990 to 1992) and the most recent years' compressor count estimates (2012 to 2014) that were calculated from Zimmerle et al. and GHGRP data, compressor counts for the years 1993 through 2011 were calculated using linear interpolation between the data endpoints of 1992 and 2012.

The overall impact of using revised emissions data and activity data from Zimmerle et al. and GHGRP is a decrease in emissions for station fugitives and compressors. For the year 2013, the CH<sub>4</sub> emissions decrease due to use of revised emission factors and activity data for transmission and storage station fugitives and compressor venting is approximately 18.4 MMT CO<sub>2</sub> Eq. Methane emissions from transmission stations are shown in Table 3-55, while methane emissions from storage stations are shown in Table 3-56.

**Table 3-55: CH<sub>4</sub> Emissions from Transmission Stations (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
<b>Station Total Emissions</b>	<b>27.5</b>	<b>16.7</b>	<b>13.0</b>	<b>13.4</b>	<b>14.3</b>
Station + Compressor					
Fugitive Emissions	NA	NA	NA	2.7	2.9
Reciprocating Compressor	NA	NA	NA	7.9	8.5
Centrifugal Compressor (wet seals)	NA	NA	NA	1.4	1.5
Centrifugal Compressor (dry seals)	NA	NA	NA	1.3	1.4
<b><i>Previous-Station Total</i></b>	<b><i>27.5</i></b>	<b><i>28.1</i></b>	<b><i>28.5</i></b>	<b><i>28.3</i></b>	<b><i>NA</i></b>
<i>Previous-Station Fugitives<sup>a</sup></i>	<i>2.7</i>	<i>2.8</i>	<i>2.8</i>	<i>2.8</i>	<i>NA</i>
<i>Previous-Reciprocating Compressor<sup>a</sup></i>	<i>18.6</i>	<i>19.2</i>	<i>19.4</i>	<i>19.3</i>	<i>NA</i>
<i>Previous-Centrifugal Compressor (wet seals)<sup>a</sup></i>	<i>6.2</i>	<i>5.9</i>	<i>5.9</i>	<i>5.8</i>	<i>NA</i>
<i>Previous-Centrifugal Compressor (dry seals)<sup>a</sup></i>	<i>+</i>	<i>0.3</i>	<i>0.4</i>	<i>0.4</i>	<i>NA</i>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NA – Not applicable

\*These values from the previous inventory cannot be compared to the estimates in this Inventory as the source categories have different definitions in their respective data sources (e.g., one includes certain fugitives, one does not).

Note: Values in *italics* are from the previous Inventory.

**Table 3-56: CH<sub>4</sub> Emissions from Storage Stations (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
<b>Station Total Emissions</b>	<b>6.1</b>	<b>4.1</b>	<b>3.5</b>	<b>3.3</b>	<b>3.3</b>
Station + Compressor					
Fugitive Emissions	NA	NA	NA	0.6	0.6
Reciprocating Compressor	NA	NA	NA	2.7	2.7
Centrifugal Compressor (wet seals)	NA	NA	NA	NA	NA
Centrifugal Compressor (dry seals)	NA	NA	NA	NA	NA
<b><i>Previous-Station Total</i></b>	<b><i>6.1</i></b>	<b><i>6.7</i></b>	<b><i>6.6</i></b>	<b><i>6.8</i></b>	<b><i>NA</i></b>
<i>Previous-Station Fugitives<sup>a</sup></i>	<i>1.4</i>	<i>1.5</i>	<i>1.5</i>	<i>1.5</i>	<i>NA</i>
<i>Previous-Reciprocating Compressor<sup>a</sup></i>	<i>3.9</i>	<i>4.3</i>	<i>4.3</i>	<i>4.4</i>	<i>NA</i>
<i>Previous-Centrifugal Compressor (wet seals)<sup>a</sup></i>	<i>0.8</i>	<i>0.8</i>	<i>0.7</i>	<i>0.6</i>	<i>NA</i>
<i>Previous-Centrifugal Compressor (dry seals)<sup>a</sup></i>	<i>+</i>	<i>0.1</i>	<i>0.2</i>	<i>0.3</i>	<i>NA</i>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NA – Not applicable

\* These values from the previous inventory cannot be compared to the estimates in this Inventory as the source categories have different definitions in their respective data sources (e.g., one includes certain fugitives, one does not).

Note: Values in *italics* are from the previous Inventory.

In the 2016 (current) Inventory, the transmission and storage pneumatic controller emissions have been calculated using the GHGRP data on controllers per station and emission factors. The overall impact of using revised emissions data and activity data from GHGRP was a decrease in emissions from transmission station pneumatic controllers and a slight decrease in emissions from storage station pneumatic controllers for recent time series years. For the year 2013, the CH<sub>4</sub> emissions decrease due to use of revised emission factors and activity data for transmission and storage station pneumatic controllers is 5.0 MMT CO<sub>2</sub> Eq. Methane emissions from transmission segment pneumatic controllers are shown in Table 3-57, while methane emissions from storage segment pneumatic controllers are shown in Table 3-58.

In order to create time series consistency between earlier years' pneumatic controller data (1990 to 1992) and the most recent years' data (2011 to 2014) when populating intermediate years, the EPA retained counts and estimates of weighted average emissions per controller in early years, then linearly interpolated the total count and weighted average emissions per controller in year 2011.

**Table 3-57: CH<sub>4</sub> Emissions from Transmission Segment Pneumatic Controllers (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
<b>All</b>	5.3	1.8	0.9	0.7	0.7
High bleed	NA	NA	NA	0.3	0.3
Low bleed	NA	NA	NA	0.3	0.4
Intermittent bleed	NA	NA	NA	+	+
<b><i>Previous-All</i></b>	<i>5.3</i>	<i>5.2</i>	<i>5.3</i>	<i>5.2</i>	<i>NA</i>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NA – Not applicable

Note: Values in *italics* are from the previous Inventory.

**Table 3-58: CH<sub>4</sub> Emissions from Storage Segment Pneumatic Controllers (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
<b>All</b>	1.1	0.9	0.7	0.8	0.7
High bleed	NA	NA	NA	0.6	0.6
Low bleed	NA	NA	NA	0.1	0.1
Intermittent bleed	NA	NA	NA	+	+
<b><i>Previous-All</i></b>	<i>1.1</i>	<i>1.2</i>	<i>1.2</i>	<i>1.3</i>	<i>NA</i>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NA – Not applicable

Note: Values in *italics* are from the previous Inventory.

The EPA's approach for revising the inventory methodology to incorporate Zimmerle et al. and GHGRP data in the transmission and storage segment resulted in net emissions being directly calculated for revised sources in each time series year. This obviated the need to apply Gas STAR reductions data for these sources. Previous Inventories have applied Gas STAR reductions to other specific transmission and storage segment sources including compressor engine and pipeline venting. EPA carried forward reported reductions for these sources since they are not being revised to use a net emission factor approach. There are also Gas STAR reductions in the transmission and storage segment that are not classified as applicable to specific emission sources ("other voluntary reductions" are 3.6 MMT CO<sub>2</sub> Eq. CH<sub>4</sub> in year 2013). Some portion of the "other voluntary reductions" might apply to the emission sources for which the EPA has revised the methodology to use a net emission factor approach. The EPA is investigating potential disaggregation of "other voluntary reductions." The EPA has retained Gas STAR reductions classified as "other voluntary reductions," without adjustment, in the 2016 (current) Inventory.

## Distribution

This section references the final 2016 (current) Inventory Distribution supporting memorandum: “Revisions to Natural Gas Distribution Emissions” (EPA 2016e).<sup>77</sup> This memorandum contains further details and documentation of recalculations.

For metering and regulating (M&R) stations, for the years from 2011 to 2014, in the 2016 (current) Inventory, the EPA used GHGRP reported activity data for counts of above ground and below ground stations. The EPA scaled the GHGRP station counts to the national level based on the miles of distribution pipeline main reported by GHGRP reporters, compared to the PHMSA national total miles of distribution pipeline main. The EPA then applied the existing inventory (from GRI) break out of station inlet pressure categories to the scaled counts of above ground and below ground M&R stations, and the station-level emission factors from Lamb et al. For years from 1990 to 2010, EPA used the previous inventory activity data for station counts. EPA used linear interpolation between GRI/EPA emission factors in early years (1990 to 1992) and Lamb et al. emission factors in recent years (2011 to 2014) for M&R stations.

For the year 2013, the M&R stations CH<sub>4</sub> emissions decrease due to use of revised emission factors and activity data is approximately 13.6 MMT CO<sub>2</sub> Eq. Methane emissions from M&R stations are shown in Table 3-59.

**Table 3-59: CH<sub>4</sub> Emissions from M&R Stations (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
M&R	10.5	4.9	1.1	0.9	0.7
<i>Previous--M&amp;R</i>	8.2	9.1	9.0	9.3	NA
R-Vault	+	0.1	0.1	+	+
<i>Previous--R-Vault</i>	+	+	+	+	NA
Reg	6.3	2.8	0.6	0.4	0.3
<i>Previous--Reg</i>	4.9	5.4	5.4	5.6	NA

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NA – Not applicable

Note: Values in *italics* are from the previous Inventory.

For pipeline leaks, in the 2016 (current) Inventory, the EPA used the previous activity data sources for miles of pipeline by material (PHMSA) and for leaks per mile (GRI), and Lamb et al., data on emissions per leak for recent years of the time series. For the year 2013, the pipeline leaks CH<sub>4</sub> emissions decrease due to use of revised emission factors is approximately 9.2 MMT CO<sub>2</sub> Eq. Methane emissions from pipeline leaks are shown in Table 3-60.

EPA used linear interpolation between GRI/EPA emission factors in early years (1990 to 1992) and Lamb et al. emission factors in recent years (2011 to 2014) for pipeline leaks.

**Table 3-60: CH<sub>4</sub> Emissions from Pipeline Leaks (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
Mains	14.7	6.7	4.5	3.9	3.8
<i>Previous--Mains</i>	14.7	11.8	11.3	10.7	NA
Services	8.2	4.0	2.6	2.2	2.1
<i>Previous--Services</i>	8.2	6.2	5.1	4.6	NA

NA – Not applicable

Note: Values in *italics* are from the previous Inventory.

In the 2016 (current) Inventory, the EPA revised the emission factors for residential customer meters and commercial/ industrial customer meters. The EPA recalculated the residential customer meter emission factor by combining data from the 1996 GRI/EPA study (basis for previous Inventory emission factor) with more recent data from a GTI 2009 study and Clearstone 2011 study. The EPA weighted emission factors developed in each study by the number of meters surveyed in each study to develop the revised emission factor. In the 2016 (current) Inventory, the EPA applied the GTI 2009 commercial customer meter emission factor to the total count of commercial and

<sup>77</sup> See <<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>.

industrial meters in the GHG Inventory. In addition, the EPA used an updated data source, identified by commenters on the public review Distribution memorandum for national customer meter counts (EIA data); previously, national customer meter counts were scaled from a 1992 base year value, but are now available directly for every year of the time series from EIA. For the year 2013, the customer meters CH<sub>4</sub> emissions increase due to use of revised emission factors and activity data is approximately 0.3 MMT CO<sub>2</sub> Eq. Methane emissions from customer meters are shown in Table 3-61.

For pipeline blowdowns and mishaps/dig-ins, the previous Inventories used base year 1992 distribution main and service miles and scaled the value for non-1992 years using relative residential gas consumption. However, scaling mileage based on residential gas consumption introduced volatility across the time series that does not likely correlate to pipeline mileage trends (as gas consumption is affected by other factors such as equipment efficiency and climate). In the 2016 (current) Inventory, the EPA used PHMSA data directly for the activity data in each time series year. The overall impact of using the revised activity data for pipeline blowdowns and mishaps/dig-ins is an increase in emissions. For the year 2013, the pipeline blowdowns CH<sub>4</sub> emissions increase due to use of revised activity data is approximately 0.04 MMT CO<sub>2</sub> Eq.; and for mishaps/dig-ins is approximately 0.6 MMT CO<sub>2</sub> Eq. Methane emissions from pipeline blowdown and mishaps/dig-ins are shown in Table 3-61.

**Table 3-61: CH<sub>4</sub> Emissions for Other Distribution Sources (MMT CO<sub>2</sub> Eq.)**

Source	1990	2005	2010	2013	2014
Residential Meters	1.5	1.9	1.9	2.0	2.0
<i>Previous--Residential Meters</i>	2.6	2.8	2.8	2.9	NA
Commercial/Industry Meters	1.1	1.3	1.3	1.4	1.4
<i>Previous--Commercial/Industry Meters</i>	0.1	0.1	0.1	0.1	NA
Pressure Relief Valve Releases	+	+	+	+	+
<i>Previous--Pressure Relief Valve Releases</i>	+	+	+	+	NA
Pipeline Blowdowns	0.1	0.1	0.1	0.1	0.1
<i>Previous--Pipeline Blowdown</i>	0.1	0.1	0.1	0.1	NA
Mishaps (Dig-ins)	1.2	1.5	1.6	1.6	1.7
<i>Previous--Mishaps (Dig-ins)</i>	0.9	1.0	1.0	1.0	NA

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

NA – Not applicable

Note: Values in *italics* are from the previous Inventory.

The EPA’s approach for revising the Inventory methodology to incorporate Lamb et al. and subpart W data in the distribution segment resulted in net emissions being directly calculated for M&R stations, pipeline leaks, and customer meters in each time series year. This obviates the need to apply Gas STAR reductions data for these sources. Previous Inventories have also applied Gas STAR reductions to mishaps/dig-ins. EPA carried forward reported reductions for this source since it is not being revised to use a net emission factor approach. There are also Gas STAR reductions in the distribution segment that are not classified as applicable to specific emission sources (“other voluntary reductions” are 1.0 MMT CO<sub>2</sub> Eq. CH<sub>4</sub> in year 2013). Some portion of the “other voluntary reductions” might apply to the emission sources for which the EPA has revised methodology to use a net emission factor approach. The EPA is investigating potential disaggregation of “other voluntary reductions.” The EPA has retained Gas STAR reductions classified as “other voluntary reductions” unadjusted in the 2016 (current) Inventory.

## Planned Improvements

### Production Segment Estimates

In response to the public review draft and earlier released memorandum outlining potential revisions to the production and gathering and boosting segment, EPA received feedback from stakeholders that will be further considered to refine future Inventories.

In the production segment, some commenters suggested that the approach taken overestimates equipment counts in the production segment, while others suggested that the approach was appropriate. The EPA will further consider

how activity factors developed from GHGRP data may over- or under-represent equipment counts for non-GHGRP facilities (those not meeting the emissions reporting threshold). Preliminary assessment by EPA of this issue by disaggregating GHGRP reporter data by number of wells reported indicated that reporters with fewer wells had higher equipment counts per well than average. EPA will continue to explore other methods to assess whether the non-GHGRP population may have different average equipment counts than the reporting population and how this may be reflected in the Inventory. The EPA will also consider calculation of activity factors from GHGRP data (equipment and pneumatic controller counts per well) on a more granular basis, such as by geologic basin. EPA will continue to consider stakeholder feedback on the methodology used to develop counts of active wells (non-associated gas wells and gas wells with hydraulic fracturing) across the time series.

In response to the public review memoranda, EPA also received feedback from stakeholders on aspects of emission sources that were not significantly revised in the 2016 (current) Inventory. Stakeholders noted that data generated by Allen et al. in recent studies of pneumatic controller emissions in the production segment might be used to develop a separate emission factor for malfunctioning devices (in addition to the bleed type-specific factors developed from GHGRP data and used in the 2016 (current) Inventory). Stakeholders also recommended further investigating the emissions estimation methodology for gathering pipeline emissions, as the current factor is based on leak measurements from distribution mains conducted in the early 1990s. EPA will evaluate available data studies on this emission sources, and also take into account material-specific gathering pipeline activity data that will be available through the GHGRP.

EPA is considering updates to its estimates for liquids unloading. Data from a 2012 report published by the American Petroleum Institute (API) and America's Natural Gas Alliance (ANGA) were used to develop regional activity data and regional emission factors for gas well liquids unloading activities for Natural Gas Systems. EPA is considering how data from GHGRP and/or Allen et al. (2014a) can be used to update the Inventory estimates for this source.<sup>78</sup> Some commenters supported the use of scaled-up GHGRP data to calculate emissions from this source. Using the general scale up approach used for other production sources gives an approximation of a national estimate of 10 MMT CO<sub>2</sub> Eq. for 2013 (4.6 MMT CO<sub>2</sub> Eq. was reported from liquids unloading in 2013, from a total reported 208,991 wellheads estimated to be in the natural gas segment. The Inventory national well count total for 2013 is 454,491), compared with 6.5 MMT CO<sub>2</sub> Eq. in the current inventory.

EPA received mixed feedback on the update for gathering stations, with some commenters supporting the use of the Marchese et al. data, and others not supporting the update and recommending waiting for GHGRP data to update emissions from this source. Additionally, commenters recommended that EPA separate out emissions from gathering and boosting facilities from those from field production sites and noted that upcoming studies and GHGRP data may inform emissions estimates from this source. In the 2016 (current) Inventory, the EPA has presented gathering facility and gathering pipeline emissions as a "Gathering and Boosting" subsegment within the production segment; EPA will continue to consider how these sources may be presented in future Inventories. To address potential double counting, condensate storage tanks might be disaggregated between well pad facilities and gathering facilities in future Inventories. Stakeholder feedback included suggestions on how data from the Marchese et al. study and GHGRP data might be used, which EPA will consider for next year's inventory. One commenter suggested that the potential overlap count be estimated to be 3.4 percent of the emissions from condensate tanks.

## Processing Estimates

Commenters recommended consideration of recent data sources (Marchese et al. 2015 and GHGRP) for revisions to gas processing segment estimates. Commenters had mixed feedback on these data sources with some commenters supporting use of Marchese et al. and other supporting use of GHGRP data.

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<sup>78</sup> Please see the memorandum "Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2013: Potential Revisions to Liquids Unloading Estimates" (EPA 2015e) available at <<http://www.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>

## Transmission and Storage Estimates

In response to the public review memorandum outlining potential revisions to the transmission and storage segment, EPA received feedback from stakeholders that will be further considered to refine implementation of the 2016 revisions in future Inventories and to implement additional revisions. The EPA will consider approaches to developing average emission factors that integrate data from both recent studies and subpart W data. The EPA will seek more data to support or replace the Zimmerle et al. study assumption of 0.89 storage stations per field. The EPA will take into account findings emerging from ongoing research efforts by groups such as API (to better characterize emissions from pneumatic controllers) and Pipeline Research Council International (to analyze subpart W data). The EPA will also investigate potential revisions to certain emission sources not addressed in recent revisions but highlighted by commenters, including reciprocating compressor engines and storage tank dump valves.

In fall of 2015, a well in a California storage field began leaking methane at an estimated rate of 50 tons of CH<sub>4</sub> per day. The well was permanently sealed in February of 2016. EPA plans to include 2015 emissions from this source in next year's inventory (2017 report covering 1990 to 2015 emissions). EPA will review and potentially incorporate estimates of emissions from the leak, such as estimates developed by the California Air Resources Board (CARB). For information on CARB estimates, see [http://www.arb.ca.gov/research/aliso\\_canyon\\_natural\\_gas\\_leak.htm](http://www.arb.ca.gov/research/aliso_canyon_natural_gas_leak.htm).

## Distribution Estimates

In response to the public review memorandum outlining potential revisions to the distribution segment, EPA received feedback from stakeholders that will be further considered to refine implementation of the 2016 revisions in future Inventories and to implement additional revisions. The EPA will assess differences between the Lamb et al. study and characteristics of the GHGRP population. The EPA will consider current interpolation approaches to use GRI factors later into the time series (e.g., if information is received indicating a specific time frame for the transition to lower-emitting equipment and practices). The EPA will assess whether available data support methodological revisions to differentiate new versus vintage plastic pipelines in the Inventory. The EPA will assess any new data on commercial or industrial meters to potentially improve the current emission factor. While most commenters supported updates to this segment, several commenters did not, referring to top down (e.g., tall tower) studies indicating the emissions may be higher than previously estimated, not lower. The EPA will continue to assess new top down and bottom up data in this segment.

## Upcoming new data

### *GHGRP*

Beginning in March 2016, GHGRP reporters will report data for gathering facilities over the GHGRP reporting threshold. The EPA will consider use of this data to update its estimates in the Inventory.

Commenters on recent Inventory drafts have recommended that EPA analyze and screen GHGRP data and exclude or correct outliers. Commenters have also recommended use of only measured GHGRP data in some cases. The EPA plans to continue reviewing data reported to its GHGRP for potential updates to data and methodology across all segments of natural gas systems.

### *Methane Challenge*

In March 2016, EPA launched the Methane Challenge Program, through which oil and gas companies can make and track ambitious commitments to reduce methane emissions. EPA will assess new data received by the Methane Challenge Program on an ongoing basis, which may be used to confirm or improve existing estimates and assumptions.

## Other Updates

EPA is evaluating several other sources for potential updates to future Inventories.

Abandoned wells are not currently accounted for in the Inventory. EPA is seeking appropriate emission factors and national activity data available to calculate these emissions. Commenters supported including this source category, noted the currently data is limited, and suggested reviewing data that will become available in the future.

The EPA continues to seek stakeholder feedback on natural gas systems super-emitter sources. The EPA will continue reviewing studies that could support potential revisions to inventory estimates, such as information from the Barnett Shale Campaign (e.g., Zavala et al. 2015). Several commenters noted superemitters detected and modeled in the Zimmerle et al. study but not incorporated into the inventory revision. In Zimmerle et al., superemitters were estimated to contribute 2.5 MMT CO<sub>2</sub> Eq. emissions to the study total estimate of emissions transmission and storage sources. The EPA will consider how unassigned superemitter emissions could be incorporated into the Inventory. EPA received mixed feedback on this issue with some commenters urging EPA to incorporate an estimate for superemitters, and others stating that inclusion of an estimate of unassigned superemitter emissions would be inappropriate and could result in double counting.

## Uncertainty

As discussed in the Recalculations Discussion section above, EPA made several revisions in the 2016 (current) Inventory using information provided in recently published studies and the GHGRP Subpart W data, primarily including revisions to: production segment major equipment activity data, production segment pneumatic controller activity and emissions data, gathering and boosting facility activity and emissions data, transmission and storage station activity and emissions data, distribution pipelines emissions data, distribution M&R station activity and emissions data, and distribution customer meter emissions data. As noted in the Uncertainty section above, EPA has not yet updated its uncertainty analysis to reflect this new information. At the present time, it is difficult to project whether updated uncertainty bounds around CH<sub>4</sub> emission estimates would be wider, tighter, or about the same as the current uncertainty bounds that were developed for the Inventory published in 2011 (i.e., minus 19 percent and plus 30 percent) given the extensive nature of these revisions.

To update its uncertainty analysis, EPA will conduct a formal quantitative uncertainty analysis similar to that conducted for the 2011 Inventory using the IPCC-recommended Approach 2 methodology (Monte Carlo Simulation technique) using new data and taking into account stakeholder input received. For more information, please see the Uncertainty Memorandum (EPA 2016a). As in the 2011 Inventory analysis, EPA will first identify a select number of top-emitting emission sources for each source category. Note that to compile the top-emitting list of emission sources for natural gas systems, individual emission sources were analyzed at the NEMS region level for the production segment (because certain emission factors vary by region for many production sources), and at the national level for other segments. EPA is considering removing the NEMS region disaggregation in future Inventories, and potentially replacing it with a different level of disaggregation, such as at the sub-basin level. Refer to “Additional Information and Updates under Consideration for Natural Gas and Petroleum Systems Uncertainty (EPA 2016a) for more information on planned improvements regarding uncertainty.”<sup>79</sup>

## 3.8 Energy Sources of Indirect Greenhouse Gas Emissions

In addition to the main greenhouse gases addressed above, many energy-related activities generate emissions of indirect greenhouse gases. Total emissions of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and non-CH<sub>4</sub> volatile organic compounds (NMVOCs) from energy-related activities from 1990 to 2014 are reported in Table 3-62.

**Table 3-62: NO<sub>x</sub>, CO, and NMVOC Emissions from Energy-Related Activities (kt)**

Gas/Source	1990	2005	2010	2011	2012	2013	2014
NO <sub>x</sub>	21,106	16,602	12,004	11,796	11,051	10,557	9,995

<sup>79</sup> See <<https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport/natural-gas-systems.html>>.



Mobile Combustion	10,862	10,295	7,290	7,294	6,788	6,283	5,777
Stationary Combustion	10,023	5,858	4,092	3,807	3,567	3,579	3,522
Oil and Gas Activities	139	321	545	622	622	622	622
Waste Combustion	82	128	77	73	73	73	73
<i>International Bunker Fuels<sup>a</sup></i>	<i>1,956</i>	<i>1,704</i>	<i>1,790</i>	<i>1,553</i>	<i>1,398</i>	<i>1,139</i>	<i>1,138</i>
<b>CO</b>	<b>125,640</b>	<b>64,985</b>	<b>45,148</b>	<b>44,088</b>	<b>42,273</b>	<b>40,459</b>	<b>38,643</b>
Mobile Combustion	119,360	58,615	39,475	38,305	36,491	34,676	32,861
Stationary Combustion	5,000	4,648	4,103	4,170	4,170	4,170	4,169
Waste Combustion	978	1,403	1,084	1,003	1,003	1,003	1,003
Oil and Gas Activities	302	318	487	610	610	610	610
<i>International Bunker Fuels<sup>a</sup></i>	<i>103</i>	<i>133</i>	<i>136</i>	<i>137</i>	<i>133</i>	<i>129</i>	<i>135</i>
<b>NMVOCs</b>	<b>12,620</b>	<b>7,191</b>	<b>7,464</b>	<b>7,759</b>	<b>7,449</b>	<b>7,139</b>	<b>6,830</b>
Mobile Combustion	10,932	5,724	4,591	4,562	4,252	3,942	3,632
Oil and Gas Activities	554	510	2,205	2,517	2,517	2,517	2,517
Stationary Combustion	912	716	576	599	599	599	599
Waste Combustion	222	241	92	81	81	81	81
<i>International Bunker Fuels<sup>a</sup></i>	<i>57</i>	<i>54</i>	<i>56</i>	<i>51</i>	<i>46</i>	<i>41</i>	<i>42</i>

<sup>a</sup> These values are presented for informational purposes only and are not included in totals.

Note: Totals may not sum due to independent rounding.

## Methodology

Emission estimates for 1990 through 2014 were obtained from data published on the National Emission Inventory (NEI) Air Pollutant Emission Trends web site (EPA 2015), and disaggregated based on EPA (2003). Emission estimates for 2012, 2013, and 2014 for non-EGU and non-mobile sources are held constant from 2011 in EPA (2015). Emissions were calculated either for individual categories or for many categories combined, using basic activity data (e.g., the amount of raw material processed) as an indicator of emissions. National activity data were collected for individual applications from various agencies.

Activity data were used in conjunction with emission factors, which together relate the quantity of emissions to the activity. Emission factors are generally available from the EPA's *Compilation of Air Pollutant Emission Factors, AP-42* (EPA 1997). The EPA currently derives the overall emission control efficiency of a source category from a variety of information sources, including published reports, the 1985 National Acid Precipitation and Assessment Program emissions inventory, and other EPA databases.

## Uncertainty and Time-Series Consistency

Uncertainties in these estimates are partly due to the accuracy of the emission factors used and accurate estimates of activity data. A quantitative uncertainty analysis was not performed.

Methodological recalculations were applied to the entire time-series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## 3.9 International Bunker Fuels (IPCC Source Category 1: Memo Items)

Emissions resulting from the combustion of fuels used for international transport activities, termed international bunker fuels under the UNFCCC, are not included in national emission totals, but are reported separately based upon location of fuel sales. The decision to report emissions from international bunker fuels separately, instead of allocating them to a particular country, was made by the Intergovernmental Negotiating Committee in establishing

the Framework Convention on Climate Change.<sup>80</sup> These decisions are reflected in the IPCC methodological guidance, including IPCC (2006), in which countries are requested to report emissions from ships or aircraft that depart from their ports with fuel purchased within national boundaries and are engaged in international transport separately from national totals (IPCC 2006).<sup>81</sup>

Two transport modes are addressed under the IPCC definition of international bunker fuels: aviation and marine.<sup>82</sup> Greenhouse gases emitted from the combustion of international bunker fuels, like other fossil fuels, include CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O for marine transport modes, and CO<sub>2</sub> and N<sub>2</sub>O for aviation transport modes. Emissions from ground transport activities—by road vehicles and trains—even when crossing international borders are allocated to the country where the fuel was loaded into the vehicle and, therefore, are not counted as bunker fuel emissions.

The IPCC guidelines distinguish between different modes of air traffic. Civil aviation comprises aircraft used for the commercial transport of passengers and freight, military aviation comprises aircraft under the control of national armed forces, and general aviation applies to recreational and small corporate aircraft. The IPCC guidelines further define international bunker fuel use from civil aviation as the fuel combusted for civil (e.g., commercial) aviation purposes by aircraft arriving or departing on international flight segments. However, as mentioned above, and in keeping with the IPCC guidelines, only the fuel purchased in the United States and used by aircraft taking-off (i.e., departing) from the United States are reported here. The standard fuel used for civil aviation is kerosene-type jet fuel, while the typical fuel used for general aviation is aviation gasoline.<sup>83</sup>

Emissions of CO<sub>2</sub> from aircraft are essentially a function of fuel use. Nitrous oxide emissions also depend upon engine characteristics, flight conditions, and flight phase (i.e., take-off, climb, cruise, decent, and landing). Recent data suggest that little or no CH<sub>4</sub> is emitted by modern engines (Anderson et al. 2011), and as a result, CH<sub>4</sub> emissions from this category are considered zero. In jet engines, N<sub>2</sub>O is primarily produced by the oxidation of atmospheric nitrogen, and the majority of emissions occur during the cruise phase. International marine bunkers comprise emissions from fuels burned by ocean-going ships of all flags that are engaged in international transport. Ocean-going ships are generally classified as cargo and passenger carrying, military (i.e., U.S. Navy), fishing, and miscellaneous support ships (e.g., tugboats). For the purpose of estimating greenhouse gas emissions, international bunker fuels are solely related to cargo and passenger carrying vessels, which is the largest of the four categories, and military vessels. Two main types of fuels are used on sea-going vessels: distillate diesel fuel and residual fuel oil. Carbon dioxide is the primary greenhouse gas emitted from marine shipping.

Overall, aggregate greenhouse gas emissions in 2014 from the combustion of international bunker fuels from both aviation and marine activities were 104.2 MMT CO<sub>2</sub> Eq., or 0.3 percent below emissions in 1990 (see Table 3-63 and Table 3-64). Emissions from international flights and international shipping voyages departing from the United States have increased by 82.5 percent and decreased by 48.4 percent, respectively, since 1990. The majority of these emissions were in the form of CO<sub>2</sub>; however, small amounts of CH<sub>4</sub> (from marine transport modes) and N<sub>2</sub>O were also emitted.

**Table 3-63: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from International Bunker Fuels (MMT CO<sub>2</sub> Eq.)**

<b>Gas/Mode</b>	<b>1990</b>	<b>2005</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>CO<sub>2</sub></b>	<b>103.5</b>	<b>113.1</b>	<b>117.0</b>	<b>111.7</b>	<b>105.8</b>	<b>99.8</b>	<b>103.2</b>
Aviation	38.0	60.1	61.0	64.8	64.5	65.7	69.4
<i>Commercial</i>	30.0	55.6	57.4	61.7	61.4	62.8	66.3
<i>Military</i>	8.1	4.5	3.6	3.1	3.1	2.9	3.1
Marine	65.4	53.0	56.0	46.9	41.3	34.1	33.8
<b>CH<sub>4</sub></b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>

<sup>80</sup> See report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the work of its ninth session, held at Geneva from 7 to 18 February 1994 (A/AC.237/55, annex I, para. 1c).

<sup>81</sup> Note that the definition of international bunker fuels used by the UNFCCC differs from that used by the International Civil Aviation Organization.

<sup>82</sup> Most emission related international aviation and marine regulations are under the rubric of the International Civil Aviation Organization (ICAO) or the International Maritime Organization (IMO), which develop international codes, recommendations, and conventions, such as the International Convention of the Prevention of Pollution from Ships (MARPOL).

<sup>83</sup> Naphtha-type jet fuel was used in the past by the military in turbojet and turboprop aircraft engines.

Aviation <sup>a</sup>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<b>N<sub>2</sub>O</b>	<b>0.9</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>
Aviation	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.7
Marine	0.5	0.4	0.4	0.4	0.3	0.2	0.2	0.2
<b>Total</b>	<b>104.5</b>	<b>114.2</b>	<b>118.1</b>	<b>112.8</b>	<b>106.8</b>	<b>100.7</b>	<b>104.2</b>	

<sup>a</sup>CH<sub>4</sub> emissions from aviation are estimated to be zero.

Notes: Totals may not sum due to independent rounding. Includes aircraft cruise altitude emissions.

**Table 3-64: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O Emissions from International Bunker Fuels (kt)**

Gas/Mode	1990	2005	2010	2011	2012	2013	2014
<b>CO<sub>2</sub></b>	<b>103,463</b>	<b>113,139</b>	<b>116,992</b>	<b>111,660</b>	<b>105,805</b>	<b>99,763</b>	<b>103,201</b>
Aviation	38,034	60,125	60,967	64,790	64,524	65,664	69,411
Marine	65,429	53,014	56,025	46,870	41,281	34,099	33,791
<b>CH<sub>4</sub></b>	<b>7</b>	<b>5</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>3</b>
Aviation <sup>a</sup>	0	0	0	0	0	0	0
Marine	7	5	6	5	4	3	3
<b>N<sub>2</sub>O</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
Aviation	1	2	2	2	2	2	2
Marine	2	1	1	1	1	1	1

<sup>a</sup>CH<sub>4</sub> emissions from aviation are estimated to be zero.

Notes: Totals may not sum due to independent rounding. Includes aircraft cruise altitude emissions.

**Table 3-65: Aviation CO<sub>2</sub> and N<sub>2</sub>O Emissions for International Transport (MMT CO<sub>2</sub> Eq.)**

Aviation Mode	1990	2005	2010	2011	2012	2013	2014
Commercial Aircraft	30.0	55.6	57.4	61.7	61.4	62.8	66.3
Military Aircraft	8.1	4.5	3.6	3.1	3.1	2.9	3.1
<b>Total</b>	<b>38.0</b>	<b>60.1</b>	<b>61.0</b>	<b>64.8</b>	<b>64.5</b>	<b>65.7</b>	<b>69.4</b>

Notes: Totals may not sum due to independent rounding. Includes aircraft cruise altitude emissions.

## Methodology

Emissions of CO<sub>2</sub> were estimated by applying C content and fraction oxidized factors to fuel consumption activity data. This approach is analogous to that described under Section 3.1 – CO<sub>2</sub> from Fossil Fuel Combustion. Carbon content and fraction oxidized factors for jet fuel, distillate fuel oil, and residual fuel oil were taken directly from EIA and are presented in Annex 2.1, Annex 2.2, and Annex 3.8 of this Inventory. Density conversions were taken from Chevron (2000), ASTM (1989), and USAF (1998). Heat content for distillate fuel oil and residual fuel oil were taken from EIA (2016) and USAF (1998), and heat content for jet fuel was taken from EIA (2016). A complete description of the methodology and a listing of the various factors employed can be found in Annex 2.1. See Annex 3.8 for a specific discussion on the methodology used for estimating emissions from international bunker fuel use by the U.S. military.

Emission estimates for CH<sub>4</sub> and N<sub>2</sub>O were calculated by multiplying emission factors by measures of fuel consumption by fuel type and mode. Emission factors used in the calculations of CH<sub>4</sub> and N<sub>2</sub>O emissions were obtained from the *2006 IPCC Guidelines* (IPCC 2006). For aircraft emissions, the following values, in units of grams of pollutant per kilogram of fuel consumed (g/kg), were employed: 0.1 for N<sub>2</sub>O (IPCC 2006). For marine vessels consuming either distillate diesel or residual fuel oil the following values (g/MJ), were employed: 0.32 for CH<sub>4</sub> and 0.08 for N<sub>2</sub>O. Activity data for aviation included solely jet fuel consumption statistics, while the marine mode included both distillate diesel and residual fuel oil.

Activity data on domestic and international aircraft fuel consumption were developed by the U.S. Federal Aviation Administration (FAA) using radar-informed data from the FAA Enhanced Traffic Management System (ETMS) for 1990, 2000 through 2014 as modeled with the Aviation Environmental Design Tool (AEDT). This bottom-up approach is built from modeling dynamic aircraft performance for each flight occurring within an individual calendar year. The analysis incorporates data on the aircraft type, date, flight identifier, departure time, arrival time, departure airport, arrival airport, ground delay at each airport, and real-world flight trajectories. To generate results for a given flight within AEDT, the radar-informed aircraft data is correlated with engine and aircraft performance data to calculate fuel burn and exhaust emissions. Information on exhaust emissions for in-production aircraft engines comes from the International Civil Aviation Organization (ICAO) Aircraft Engine Emissions Databank (EDB). This bottom-up approach is in accordance with the Tier 3B method from the 2006 IPCC Guidelines (IPCC 2006).

International aviation CO<sub>2</sub> estimates for 1990 and 2000 through 2014 are obtained from FAA’s AEDT model (FAA 2016). The radar-informed method that was used to estimate CO<sub>2</sub> emissions for commercial aircraft for 1990, and 2000 through 2014 is not possible for 1991 through 1999 because the radar data set is not available for years prior to 2000. FAA developed OAG schedule-informed inventories modeled with AEDT and great circle trajectories for 1990, 2000 and 2010. Because fuel consumption and CO<sub>2</sub> emission estimates for years 1991 through 1999 are unavailable, consumption estimates for these years were calculated using fuel consumption estimates from the Bureau of Transportation Statistics (DOT 1991 through 2013), adjusted based on 2000 through 2005 data.

Data on U.S. Department of Defense (DoD) aviation bunker fuels and total jet fuel consumed by the U.S. military was supplied by the Office of the Under Secretary of Defense (Installations and Environment), DoD. Estimates of the percentage of each Service’s total operations that were international operations were developed by DoD. Military aviation bunkers included international operations, operations conducted from naval vessels at sea, and operations conducted from U.S. installations principally over international water in direct support of military operations at sea. Military aviation bunker fuel emissions were estimated using military fuel and operations data synthesized from unpublished data from DoD’s Defense Logistics Agency Energy (DLA Energy 2015). Together, the data allow the quantity of fuel used in military international operations to be estimated. Densities for each jet fuel type were obtained from a report from the U.S. Air Force (USAF 1998). Final jet fuel consumption estimates are presented in Table 3-66. See Annex 3.8 for additional discussion of military data.

Activity data on distillate diesel and residual fuel oil consumption by cargo or passenger carrying marine vessels departing from U.S. ports were taken from unpublished data collected by the Foreign Trade Division of the U.S. Department of Commerce’s Bureau of the Census (DOC 2015) for 1990 through 2001, 2007 through 2014, and the Department of Homeland Security’s Bunker Report for 2003 through 2006 (DHS 2008). Fuel consumption data for 2002 was interpolated due to inconsistencies in reported fuel consumption data. Activity data on distillate diesel consumption by military vessels departing from U.S. ports were provided by DLA Energy (2015). The total amount of fuel provided to naval vessels was reduced by 21 percent to account for fuel used while the vessels were not-underway (i.e., in port). Data on the percentage of steaming hours underway versus not-underway were provided by the U.S. Navy. These fuel consumption estimates are presented in Table 3-67.

**Table 3-66: Aviation Jet Fuel Consumption for International Transport (Million Gallons)**

<b>Nationality</b>	<b>1990</b>	<b>2005</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
U.S. and Foreign Carriers	3,222	5,983	6,173	6,634	6,604	6,748	7,126
U.S. Military	862	462	367	319	321	294	318
<b>Total</b>	<b>4,084</b>	<b>6,445</b>	<b>6,540</b>	<b>6,953</b>	<b>6,925</b>	<b>7,042</b>	<b>7,445</b>

Note: Totals may not sum due to independent rounding.

**Table 3-67: Marine Fuel Consumption for International Transport (Million Gallons)**

<b>Fuel Type</b>	<b>1990</b>	<b>2005</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Residual Fuel Oil	4,781	3,881	4,141	3,463	3,069	2,537	2,466
Distillate Diesel Fuel & Other	617	444	476	393	280	235	261
U.S. Military Naval Fuels	522	471	448	382	381	308	331
<b>Total</b>	<b>5,920</b>	<b>4,796</b>	<b>5,065</b>	<b>4,237</b>	<b>3,730</b>	<b>3,081</b>	<b>3,058</b>

Note: Totals may not sum due to independent rounding.

## Uncertainty and Time-Series Consistency

Emission estimates related to the consumption of international bunker fuels are subject to the same uncertainties as those from domestic aviation and marine mobile combustion emissions; however, additional uncertainties result from the difficulty in collecting accurate fuel consumption activity data for international transport activities separate from domestic transport activities.<sup>84</sup> For example, smaller aircraft on shorter routes often carry sufficient fuel to complete several flight segments without refueling in order to minimize time spent at the airport gate or take advantage of lower fuel prices at particular airports. This practice, called tankering, when done on international flights, complicates the use of fuel sales data for estimating bunker fuel emissions. Tankering is less common with the type of large, long-range aircraft that make many international flights from the United States, however. Similar practices occur in the marine shipping industry where fuel costs represent a significant portion of overall operating costs and fuel prices vary from port to port, leading to some tankering from ports with low fuel costs.

Uncertainties exist with regard to the total fuel used by military aircraft and ships, and in the activity data on military operations and training that were used to estimate percentages of total fuel use reported as bunker fuel emissions. Total aircraft and ship fuel use estimates were developed from DoD records, which document fuel sold to the Navy and Air Force from the Defense Logistics Agency. These data may slightly over or under estimate actual total fuel use in aircraft and ships because each Service may have procured fuel from, and/or may have sold to, traded with, and/or given fuel to other ships, aircraft, governments, or other entities. There are uncertainties in aircraft operations and training activity data. Estimates for the quantity of fuel actually used in Navy and Air Force flying activities reported as bunker fuel emissions had to be estimated based on a combination of available data and expert judgment. Estimates of marine bunker fuel emissions were based on Navy vessel steaming hour data, which reports fuel used while underway and fuel used while not underway. This approach does not capture some voyages that would be classified as domestic for a commercial vessel. Conversely, emissions from fuel used while not underway preceding an international voyage are reported as domestic rather than international as would be done for a commercial vessel. There is uncertainty associated with ground fuel estimates for 1997 through 2001. Small fuel quantities may have been used in vehicles or equipment other than that which was assumed for each fuel type.

There are also uncertainties in fuel end-uses by fuel-type, emissions factors, fuel densities, diesel fuel sulfur content, aircraft and vessel engine characteristics and fuel efficiencies, and the methodology used to back-calculate the data set to 1990 using the original set from 1995. The data were adjusted for trends in fuel use based on a closely correlating, but not matching, data set. All assumptions used to develop the estimate were based on process knowledge, Department and military Service data, and expert judgments. The magnitude of the potential errors related to the various uncertainties has not been calculated, but is believed to be small. The uncertainties associated with future military bunker fuel emission estimates could be reduced through additional data collection.

Although aggregate fuel consumption data have been used to estimate emissions from aviation, the recommended method for estimating emissions of gases other than CO<sub>2</sub> in the *2006 IPCC Guidelines* (IPCC 2006) is to use data by specific aircraft type, number of individual flights and, ideally, movement data to better differentiate between domestic and international aviation and to facilitate estimating the effects of changes in technologies. The IPCC also

<sup>84</sup> See uncertainty discussions under Carbon Dioxide Emissions from Fossil Fuel Combustion.

recommends that cruise altitude emissions be estimated separately using fuel consumption data, while landing and take-off (LTO) cycle data be used to estimate near-ground level emissions of gases other than CO<sub>2</sub>.<sup>85</sup>

There is also concern regarding the reliability of the existing DOC (2015) data on marine vessel fuel consumption reported at U.S. customs stations due to the significant degree of inter-annual variation.

Methodological recalculations were applied to the entire time-series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## QA/QC and Verification

A source-specific QA/QC plan for international bunker fuels was developed and implemented. This effort included a Tier 1 analysis, as well as portions of a Tier 2 analysis. The Tier 2 procedures that were implemented involved checks specifically focusing on the activity data and emission factor sources and methodology used for estimating CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from international bunker fuels in the United States. Emission totals for the different sectors and fuels were compared and trends were investigated. No corrective actions were necessary.

## Planned Improvements

The feasibility of including data from a broader range of domestic and international sources for bunker fuels, including data from studies such as the Third IMO GHG Study 2014, is being considered.

# 3.10 Wood Biomass and Ethanol Consumption (IPCC Source Category 1A)

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The combustion of biomass fuels such as wood, charcoal, and wood waste and biomass-based fuels such as ethanol generates CO<sub>2</sub> in addition to CH<sub>4</sub> and N<sub>2</sub>O already covered in this chapter. In line with the reporting requirements for inventories submitted under the UNFCCC, CO<sub>2</sub> emissions from biomass combustion have been estimated separately from fossil fuel CO<sub>2</sub> emissions and are not directly included in the energy sector contributions to U.S. totals. In accordance with IPCC methodological guidelines, any such emissions are calculated by accounting for net carbon (C) fluxes from changes in biogenic C reservoirs in wooded or crop lands. For a more complete description of this methodological approach, see the Land Use, Land-Use Change, and Forestry chapter (Chapter 6), which accounts for the contribution of any resulting CO<sub>2</sub> emissions to U.S. totals within the Land Use, Land-Use Change, and Forestry sector's approach.

In 2014, total CO<sub>2</sub> emissions from the burning of woody biomass in the industrial, residential, commercial, and electricity generation sectors were approximately 217.7 MMT CO<sub>2</sub> Eq. (217,654 kt) (see Table 3-68 and Table 3-69). As the largest consumer of woody biomass, the industrial sector was responsible for 57.1 percent of the CO<sub>2</sub> emissions from this source. The residential sector was the second largest emitter, constituting 27.5 percent of the total, while the commercial and electricity generation sectors accounted for the remainder.

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<sup>85</sup> U.S. aviation emission estimates for CO, NO<sub>x</sub>, and NMVOCs are reported by EPA's National Emission Inventory (NEI) Air Pollutant Emission Trends web site, and reported under the Mobile Combustion section. It should be noted that these estimates are based solely upon LTO cycles and consequently only capture near ground-level emissions, which are more relevant for air quality evaluations. These estimates also include both domestic and international flights. Therefore, estimates reported under the Mobile Combustion section overestimate IPCC-defined domestic CO, NO<sub>x</sub>, and NMVOC emissions by including landing and take-off (LTO) cycles by aircraft on international flights, but underestimate because they do not include emissions from aircraft on domestic flight segments at cruising altitudes. The estimates in Mobile Combustion are also likely to include emissions from ocean-going vessels departing from U.S. ports on international voyages.

**Table 3-68: CO<sub>2</sub> Emissions from Wood Consumption by End-Use Sector (MMT CO<sub>2</sub> Eq.)**

End-Use Sector	1990	2005	2010	2011	2012	2013	2014
Industrial	135.3	136.3	119.5	122.9	125.7	123.1	124.4
Residential	59.8	44.3	45.4	46.4	43.3	59.8	59.8
Commercial	6.8	7.2	7.4	7.1	6.3	7.2	7.6
Electricity Generation	13.3	19.1	20.2	18.8	19.6	21.4	25.9
<b>Total</b>	<b>215.2</b>	<b>206.9</b>	<b>192.5</b>	<b>195.2</b>	<b>194.9</b>	<b>211.6</b>	<b>217.7</b>

Note: Totals may not sum due to independent rounding.

**Table 3-69: CO<sub>2</sub> Emissions from Wood Consumption by End-Use Sector (kt)**

End-Use Sector	1990	2005	2010	2011	2012	2013	2014
Industrial	135,348	136,269	119,537	122,865	125,724	123,149	124,369
Residential	59,808	44,340	45,371	46,402	43,309	59,808	59,808
Commercial	6,779	7,218	7,385	7,131	6,257	7,235	7,569
Electricity Generation	13,252	19,074	20,169	18,784	19,612	21,389	25,908
<b>Total</b>	<b>215,186</b>	<b>206,901</b>	<b>192,462</b>	<b>195,182</b>	<b>194,903</b>	<b>211,581</b>	<b>217,654</b>

Note: Totals may not sum due to independent rounding.

The transportation sector is responsible for most of the ethanol consumption in the United States. Ethanol is currently produced primarily from corn grown in the Midwest, but it can be produced from a variety of biomass feedstocks. Most ethanol for transportation use is blended with gasoline to create a 90 percent gasoline, 10 percent by volume ethanol blend known as E-10 or gasohol.

In 2014, the United States consumed an estimated 1,111.3 trillion Btu of ethanol, and as a result, produced approximately 76.1 MMT CO<sub>2</sub> Eq. (76,075 kt) (see Table 3-70 and Table 3-71) of CO<sub>2</sub> emissions. Ethanol production and consumption has grown significantly since 1990 due to the favorable economics of blending ethanol into gasoline and federal policies that have encouraged use of renewable fuels.

**Table 3-70: CO<sub>2</sub> Emissions from Ethanol Consumption (MMT CO<sub>2</sub> Eq.)**

End-Use Sector	1990	2005	2010	2011	2012	2013	2014
Transportation <sup>a</sup>	4.1	22.4	71.3	71.5	71.5	73.4	74.8
Industrial	0.1	0.5	1.1	1.1	1.1	1.2	1.0
Commercial	+	0.1	0.2	0.2	0.2	0.2	0.3
<b>Total</b>	<b>4.2</b>	<b>22.9</b>	<b>72.6</b>	<b>72.9</b>	<b>72.8</b>	<b>74.7</b>	<b>76.1</b>

+ Does not exceed 0.05 MMT CO<sub>2</sub> Eq.

<sup>a</sup> See Annex 3.2, Table A-94 for additional information on transportation consumption of these fuels.

Note: Totals may not sum due to independent rounding.

**Table 3-71: CO<sub>2</sub> Emissions from Ethanol Consumption (kt)**

End-Use Sector	1990	2005	2010	2011	2012	2013	2014
Transportation <sup>a</sup>	4,136	22,414	71,287	71,537	71,510	73,359	74,810
Industrial	56	468	1,134	1,146	1,142	1,202	987
Commercial	34	60	226	198	175	183	277
<b>Total</b>	<b>4,227</b>	<b>22,943</b>	<b>72,647</b>	<b>72,881</b>	<b>72,827</b>	<b>74,743</b>	<b>76,075</b>

<sup>a</sup> See Annex 3.2, Table A-94 for additional information on transportation consumption of these fuels.

Note: Totals may not sum due to independent rounding.

## Methodology

Woody biomass emissions were estimated by applying two EIA gross heat contents (Lindstrom 2006) to U.S. consumption data (EIA 2016) (see Table 3-72), provided in energy units for the industrial, residential, commercial, and electric generation sectors. One heat content (16.95 MMBtu/MT wood and wood waste) was applied to the industrial sector's consumption, while the other heat content (15.43 MMBtu/MT wood and wood waste) was applied to the consumption data for the other sectors. An EIA emission factor of 0.434 MT C/MT wood (Lindstrom 2006) was then applied to the resulting quantities of woody biomass to obtain CO<sub>2</sub> emission estimates. It was assumed that the woody biomass contains black liquor and other wood wastes, has a moisture content of 12 percent, and is converted into CO<sub>2</sub> with 100 percent efficiency. The emissions from ethanol consumption were calculated by applying an emission factor of 18.67 MMT C/QBtu (EPA 2010) to U.S. ethanol consumption estimates that were provided in energy units (EIA 2016) (see Table 3-73).

**Table 3-72: Woody Biomass Consumption by Sector (Trillion Btu)**

End-Use Sector	1990	2005	2010	2011	2012	2013	2014
Industrial	1,441.9	1,451.7	1,273.5	1,308.9	1,339.4	1,312.0	1,325.0
Residential	580.0	430.0	440.0	450.0	420.0	580.0	580.0
Commercial	65.7	70.0	71.6	69.2	60.7	70.2	73.4
Electricity Generation	128.5	185.0	195.6	182.2	190.2	207.4	251.3
<b>Total</b>	<b>2,216.2</b>	<b>2,136.7</b>	<b>1,980.7</b>	<b>2,010.2</b>	<b>2,010.3</b>	<b>2,169.5</b>	<b>2,229.6</b>

Note: Totals may not sum due to independent rounding.

**Table 3-73: Ethanol Consumption by Sector (Trillion Btu)**

End-Use Sector	1990	2005	2010	2011	2012	2013	2014
Transportation	60.4	327.4	1,041.4	1,045.0	1,044.6	1,071.6	1,092.8
Industrial	0.8	6.8	16.6	16.7	16.7	17.6	14.4
Commercial	0.5	0.9	3.3	2.9	2.6	2.7	4.1
<b>Total</b>	<b>61.7</b>	<b>335.1</b>	<b>1,061.2</b>	<b>1,064.6</b>	<b>1,063.8</b>	<b>1,091.8</b>	<b>1,111.3</b>

Note: Totals may not sum due to independent rounding.

## Uncertainty and Time-Series Consistency

It is assumed that the combustion efficiency for woody biomass is 100 percent, which is believed to be an overestimate of the efficiency of wood combustion processes in the United States. Decreasing the combustion efficiency would decrease emission estimates. Additionally, the heat content applied to the consumption of woody biomass in the residential, commercial, and electric power sectors is unlikely to be a completely accurate representation of the heat content for all the different types of woody biomass consumed within these sectors. Emission estimates from ethanol production are more certain than estimates from woody biomass consumption due to better activity data collection methods and uniform combustion techniques.

Methodological recalculations were applied to the entire time-series to ensure time-series consistency from 1990 through 2014. Details on the emission trends through time are described in more detail in the Methodology section, above.

## Recalculations Discussion

Wood consumption values for 2013 were revised relative to the previous Inventory based on updated information from EIA's *Monthly Energy Review* (EIA 2016). These revisions of historical data for wood biomass consumption resulted in an average annual increase in emissions from wood biomass consumption of 0.1 MMT CO<sub>2</sub> Eq. (less than 0.1 percent) from 1990 through 2013. Ethanol consumption values remained constant relative to the previous Inventory throughout the entire time-series.



## Planned Improvements

The availability of facility-level combustion emissions through EPA's Greenhouse Gas Reporting Program (GHGRP) will be examined to help better characterize the industrial sector's energy consumption in the United States, and further classify business establishments according to industrial economic activity type. Most methodologies used in EPA's GHGRP are consistent with IPCC, though for EPA's GHGRP, facilities collect detailed information specific to their operations according to detailed measurement standards, which may differ with the more aggregated data collected for the Inventory to estimate total, national U.S. emissions. In addition, and unlike the reporting requirements for this chapter under the UNFCCC reporting guidelines, some facility-level fuel combustion emissions reported under the GHGRP may also include industrial process emissions.<sup>86</sup> In line with UNFCCC reporting guidelines, fuel combustion emissions are included in this chapter, while process emissions are included in the Industrial Processes and Product Use chapter of this report. In examining data from EPA's GHGRP that would be useful to improve the emission estimates for the CO<sub>2</sub> from biomass combustion category, particular attention will also be made to ensure time series consistency, as the facility-level reporting data from EPA's GHGRP are not available for all inventory years as reported in this Inventory. Additionally, analyses will focus on aligning reported facility-level fuel types and IPCC fuel types per the national energy statistics, ensuring CO<sub>2</sub> emissions from biomass are separated in the facility-level reported data, and maintaining consistency with national energy statistics provided by EIA. In implementing improvements and integration of data from EPA's GHGRP, the latest guidance from the IPCC on the use of facility-level data in national inventories will be relied upon.<sup>87</sup>

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<sup>86</sup> See <<http://unfccc.int/resource/docs/2006/sbsta/eng/09.pdf>>.

<sup>87</sup> See <[http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1008\\_Model\\_and\\_Facility\\_Level\\_Data\\_Report.pdf](http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1008_Model_and_Facility_Level_Data_Report.pdf)>.

**From:** Memmott, Justin (Barrasso)  
**To:** [Moran, Jill \(jcmoran@blm.gov\)](mailto:jcmoran@blm.gov)  
**Subject:** FW: two more questions  
**Date:** Tuesday, April 26, 2016 3:57:16 PM

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Jill,

I'm just following up on these two questions.

I don't believe we ever got them answered.

Thanks.

Justin

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**From:** Memmott, Justin (Barrasso)  
**Sent:** Thursday, March 31, 2016 1:37 PM  
**To:** Moran, Jill (jcmoran@blm.gov)  
**Subject:** two more questions

Jill,

I have two more unrelated questions, but also in the oil and gas context.

- 1) Does BLM anticipate issuing an Instruction Memorandum related to bonding for mid-stream oil and gas pipelines on federal land? If so, when do you anticipate issuing that IM and can you send me a copy of it?
- 2) Has BLM issued a policy document related to new appraisals for non-linear oil and gas leases? (I'm hearing, second hand, from Wyoming BLM that BLM's D.C. headquarters has instructed it to reappraise non-linear oil and gas leases.) If so, can you share that policy document with me?

Thanks.

Justin J. Memmott  
Energy Policy Advisor  
U.S. Sen. John Barrasso M.D.  
(202) 224-0806

**From:** Morrison, Lisa  
**To:** [Bloom, Greg \(Tom Udall\)](#)  
**Subject:** Re: Pilot Office Report  
**Date:** Wednesday, April 27, 2016 11:39:22 AM

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Hi Greg. Just FYI that I sent an inquiry to our Washington DC folks. I will send you some info. once I hear back from them. Lisa

On Mon, Apr 25, 2016 at 11:42 AM, Bloom, Greg (Tom Udall)  
<[Greg\\_Bloom@tomudall.senate.gov](mailto:Greg_Bloom@tomudall.senate.gov)> wrote:

Hi Lisa,

I hope you had a nice weekend.

Can you please check and see if the pilot office report has been released? Oil and gas folks asked me for it back in February. They thought it was due 2/1/16. I'd like to be able to get it to them.

Thank,

Greg

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**From:** Allen, Beverly (Tom Udall)  
**Sent:** Thursday, March 17, 2016 9:40 AM  
**To:** 'Sheila Mallory' <[smallory@blm.gov](mailto:smallory@blm.gov)>; Michael Vermeys <[mvermeys@blm.gov](mailto:mvermeys@blm.gov)>; James Stovall <[jstovall@blm.gov](mailto:jstovall@blm.gov)>; Lisa Morrison <[lmorriso@blm.gov](mailto:lmorriso@blm.gov)>  
**Cc:** Bloom, Greg (Tom Udall) <[Greg\\_Bloom@tomudall.senate.gov](mailto:Greg_Bloom@tomudall.senate.gov)>  
**Subject:** RE: BLM-NMSO Lease and APD fee allocations

Hey Shelia,

- **I have included our new State Director-Greg Bloom on this follow up email. He needs to get back to a company on an ask that has to do with this bill.**

- Have you been able to find out any more about that report that was due last month and was part of the bill language? Let our office know if there is anything we can help with and our if you have the language and can share with us any other timelines we need to be in the loop on in case producers ask.
- Also, if we can get an update on the timeline with potential dates of the royalties and the permit class at NMJC that is greatly appreciated. I would like for the Senator to see the full circle at NMJC the next time I have him in SENM.

Thanks again for all your work on this!

Beverly Allen

SENM Field Representative

Office of United States Senator Tom Udall

102 W. Hagerman, Ste A, Carlsbad, NM, 88220

575-234-0366 (office)

575-640-5343 (cell)

[beverly\\_allen@tomudall.senate.gov](mailto:beverly_allen@tomudall.senate.gov)

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**From:** Sheila Mallory [<mailto:smallory@blm.gov>]

**Sent:** Thursday, March 03, 2016 2:47 PM

**To:** Michael Vermeys <[mvermeys@blm.gov](mailto:mvermeys@blm.gov)>; Allen, Beverly (Tom Udall)

<[Beverly\\_Allen@tomudall.senate.gov](mailto:Beverly_Allen@tomudall.senate.gov)>; James Stovall <[jstovall@blm.gov](mailto:jstovall@blm.gov)>; Lisa Morrison <[lmorriso@blm.gov](mailto:lmorriso@blm.gov)>

**Subject:** RE: BLM-NMSO Lease and APD fee allocations

Hi Beverly,

Also wanted to let you know that we have reached out to WO regarding the report but have been told there won't be any clear answer for a couple of days. As soon as I know I will let you know.

**From:** Vermeys, Michael [mailto:[mvermeys@blm.gov](mailto:mvermeys@blm.gov)]  
**Sent:** Wednesday, March 02, 2016 4:34 PM  
**To:** [beverly.allen@tomudall.senate.gov](mailto:beverly.allen@tomudall.senate.gov); Sheila Mallory; James Stovall; Lisa Morrison  
**Subject:** BLM-NMSO Lease and APD fee allocations

Hello Beverly,

Please consider the following information related to APD fees and O/G royalty revenues from leasing (L9141)

APD Fees:

The fee for a single ADP in FY16 (Oct 15-Sept 16) is \$9,500, however 15% is deposited into a PPIF account, 6.8% of that total is transferred to the US Treasury and 25% is available for further allocation.

$\$9,500 \times 15\%$  (deposited to PPI) = \$8,075

$\$8,705 \times 6.8\%$  (withheld by US Treasury) = \$7,525.90

$\$7,525.90 \times 25\%$  (available for further allocation) = \$5,644.43

Total retained by BLM NMSO for distribution = \$5,644.43

Pecos District, Carlsbad Field Office received 162 APD's @ \$5, 644.43/ea. = \$914,399.28

Farmington District (including Indian lands) received 27 APD's @ \$5, 644.43/ea.= \$152, 399.61

O/G royalty revenues from leasing (L9141)

Obligations to this account (L9141) must be planned to coincide with the total amount and timing of actual rental receipts. Sufficient funds must be maintained in the account to accommodate leave surcharge and other obligations incurred. This account is not subject to the standard Bureau indirect surcharge. Administrative costs, if properly authorized, should be direct charged.

The following breakdown displays the accounting treatment or royalty revenues from leasing for the Farmington and Pecos BLM Districts in FY16

Farmington	\$409, 413.53
Pecos (Carlsbad Field Office)	\$729, 853.61

Additionally, BLM NMSO personnel have been working with Robert Rhodes of NMJC on Partnering opportunities in order to enhance the Bureau's ability to process APDs more quickly and efficiently, accelerate the development and completion of master leasing plans in support of BLM's leasing reform efforts, and strengthen its inspection and oversight program. Partnering with NMJC allow's students and/or recent graduates the practical work experience in processing, permitting and management activities related to oil and gas development. NMSO personnel have spent 2 days interviewing several college candidates to possibly work for the Carlsbad Field Office on BLM projects. Proposed project work includes oil and gas permitting, resource survey/monitoring and GIS mapping/modeling. The Carlsbad Office has submitted several projects for review in hopes of receiving funds in order to hire current college students as seasonal interns.

Thank you for your time and consideration. Please feel free to reply or contact me with any further questions or concerns,

Sincerely,

Michael Vermeys

Acting Branch Chief - Minerals

New Mexico State Office

505.354.2144 desk

775.635.3933 cell

Assistant Field Manager

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BLM-NV-Battle Mt. District

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Lisa Rivera Morrison  
Deputy Chief  
Office of Communications  
Bureau of Land Management  
New Mexico State Office  
(505) 954-2023 work; (505) 920-6532 cell

**From:** Feldgus, Steve  
**To:** [Teitz, Alexandra](#)  
**Subject:** Communitization Agreements  
**Date:** Wednesday, April 27, 2016 1:58:55 PM

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Hey Alexandra,

I'm sure this is something that Tim can answer off the top of his head, but I went poking around the regs/handbooks anyway, and this is what I've noticed:

- 43 CFR 3161.1(b) directly addresses the question, but only for certain types of regulations. “Regulations in this part relating to site security, measurement, reporting of production and operations, and assessments or penalties for non-compliance with such requirements are applicable to all wells and facilities on State or privately-owned mineral lands committed to a unit or communitization agreement...”
- In the BLM handbook for communitization, at .11(Q), it states “All drilling and completion, certain reworking, and all abandonment operations on BLM supervised easements in approved communitization agreements must be approved in advance by the authorized officer. Such operations on non-BLM supervised lands need no BLM approval and should be accepted for the record only.”
- In Onshore Order #1, the scope is given as, “This Order applies to all onshore leases of Federal and Indian oil and gas... For proposed operations on a committed state or fee tract in a federally supervised unit or communitized tract, the operator must furnish a copy of the approved state permit to the authorized officer of the BLM which will be accepted for record purposes.”
- The preamble for Onshore Order #1 reads: “One commenter did not think it appropriate for the Order to apply to operations within a unit or communitized area on private minerals or private surface. We agree. While the site security, measurement, and production reporting regulations apply to unitized wells drilled on private minerals (43 CFR 3161.1), it is not appropriate for the BLM or the FS to exercise authority over surface operations conducted on privately owned lands just because those lands are contained within a unit or communitized area. The BLM only requires a copy of the permit to be provided for non-Federal wells within a unit or communitized area and wording in the “Scope” section of the Order is revised to make this clear.”
- The scope for Onshore Order 2 says, “This Order is applicable to all onshore Federal and Indian (except Osage Tribe) oil and gas leases.” Onshore Orders 3, 4, and 5 all have that, then add, “In addition, this Order is applicable to all wells and facilities on State or privately-owned mineral lands committed to a unit or communitization agreement that affects Federal or Indian interests, notwithstanding any provision of a unit or communitization agreement to the contrary.”

There's some case law on this as well, but as far as I can tell it only addresses the BLM's authority



under its regulations, not under the MLA. There appears to be no question that royalty-related provisions apply on all lands within a CA, but as of right now, operational requirements appear to not. This seems to straddle both. But if the question about the scope is determined by what's in BLM's regulations, then since you're going through the rulemaking process right now it seems like you'd be able to make it apply to whatever appears in the final rule.

I know you can't give me a definitive answer, but does Tim or SOL have any knowledge about the existing state of play, and whether there's more relevant case law that I haven't found? Or can you at least say that if it ends up in the final regulation, it's by definition within the scope of BLM's authority? (Since then you wouldn't be making any predecisions about what the final scope is.)

Hope this all makes sense!

Thanks,

--Steve

**From:** Ventura, Diane (Heinrich)  
**To:** [MacDonell, George](#)  
**Subject:** RE: Question  
**Date:** Wednesday, April 27, 2016 2:32:31 PM

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George,

Thanks for the info. I was talking our Legislative Assistant in our DC office about this. She said that BLM has a royalty relief authority where they can lower a royalty rate to ensure full recovery of the mineral (so, keeping a marginal well operating so the operator doesn't leave the last 10% of the mineral underground), but that it is pretty rare that its used. I can't imagine that it would apply to most of Chevron's wells anyway. We thought that maybe on BLM land private leases could be negotiated bonus bids and rental payments, but not royalties? We think this is non-standard.

Diane

**Diane Ventura**  
Field Representative | Office of U.S. Senator Martin Heinrich of New Mexico

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CONNECT: [@MartinHeinrich](#) | [fb.com/MartinHeinrich](https://www.facebook.com/MartinHeinrich)

**From:** MacDonell, George [mailto:[gmacdone@blm.gov](mailto:gmacdone@blm.gov)]

**Sent:** Wednesday, April 27, 2016 11:14 AM

**To:** Ventura, Diane (Heinrich)

**Subject:** Re: Question

Hi Diane,

It could be a higher percentage of private lands/minerals. Was this is reference to flared gas? If so, it could be that there is more infrastructure in the Permian Basin than there is in other parts of the country.

George

On Wed, Apr 27, 2016 at 10:03 AM, Ventura, Diane (Heinrich)

<[Diane\\_Ventura@heinrich.senate.gov](mailto:Diane_Ventura@heinrich.senate.gov)> wrote:

Hi George,

Why do you think Chevron pays less royalties in the Permian Basin? Could it be private lands?

Just curious...

Thanks,

Diane

Sent from my BlackBerry 10 smartphone on the Verizon Wireless 4G LTE network.

--

George MacDonell  
Field Office Manager  
620 E. Greene St.  
Carlsbad, NM 88220  
(575) 234-5901 desk  
(575) 420-0400 cell

outreach, research, and restoration are critical elements for effective management of invasive species. To prevent and control the various invasive species that impact BLM lands, the BLM partners with state and local government agencies, tribes, and the private sector. An example of this coordinated approach is through engagement with Cooperative Weed Management Areas (CWMAs). CWMAs help interested parties coordinate efforts and share expertise for managing invasive species in a defined area. By addressing invasive species in this manner, the BLM is able to leverage limited resources to counter the impacts of invasive species across the landscape.

The BLM played a key leadership role in the development of the first National Seed Strategy for Rehabilitation and Restoration that was announced in August 2015. This strategy was developed in coordination with the Plant Conservation Alliance, the Chicago Botanic Garden, fellow DOI bureaus, the U.S. Department of Agriculture, western states, and many other partner organizations. The primary goal of the strategy is to ensure that the right seed gets to the right place at the right time to more effectively restore viable and productive plant communities and sustainable ecosystems. The strategy will also guide ecological restoration efforts and make treated lands more resistant to fire, invasive species, and drought.

The BLM is implementing many projects on public lands across the west to combat the spread of invasive species. For example, in Colorado, the BLM has worked with The Nature Conservancy, the San Miguel County Weed Board, and other interested stakeholders since 2001 to remove over 30 miles of salt cedar and restore native vegetation along the San Miguel River. In 2005, the BLM launched the “Restore New Mexico” initiative to restore disturbed lands on a landscape scale. Through that effort, the BLM has worked with state and local partners to restore over 3 million acres of land across New Mexico that had been degraded by invasive species and woodland encroachment. In Oregon, the BLM has worked with volunteers and the U.S. Forest Service to reduce the acreage infested by nine species of noxious weeds along the Rogue River by 90 percent. Projects like these result in significant benefits, including more desirable recreating conditions; healthier habitat for native plants, fish and wildlife; decreased infestation on both private and public land downstream; and education opportunities with adjacent landowners and outdoor recreationists to address larger-scale invasive plant control efforts.

Further, as part of Secretary Jewell’s January 2015 Secretarial Order on Rangeland Fire Prevention, Management, and Restoration, the BLM is using innovative biopesticides to test control of cheatgrass, medusahead rye, and jointed goatgrass on 33 research plots (ranging from 11-50 acres each) located in 7 states. The BLM is working in partnership with the U.S. Geological Survey and the U.S. Fish and Wildlife Service to evaluate the results of these treatments this fall. Depending on whether these treatments are successful, the BLM may expand this type of approach to additional states.

### **Early Detection and Rapid Response**

Preventing the introduction of invasive species is the first line of defense against biological invasion. However, for invasive species that circumvent prevention systems, early detection and rapid response (EDRR) – a coordinated set of actions to find and eradicate potential invasive species before they spread and cause harm – can help stop the next invasive species from becoming established and spreading.

The White House Council on Climate Preparedness and Resilience recognized the impact that invasive species have on ecosystem resilience and identified EDRR as a priority in its October 2014 “Priority Agenda: Enhancing the Climate Resilience of America’s Natural Resources.” The report called upon the U.S. Department of the Interior, working with other members of the National Invasive Species Council (NISC) – an interdepartmental body created by Executive Order 13112 – states, and tribes to develop a national EDRR framework designed to identify and find invasive species populations while they are still localized and eliminate them before they become widely established and cause significant harm.

In response, the Department of the Interior played a leadership role together with the NISC Secretariat to facilitate the development of the interdepartmental report, “Safeguarding America’s Lands and Waters from Invasive Species: A National Framework for Early Detection and Rapid Response” (EDRR Framework), which the Department of the Interior released in February. NISC members’ departments and agencies assisted in the report’s development, including the U.S. Department of Agriculture, Department of Commerce, the Environmental Protection Agency, State Department, and Department of Defense. The process also engaged multiple and diverse stakeholders from state and tribal governments, academic institutions, and conservation organizations, among others.

The EDRR Framework proposes an organizational structure and guidance to better enable coordination and communication among federal and non-federal entities, ultimately to increase the overall effectiveness of EDRR efforts at all levels. The report contains a series of recommendations on initial high-level actions addressing coordination mechanisms, funding, partnerships, scientific and technical EDRR approaches, and pilot projects. The NISC Secretariat is in the process of charting out immediate next steps and identifying the human and financial resources available to take them. In addition, the President’s FY 2017 budget includes \$1.5 million for the Department of the Interior to begin implementation of the EDRR Framework, which would strengthen EDRR capacities.

#### **Department Comments on S. 2240**

As indicated at the beginning of this statement, while the Department supports the goals of this legislation to support federal efforts to address invasive species across public lands and waters in coordination and cooperation with states, tribes, and other non-federal partners, we have identified areas in the bill where additional clarity and further discussion with the sponsor and subcommittee would be helpful.

Section 4(b) would require the Department and the U.S. Forest Service to develop plans to achieve, to the maximum extent practicable, an annual five percent net reduction of invasive species populations on Interior and Forest Service managed lands. The Department agrees that setting metrics for control is important but those metrics will vary across species, their populations, ecosystems, and time. They are also informed by knowledge of baseline distributions. We would like to work with the sponsors on language to maintain administrative flexibility to allow agencies to prioritize actions to address the most harmful species and adapt to new challenges on the lands they manage.

We also note that the bill requires a number of additional plans, analyses, reports, and agreements which would be administratively burdensome to carry out and, in some cases, redundant in light of a number of existing cooperative agreements, contracts, and other arrangements we have made with our partners. We look forward to working with the sponsor and the subcommittee to identify those areas where there may be redundancies to ensure that ongoing work can be carried out most efficiently.

Section 5 of the bill establishes program funding allocations for control and management activities, investigations, outreach and public awareness, and administrative costs. The Administration does not support establishing fixed funding percentages into law which would reduce the land management agencies' discretion and flexibility to most effectively and efficiently allocate resources to address evolving challenges posed by invasive species. Because the most cost effective and efficient approach to managing invasive species is to prevent their establishment in the first place, we are particularly concerned that this section, as drafted, would limit the existing ability of land management agencies to adaptively manage invasive species control efforts while also meeting prevention, research, restoration, and partnership goals. Similarly, prevention, early detection, and control efforts for invasive species are informed, improved, and made more efficient through applied research, and we are likewise concerned that this section, as drafted, would limit the existing ability of land management and research agencies to conduct research to meet management goals.

Finally, the Department is also concerned that the environmental, cultural, and other impacts of invasive species control activities would not be adequately considered given the bill's broad categorical exclusion for many invasive species control efforts from environmental analysis under the National Environmental Policy Act (NEPA). The Department does not support such an expansive categorical exclusion, which would both eliminate an important opportunity for public involvement in land management decisions and ignore existing regulatory authority to conduct programmatic NEPA reviews.

### **Conclusion**

The Department appreciates that S. 2240 provides additional recognition of the importance of controlling invasive species on federal lands managed by its bureaus. We look forward to working with Congress to more successfully fight the spread of invasive species and maintain healthy landscapes. Mr. Chairman, thank you for the opportunity to testify on our efforts to combat the spread of invasive species and provide our views on the bill. I would be happy to answer any questions.

**From:** Teitz, Alexandra  
**To:** [Feldgus, Steve](mailto:Steve.Feldgus@blm.gov)  
**Subject:** Re: Communitization Agreements  
**Date:** Wednesday, April 27, 2016 3:51:27 PM

---

Thanks Steve. I know we were looking at this question and discussing with SOL, but it was still in progress. Let me get more information and get back to you. What's your timeframe on this?  
Alexandra

Alexandra Teitz  
Counselor to the Director  
Bureau of Land Management  
202-208-3027

On Wed, Apr 27, 2016 at 1:58 PM, Feldgus, Steve <[Steve.Feldgus@mail.house.gov](mailto:Steve.Feldgus@mail.house.gov)> wrote:

Hey Alexandra,

I'm sure this is something that Tim can answer off the top of his head, but I went poking around the regs/handbooks anyway, and this is what I've noticed:

➤ 43 CFR 3161.1(b) directly addresses the question, but only for certain types of regulations. “Regulations in this part relating to site security, measurement, reporting of production and operations, and assessments or penalties for non-compliance with such requirements are applicable to all wells and facilities on State or privately-owned mineral lands committed to a unit or communitization agreement...”

➤ In the BLM handbook for communitization, at .11(Q), it states “All drilling and completion, certain reworking, and all abandonment operations on BLM supervised leases in approved communitization agreements must be approved in advance by the authorized officer. Such operations on non-BLM supervised lands need no BLM approval and should be accepted for the record only.”

➤ In Onshore Order #1, the scope is given as, “This Order applies to all onshore leases of Federal and Indian oil and gas... For proposed operations on a committed state or fee tract in a federally supervised unit or communitized tract, the operator must furnish a copy of the approved state permit to the authorized officer of the BLM which will be accepted for record purposes.”

➤ The preamble for Onshore Order #1 reads: “One commenter did not think it appropriate for the Order to apply to operations within a unit or communitized area on private minerals or private surface. We agree. While the site security, measurement, and production reporting

regulations apply to unitized wells drilled on private minerals (43 CFR 3161.1), it is not appropriate for the BLM or the FS to exercise authority over surface operations conducted on privately owned lands just because those lands are contained within a unit or communitized area. The BLM only requires a copy of the permit to be provided for non-Federal wells within a unit or communitized area and wording in the “Scope” section of the Order is revised to make this clear.”

➤ The scope for Onshore Order 2 says, “This Order is applicable to all onshore Federal and Indian (except Osage Tribe) oil and gas leases.” Onshore Orders 3, 4, and 5 all have that, then add, “In addition, this Order is applicable to all wells and facilities on State or privately-owned mineral lands committed to a unit or communitization agreement that affects Federal or Indian interests, notwithstanding any provision of a unit or communitization agreement to the contrary.”

There’s some case law on this as well, but as far as I can tell it only addresses the BLM’s authority under its regulations, not under the MLA. There appears to be no question that royalty-related provisions apply on all lands within a CA, but as of right now, operational requirements appear to not. This seems to straddle both. But if the question about the scope is determined by what’s in BLM’s regulations, then since you’re going through the rulemaking process right now it seems like you’d be able to make it apply to whatever appears in the final rule.

I know you can’t give me a definitive answer, but does Tim or SOL have any knowledge about the existing state of play, and whether there’s more relevant case law that I haven’t found? Or can you at least say that if it ends up in the final regulation, it’s by definition within the scope of BLM’s authority? (Since then you wouldn’t be making any predecisions about what the final scope is.)

Hope this all makes sense!

Thanks,

--Steve



**From:** Feldgus, Steve  
**To:** ["Teitz, Alexandra"](#)  
**Subject:** RE: Communitization Agreements  
**Date:** Wednesday, April 27, 2016 3:52:36 PM

---

Lowenthal was interested, so it would be good to get him something fairly shortly if possible – maybe the end of this week?

Thanks,

--Steve

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**To:** [Feldgus, Steve](mailto:Steve.Feldgus@mail.house.gov)  
**Subject:** Re: Communitization Agreements  
**Date:** Wednesday, April 27, 2016 3:53:54 PM

---

OK, thanks -- I'll see if there's a relatively quick answer to be had.

Alexandra Teitz  
Counselor to the Director  
Bureau of Land Management  
202-208-3027

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**From:** Ralston, Jill  
**To:** [aniela.butler@mail.house.gov](mailto:aniela.butler@mail.house.gov)  
**Cc:** [erica.rhoad@mail.house.gov](mailto:erica.rhoad@mail.house.gov); [spencer.kimball@mail.house.gov](mailto:spencer.kimball@mail.house.gov); [Bragato, Brandon](#); [david.watkins@mail.house.gov](mailto:david.watkins@mail.house.gov); [Patrick Wilkinson](#); [Andrea Nelson](#)  
**Subject:** BLM Testimony for H.R.\_\_\_\_, LOCAL Management Act Legislative Hearing (4/28)  
**Date:** Wednesday, April 27, 2016 5:04:56 PM  
**Attachments:** [Disclosure Form Mouritsen 042816.doc](#)  
[BLM testimony HR LOCAL Act \(FINAL\).docx](#)

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All --

Attached is the BLM's testimony for the April 28 Legislative Hearing on Discussion Draft of " Locally-elected Officials Cooperating with Agencies in Land Management Act" (LOCAL Mangement Act). Also attached is the completed disclosure form.

Thank you,  
Jill Ralston  
U.S. Department of the Interior  
Bureau of Land Management  
Legislative Affairs Division (WO 620)  
Phone: (202) 912-7173  
Cell: (202) 577-4299

**COMMITTEE ON NATURAL RESOURCES**  
**114<sup>th</sup> Congress Disclosure Form**  
**As required by and provided for in House Rule XI, clause 2(g)(5)**

*Legislative hearing on a discussion draft of the “Locally-elected Officials Cooperating with Agencies in Land Management Act” (LOCAL Management Act) on April 28, 2016*

**For Individuals:**

Name: Karen Mouritsen, Deputy Assistant Director, Energy, Minerals, and Realty Management, Bureau of Land Management

Address: Contact Patrick Wilkinson, 1849 C Street NW Room 5665, Washington DC

Email Address: Contact Patrick Wilkinson, p2wilkin@blm.gov

Phone Number: Contact Patrick Wilkinson, (202) 912-7429

\* \* \* \* \*

**For Witnesses Representing Organizations:**

Name:

Name of Organization(s) You are Representing at the Hearing:

Business Address:

Business Email Address:

Business Phone Number:

\* \* \* \* \*

**For Nongovernment Witnesses ONLY:**

1. Please attach/include current curriculum vitae or resume.
  
2. Please list any federal grants or contracts (including subgrants or subcontracts) related to the subject matter of the hearing that were received in the current year and previous two calendar years by you or the organization(s) you represent at this hearing, including the source and amount of each grant or contract.
  
  
  
  
  
  
  
  
  
  
3. Please list any contracts or payments originating with a foreign government related to the subject matter of the hearing that were received in the current year and previous two calendar years by you or the organization(s) you represent at this hearing, including the amount and country of origin of each contract or payment.

**Karen Mouritsen  
Deputy Assistant Director  
Energy, Minerals, and Realty Management  
Bureau of Land Management  
Department of the Interior  
House Natural Resources Committee  
Subcommittee on Public Lands**

**H.R. \_\_\_\_\_, “Locally-Elected Officials Cooperating with Agencies in Land Management Act”  
April 28, 2016**

Thank you for inviting the Department of the Interior to testify on the discussion draft of the “*Locally-Elected Officials Cooperating with Agencies in Land Management Act*.” This bill prescribes various coordination and collaboration requirements for Federal agencies in their interactions with local communities and Tribes, and includes various other disparate provisions.

The Bureau of Land Management (BLM) works closely with states, Tribes, and local communities to implement its multiple-use and sustained yield mission. The relationships we build with local communities are critical to our ability to successfully manage the vast and often fragmented public lands and the diverse uses they host. BLM employees are proud members of these communities. Frequent communication and close collaboration are hallmarks of our work across the west. By working closely with our state, local, Tribal, and Federal government partners, we improve communication and understanding, identify common goals and objectives, and enhance the quality of our management of the public lands. Consistent with this approach, the Department supports the goals of the discussion draft to enhance coordination and collaboration with local communities and Tribes. However, as drafted, the Department cannot support several provisions of the draft bill that we believe will make it more difficult for the agency to work constructively with local elected officials and our many partners in cooperatively managing the public lands. The Department further finds other provisions of the draft bill to be duplicative of existing processes and therefore unnecessary. The Department would appreciate the opportunity to work with the sponsor and the committee on this legislation.

The Department strongly prefers to testify on bills after they have been introduced. Additionally, we note that this version of the draft bill was provided to the Department just eight days before the hearing date, leaving little time for in depth analysis of the draft bill’s provisions. We are providing preliminary views on the discussion draft, but the Department would like to reserve the right to submit additional comments about this discussion draft or on an introduced bill to more fully develop the Administration’s position as necessary. (The Department defers to the U.S. Forest Service on the bill’s provisions that apply exclusively to the management of National Forest System lands.)

**Background**

The BLM manages over 245 million acres of surface land and 700 million acres of subsurface mineral estate on behalf of the American people. BLM provides robust opportunities for the public to be part of managing these incredible landscapes. In addition to land use planning, the BLM is committed to providing the full environmental review and public involvement



opportunities required by the National Environmental Policy Act (NEPA) and other federal laws for all agency proposals for BLM-managed lands.

Managing the public lands is a tremendous honor for the employees of the BLM, and our work depends on close cooperative relationships with partners and local communities. The Federal Land Policy and Management Act (FLPMA) sets forth BLM's multiple-use, sustained yield mission, , and mandates that the agency manage public land resources for a variety of uses, such as energy development, livestock grazing, recreation, and timber harvesting, while protecting a wide array of natural, cultural, and historical resources. To ensure the best balance of uses and resource protections for America's public lands, BLM undertakes extensive land use planning through a collaborative approach with local, state and tribal governments, the public, and stakeholder groups. State and field offices are required to engage their state, local, and tribal government partners consistently and effectively in the preparation or revision of land use plans. These land use plans provide the framework to guide decisions for every action and approved use on BLM-managed lands.

The BLM utilizes Resource Advisory Councils (RACs) in the western States within BLM jurisdiction to provide advice to the agency on the full spectrum of issues in management of public lands and resources. FLPMA gives BLM the authority to establish Federal advisory committees of not less than ten and not more than fifteen members who are representative of major citizens' interests concerning public land use. The RACs have been very successful in bringing diverse and often competing interests together to deal with issues of mutual concern as well as provide oversight of millions of dollars of restoration work and infrastructure improvement to roads and recreational facilities.

The BLM is revising its planning rule as part of the agency's Planning 2.0 initiative, which seeks to make future land-use planning even more collaborative, transparent, and effective. The changes to the planning rule aim to increase opportunities for early engagement by state and local government, Tribes, and other stakeholders in BLM's land-use decision-making, including measures to provide more meaningful participation. Our goal is to make it easier for people to see how their input influences planning decisions. The revised rule also seeks to adopt a broader landscape-scale, science-based approach to managing public lands, and incorporate modern technology into the agency's planning process. The changes to the planning rule will improve our ability to respond to changing environmental, economic and social conditions. The revision recognizes the need to have strong science, early and regular public input, and a landscape-level approach to natural resource management challenges and opportunities.

#### **H. R. \_\_\_\_\_, “*Locally-Elected Officials Cooperating with Agencies in Land Management Act*”**

Due to the varied nature of the provisions in this discussion draft, this statement will address each of the bill's provisions individually.

## **Title I**

Section 101 requires BLM to enter into an agreement, at the request of the local community, to attend local business meetings for the purposes of reporting ongoing or proposed federal activities and responding to public concerns. As BLM line officers already routinely attend local community meetings to share information about agency activities, we do not believe that a statutory requirement is necessary or conducive to building strong working relationships between land managers and local elected officials.

Section 102 requires that the Secretary extend Cooperating Agency status to the governing body of any affected local community for any forest management, travel management, or other major action. BLM's regulations require the agency to coordinate and cooperate on any project that would affect the local environment under NEPA. In accordance with existing statute, BLM's coordination responsibilities include maximizing consistency with plans of other government entities and providing meaningful public involvement of other Federal, state, local, and Tribal government officials in the development of public land use decisions. One of the most effective ways we coordinate is through granting governmental partners Cooperating Agency status, which affords them a seat at the table as we work together on land use plans and projects. Counties affected by a proposal are already offered Cooperating Agency status, and many choose not to be Cooperating Agencies. Our regulations require coordination even when a formal Cooperating Agency relationship has not been established. For these reasons, we believe this additional statutory requirement to be unnecessary.

Section 103 of the discussion draft makes three key changes to the Resource Advisory Committees established by the Secure Rural Schools Act in the Oregon and California Railroad Grant (O&C) counties. It changes the duties of these RACs from proposing projects to serving as the primary advisory body for the Secretary on forest management (in the O&C and Coos Bay Wagon Road lands for the BLM); reduces through calendar year 2020 the number of members on each RAC from 15 to 9; and requires RAC members to live in the county (or adjacent county) to the federal lands.

The BLM has concerns with each of these changes. First, the draft does not specify what it expects the RAC to accomplish in its role of "primary advisory body" on forest management. Under current law, these RACs recommend restoration projects; this function informs the BLM's managers as they evaluate projects. Also, the current statutory composition of RACs has three categories of community interests represented, with each category having 5 subcategories of interests represented. Reducing the number of RAC members from 15 to 9, while maintaining 3 interests to be represented in each of the three categories, raises the question of which 6 of the 15 interests will be eliminated from representation on the RAC. Finally, current law allows RAC members to be from anywhere in the state. Limiting eligibility for RAC membership to residents of only the county (or adjacent county) in which federal lands are located may make it difficult to provide the necessary composition of a RAC and may exclude important sources of expertise sought by the RAC or the BLM. Finally, the draft bill includes an unrealistic requirement of 90-days for the approval of vacant positions on the RAC.

Section 104, relating to federal acquisition of non-federal lands, would require the Secretary to conduct a study to evaluate the economic impacts of the land acquisition to local communities, as

well as the potential impacts of lost property tax. Under the bill, acquisition of non-federal lands would also require consultation with the local governing body of each affected local community, and a request for a written statement of the position of the governing body on the land acquisition to accompany the project submittal list to Congress. The discussion draft specifies that the Secretary shall give considerable deference to the position of the local governing body for decisions regarding the acquisition of non-federal lands. BLM regulations already require that federal land acquisitions be consistent with BLM's land use plan for the area and be subject to site specific NEPA analysis. The economic impacts to local communities are already among the issues BLM addresses in NEPA analyses for land acquisitions. The BLM believes the additional requirements for studies outside of the NEPA process would duplicate existing efforts and would slow the processing of transactions with willing sellers.

Section 107 requires fee collecting bureaus to notify and solicit comment from the affected local governments for the proposed establishment or increase of a recreation site fee. The draft bill also requires that the Secretary submit to Congress all local government comments received regarding the recreation site fee. Under existing law (the Federal Lands Recreation Enhancement Act), the BLM, the National Park Service (NPS) and Fish and Wildlife Service (FWS) have developed robust civic engagement processes that ensure the public, as well as local governments, have the opportunity to participate in proposed recreation fee rates. The Department believes the draft bill's requirement in Section 107 would be redundant and unnecessarily burdensome, and therefore opposes it.

## **Title II**

Section 201 amends FLPMA to specify the minimum duration of all BLM District office positions to be three years and would require the Secretary to promulgate a rulemaking to enumerate exceptions to that standard. The BLM agrees that stable line leadership is important to effective land management. However, the efficient delivery of government services demands employment policies that promote more nimble and efficient use of scarce employee skills and resources. The BLM assigns personnel based on the employee skills and competencies best suited to meet the program and operational needs of the office. The provision in the discussion draft would hinder the BLM's capacity to deliver mission critical programs and services, potentially including firefighting and emergency response, oil and gas permitting, rangeland management, and recreation planning and visitor services. The BLM opposes this provision.

Section 202 amends the Healthy Forests Restoration Act to require a schedule of implementation for Community Wildfire Protection Plans (CWPPs). CWPPs are an opportunity for local communities to influence where and how federal agencies implement fuel reduction projects on federal lands. The BLM already consults with local, state, and tribal government representatives during the development of CWPPs. The BLM has no objection to this provision.

Section 203 limits NPS ability to accept donations from willing land owners of certain tracts of land immediately adjacent to parks. This change could adversely affect parks by slowing down or stopping a donation which could cause the land owner instead to sell the land. Having flexibility to quickly accept donations along park borders, where local managers have identified a need, allows the NPS to take advantage of opportunities to better protect existing park resources before those opportunities are lost. The NPS opposes this provision.

Section 204 requires that the Secretary take all necessary and reasonable actions to protect and maintain survey monuments located on Federal land from surface disturbing activities. The BLM recognizes the importance of protecting survey monuments and has no objection to this provision.

### **Title III**

Section 301 amends the Tribal Forest Protection Act (TFPA) to establish required time-frames for BLM consideration of, and response to, tribally-proposed projects on BLM-managed land bordering or adjacent to Indian trust land. The purpose of the TFPA is to protect the Indian trust resources from fire, disease, or other threat from the BLM land. The BLM has not experienced a backlog of TFPA requests since enactment in 2004 and does not see the need for the required time-frames.

Section 302 of the discussion draft amends the National Indian Forest Resources Management Act to authorize the Secretary to treat certain Federal forest land as Indian forest land for purposes of planning and conducting forest management activities. Section 302 would apply to all BLM managed forest lands, including O&C and Coos Bay Wagon Road. Also, Section 302 authorizes a 3-party revenue-sharing among a Tribe, the Secretary, and state and county governments of receipts derived from forest management activities on those O&C lands that are managed as Indian forests. The Department notes that the revenue-sharing provision would likely result in a reduction in revenues to the U.S. Treasury, but is reviewing this provision further.

### **Title IV**

Section 401 establishes allotted amounts of funds from the Land and Water Conservation Fund (LWCF) to be used for enhancing public access, describes adjacency requirements and geographic limitations for acquisition of land. Specifically, this provision requires that not less than 33 percent of LWCF amounts may be allotted for the purpose of securing or enhancing public access on existing Federal lands for hunting, recreational fishing, or recreational shooting in any fiscal year. In addition, this section requires that any parcel of land or water to be acquired through the LWCF must abut Federal land on 75 percent or greater of the parcel's border. Finally, this section requires that no more than 15 percent of the acreage acquired through LWCF in any fiscal year can be located west of the 100<sup>th</sup> meridian.

The LWCF is the federal program to conserve irreplaceable lands and improve outdoor recreation opportunities throughout the nation. The LWCF program is a critical conservation tool. Each year, the FWS, BLM, and NPS acquire land from willing sellers in fee title or conservation easement through the LWCF. The acquired lands provide improved habitat for wildlife, and often enhance resource management capability. Fee title acquisitions generate economic benefits for local communities and provide the public with opportunities to hunt, fish, observe and photograph wildlife, and enjoy environmental education and interpretation. This program is regarded as one of the most successful public outdoor recreation and conservation investments in the nation's history. The restrictions prescribed in Title IV would place unnecessary and unduly burdensome restrictions on this extremely beneficial program, including

the effective elimination of the ability of the U.S. Fish and Wildlife Service to create new refuges. As such, the Department strongly opposes this section.

**Conclusion**

Thank you for the opportunity to present this testimony.

**From:** Jacobsen, Mark  
**To:** [Brenda Rettinger](#); [Branden Bestgen](#); [bruce bowman](#); [Debra Brown](#); [Drew Combs](#); [Gary Colbath](#); [Jay Volk](#); [John Kain](#); [Kevin Forrester](#); [Ray Gilbert](#); [Robert Johnson](#); [Ronald Waterland](#); [Ryan Brunner](#); [Vern Bleich](#); [Vern Timmerman](#); [Diane Friez](#); [Irma Nansel](#); [Lori \(Chip\) Kimball](#); [Allen Ollila](#); [Cameron, Jon \(Hoeven\)](#); [Shirley Meyer](#); [sarah\\_jennings@heilkamp.senate.gov](#); [kay\\_morast@heilkamp.senate.gov](#); [kstults@thedickinsonpress.com](#); [Mark Albers](#); [Kimberly Borbely](#)  
**Subject:** Please Read!! --DAKOTAS RAC Meeting TOMORROW  
**Date:** Wednesday, April 27, 2016 5:56:59 PM  
**Attachments:** [28 April 2016--DAK RAC Agenda.docx](#)  
[Coal Reform Fact Sheet Final.pdf](#)  
[FINAL\\_SO\\_3338 Coal.pdf](#)  
[Questions and Answers Coal.pdf](#)

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By now, you should have gotten the invitation to the conference call RAC meeting tomorrow. This email has agenda related materials for your information (Part 1).

Any questions? Just call.

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# ***Dakotas Resource Advisory Council Meeting***

**April 28, 2016**

**Bowman City Offices, 101 1<sup>st</sup> St. NE, Bowman, N.D.**

<b>Time</b>	<b>Topic</b>	<b>Presenter</b>	<b>Expected Outcome</b>
9:00 - 9:10	Welcome, ground rules & agenda, introductions	Mark Jacobsen	Pre-meeting orientation. RAC, BLM, USFS, Public – introductions.
9:10 – 9:30	Election of 2016 Chairs	All	Election of the 2016 Chair positions
9:30 – 10:30	Am. Prairie Res. update	Mark Albers (BLM)	Teleconference: Update on APR grazing application & BLM decision.
10:30-10:45	Break	All	
10:45-11:00	Coal Program Update	Irma Nansel	Update on recent Secretarial Order & NDFO coal projects.
11:00 – 12:00	Public Comment Period	Public	If no public comment, advance agenda.
12:00 – 1:30	LUNCH	All	Local establishments.
1:30 – 2:30	Ft. Meade Cavalry Trail/Weeds projects	Kevin Forrester	Update on recreation trails and weed projects for 2016
2:30 – 2:45	BREAK	All	
2:45 – 3:15	Wharf Mine & BLM holdings	Ron Waterland/SDFO staff	Discuss isolated BLM holdings within the Wharf Mine, give background and possible outcomes.
3:15 – 4:00	Individual RAC member updates	Council members.	RAC members convey constituent views and relevant issues to BLM managers.
4:00– 4:15	EMDD Update	Diane Friez	District notable events and updates.
4:15 – 4:30	NDFO Update	Loren Wickstrom	FO notable events and updates.
4:30 – 4:45	SDFO Update	Chip Kimball	FO notable events and updates.
4:45 – 5:00	Tabled Items, meeting dates, agenda	All	Follow-up on tabled items; set next meeting.
5:00	Adjourn		

**FACT SHEET: MODERNIZING THE FEDERAL COAL PROGRAM**

*Rather than subsidize the past, we should invest in the future -- especially in communities that rely on fossil fuels. That's why I'm going to push to change the way we manage our oil and coal resources, so that they better reflect the costs they impose on taxpayers and our planet.*

*-President Obama, 2016 State of the Union*

Coal has been an important domestic energy source for decades and that will continue in the years ahead. The federal government plays a major role in facilitating and regulating U.S. coal production; taxpayer-owned federal lands supply roughly 40 percent of all U.S. coal production.

The federal government has a responsibility to all Americans to ensure that the coal resources it manages are administered in a responsible way to help meet our energy needs and that taxpayers receive a fair return for the sale of these public resources. And yet, over the past few years, it has become clear that many of the decades-old regulations and procedures that govern the federal coal program are outdated and may not reflect the realities of today's economy or current understanding of environmental and public health impacts from coal production.

In March 2015, Secretary of the Interior Sally Jewell called for an “open and honest conversation about modernizing the federal coal program,” and she launched a series of listening sessions across the country to hear from the public on complex questions, including: Are taxpayers and local communities getting a fair return from these resources? How can we make coal leasing more transparent and more competitive? How do we manage the program in a way that is consistent with our climate change objectives?

As a direct result of these public listening sessions – as well as concerns raised by the Government Accountability Office, the Interior Department's Inspector General, and Members of Congress – Secretary Jewell is taking the next step in the conversation by launching a formal, comprehensive review of the federal coal program. While the review is underway, consistent with practices during previous programmatic reviews of the federal coal program, Secretary Jewell has ordered a pause on significant new coal leasing decisions on public lands so that those decisions and leases will have the benefit of the comprehensive review.

**COMPREHENSIVE FEDERAL COAL PROGRAM REVIEW**

The Interior Department will prepare a Programmatic Environmental Impact Statement (PEIS) consistent with the National Environmental Policy Act (NEPA) that will identify and evaluate potential reforms to the federal coal program.

A programmatic review of the coal program has not been undertaken in more than 30 years. In 1983 and 1984, Congress established a commission to investigate fair market value policies for coal leasing and required a study of whether the coal leasing program was compatible with national environmental protection goals. The Interior Department followed these reports with a supplemental PEIS on the federal coal program, completed in 1986. Previously, in 1973, President Nixon's Interior Department launched a PEIS in response to serious concerns about speculation in the coal leasing program, which was completed in 1979. Both programmatic reviews were accompanied by similar pauses in new coal leasing decisions.



This review will take a careful look at issues related to the Bureau of Land Management's (BLM) administration of the federal coal program, primarily:

- The appropriate leasing mechanisms to determine how, when and where to lease;
- How to account for the environmental and public health impacts of the coal program; and
- How to ensure the sale of these public resources results in a fair return to the American taxpayers, including whether current royalty rates should be adjusted.

The review will also explore whether U.S. coal exports should factor into leasing or other program decisions; how the management, availability and pricing of federal coal impacts domestic and foreign markets and energy portfolios; and the role of federal coal in fulfilling the energy needs of the United States.

The review will include extensive opportunities for public participation. The PEIS will kick off with public sessions in early 2016 to help determine the precise scope of the review. The Interior Department will release an interim report by the end of 2016 with conclusions from the scoping process about alternatives that will be evaluated and, as appropriate, any initial analytical results. It is expected that the review will take approximately three years to complete.

### **PAUSE IN NEW COAL LEASING with Continued Mining of Coal Reserves under Existing Leases**

Given the serious concerns raised about the federal coal program and the large reserves of undeveloped coal already under lease to coal companies, it does not make sense to continue to issue new leases under outdated rules and processes. While the review is underway, and consistent with the practice during two previous programmatic reviews, the Interior Department is instituting a pause on new coal leasing on public lands so that those leasing decisions can benefit from the recommendations that come out of the review.

Importantly, the pause does not apply to existing leases and coal production activities. Based on current production levels, coal companies now have approximately 20 years of recoverable coal reserves under lease on federal lands. This estimate may be conservative as Energy Information Administration analyses and other market trends show continuing declines in demand for coal.

During the pause, the BLM will not hold lease sales or process new lease applications for surface and underground coal. There will be limited, commonsense exemptions to the pause for small lease modifications (160 acres or less), coal lease exchanges, certain preference right lease interests, and emergency leasing as defined by the BLM's current regulations, such as where there is a demonstrated safety need or insufficient reserves. Preparatory work on already-pending applications may continue, including NEPA analysis, but the BLM will not make final decisions on new leases, absent an applicable exemption. Pending leases that have already completed NEPA analysis and received a final Record of Decision or Decision Order by a federal agency under the existing regulations will be allowed to complete the final procedural steps to secure a lease or lease modification, including those that are undergoing re-evaluation after having been vacated by judicial decision. The pause does not apply to metallurgical coal (used in steel production), renewals of existing leases, or other BLM, Office of Surface Mining, or Office of Natural Resources Revenue actions related to the federal coal program, such as mine plan approvals. The pause does not apply to coal leases on tribal or allotted lands.

Given the abundance of coal reserves under lease, the declining demand for coal, and the accommodations that will be made for emergency circumstances, the pause should have no material impact on the nation's ability to meet its power generation needs.

**GOOD GOVERNMENT: Improving Transparency and Measuring Carbon Emissions on Public Lands**

The Interior Department is also launching a series of good government reforms to improve the transparency and administration of the federal coal program.

First, in order to better understand and manage carbon emissions on public lands, the Interior Department's U.S. Geological Survey will establish and maintain a public database to account for the annual carbon emissions from fossil fuels developed on federal lands. Currently, there is no dedicated, official measure of the harmful greenhouse gas emissions from coal, oil and gas produced on public lands; however, an independent analysis suggests these emissions could amount to 28 percent of the nation's annual total energy-related emissions. Improved, timely and transparent accounting by one of the world's premier Earth science agencies will provide critical information for the public and federal land managers to reduce carbon pollution from fossil fuel activities as part of the President's Climate Action Plan.

Second, in the near term, the BLM will issue guidance that:

- Improves transparency in the leasing process, such as by requiring BLM State and field offices to post online in an easily accessible format notice of each pending request to lease coal or to reduce royalties;
- Clarifies the process through which the BLM may consider requests for royalty rate reductions;
- Conditions discretionary exchanges or sales of federal coal deposits to another owner on the requirement that the new owner obtain surface owner consent before allowing any coal development; and
- Facilitates the capture of waste mine methane by providing that new or readjusted leases would authorize the coal lessee to capture and sell waste mine methane (if the authorization would not conflict with pre-existing oil and gas lease interests).

###



THE SECRETARY OF THE INTERIOR  
WASHINGTON

ORDER NO. 3338

Subject: Discretionary Programmatic Environmental Impact Statement to Modernize the Federal Coal Program

**Sec. 1 Purpose.** The Department of the Interior (Department) is entrusted with overseeing Federal land and resources for the benefit of current and future generations. This responsibility includes advancing the safe and responsible development of our energy resources, while also promoting the conservation of our Federal lands and the protection of their scientific, historic, and environmental values for generations to come. The production of federally managed coal presently accounts for approximately 41 percent of the coal produced in the Nation. However, the existing regulatory and programmatic scheme for leasing that coal has been in place, with only relatively minor adjustments, since 1979. It was established at a time when market conditions, environmental concerns, and energy infrastructure were considerably different from today. To help determine whether and how the current system for developing Federal coal should be modernized, this Secretarial Order directs the Bureau of Land Management (BLM) to prepare a discretionary Programmatic Environmental Impact Statement (PEIS) that analyzes potential leasing and management reforms to the current Federal coal program. The PEIS will provide a vehicle for the Department to undertake a comprehensive review of the program and consider whether and how the program may be improved and modernized to foster the orderly development of BLM administered coal on Federal lands in a manner that gives proper consideration to the impact of that development on important stewardship values, while also ensuring a fair return to the American public. This Order does not apply to the coal program on Indian lands as that program is distinct from the BLM's program and is subject to the unique trust relationship between the United States and federally recognized Indian tribes and government-to-government consultation requirements, nor does it apply to any action of the Office of Surface Mining Reclamation and Enforcement (OSMRE) or the Office of Natural Resources Revenue (ONRR).

**Sec. 2 Background.**

a. Summary of the Federal Coal Program.

The BLM has responsibility for coal leasing on approximately 570 million acres where the coal mineral estate is owned by the Federal Government. The owner of the surface estate of these lands varies and may be the BLM, other Federal agencies, state and local governments, or private landowners. Under authorities, such as the Mineral Leasing Act (MLA), the Mineral Leasing Act for Acquired Lands, and the Federal Land Policy and Management Act, the BLM regulates the leasing and development of this coal. Other Department bureaus, in particular OSMRE and ONRR, also have responsibilities in administering coal mining operations. The OSMRE and those states that have regulatory primacy under the Surface Mining Control and Reclamation Act

(SMCRA) have regulatory responsibilities over surface coal mining and reclamation operations. The ONRR collects, disburses, and verifies revenues from the lease, including bonus bids, royalties, and rental payments, and distributes those funds evenly between the Federal Treasury and the states where the coal resources are located.

The BLM issued coal leasing regulations in 1979 that contemplated two separate competitive coal leasing processes: regional leasing, where the BLM selects tracts within a region for competitive sale, and leasing by application, where the public nominates a particular tract of coal for competitive sale. The regional leasing system has not been used since the 1980s, and currently all BLM coal leasing is done by application. Leasing by application begins with BLM review of an application to ensure completeness, that it conforms to existing land use plans, and that it contains sufficient geologic data to determine the fair market value of the coal. The Agency then prepares an environmental analysis in compliance with the National Environmental Policy Act (NEPA). At the same time, the BLM will also consult with tribal governments and appropriate Federal and state agencies, and will determine whether the surface owner consents to leasing in situations where the surface is not administered by the BLM.

Preparations for the actual lease sale begin with the BLM formulating, after obtaining public comment, an estimate of the fair market value of the coal. This number is kept confidential and is used to evaluate the bids received during the sale. Sealed bids are accepted prior to the date of the sale and are publicly announced during the sale. The winning bid is the highest bid that meets or exceeds the coal tract's presale estimated fair market value, assuming that the bidder meets all eligibility requirements and has paid the appropriate fees and payments.

The BLM receives revenue from coal leasing in three ways: (1) a bonus that is paid at the time BLM issues a lease; (2) rental fees; and (3) production royalties. The royalty rates are set by regulation at a fixed 8 percent for underground mines and not less than 12.5 percent for surface mines. All receipts from a lease are shared equally with the state in which the lease is located.

Over the last few years, approximately 41 percent of the Nation's annual coal production has come from Federal land. Federal coal produced from the Powder River Basin in Montana and Wyoming accounts for over 85 percent of that Federal coal production. Federal coal was used to generate about 14 percent of the Nation's electricity in 2015. Coal is also used for other critical processes, including making steel (metallurgical coal).

As of Fiscal Year 2014, the BLM administered 310 Federal coal leases, encompassing 475,692 acres in 10 states, with an estimated 7.75 billion tons of recoverable Federal coal reserves. Over the last decade, the BLM has held 39 coal lease sales and managed leases that produced approximately 4.4 billion tons of coal and \$10.3 billion in revenue. The recoverable reserves of Federal coal currently under lease are estimated to be sufficient to continue production from federal leases at current levels for 20 years, which does not take into account projections from the Energy Information Administration (EIA) showing that demand for coal is declining.

b. Open Conversation about Modernizing the Coal Program.

On March 17, 2015, I called for "an honest and open conversation about modernizing the Federal coal program." The last time the Federal coal program underwent comprehensive review was in

the mid-1980s, and market conditions, infrastructure development, and national priorities have changed considerably since that time. My call also responded to continued concerns from numerous stakeholders about the Federal coal program, including concerns raised by the Government Accountability Office (GAO), the Department's Office of Inspector General (OIG), Members of Congress, and interested stakeholders. The concerns raised by the GAO and OIG centered on whether taxpayers are receiving fair market value from the sale of coal. Other commenters raised concerns that the current Federal leasing structure lacks transparency and competition and is therefore not ensuring that the American taxpayer receives a fair return from Federal coal resources. These groups also questioned whether the leasing program results in over-supply of a commodity that has significant environmental and health impacts, including impacts on global climate change.

In response to my call for a conversation to address these concerns, the BLM held 5 listening sessions on the Federal coal program in the summer of 2015. Sessions were held in Washington, D.C.; Billings, Montana; Gillette, Wyoming; Denver, Colorado; and Farmington, New Mexico. The Department heard from 289 individuals during the sessions and received over 92,000 written comments before the comment period closed on September 17, 2015. The oral and written comments revealed several recurring themes:

- Concern about global climate change and the impact of coal production and use.
- Concern about the loss of jobs and local revenues if coal production is reduced.
- Support for increased transparency and public participation in leasing and royalty decisions and concern about whether the structure of the leasing program does not provide for adequate competition or a fair return to the taxpayer for the use of federal resources.
- Support for increasing the coal royalty rate, because: (1) the royalty rate should account for the environmental costs of coal production; (2) the royalty rate should match the rate for offshore Federal leases; and (3) taxpayers are not receiving a fair return.
- Support for maintaining or lowering royalty rates, because: (1) the coal industry already pays more than its fair share because existing Federal rates are too high given current market conditions; (2) raising rates will lower production and revenues; and (3) raising rates will cost jobs and harm communities.
- Support for streamlining the current leasing process, so that the Federal coal program is administered in a way that better promotes economic stability and jobs, especially in coal communities which are already suffering from depressed economic conditions.

Of these concerns, three aspects of the current coal program received the most attention. First, numerous stakeholders are concerned that American taxpayers are not receiving a fair return on public coal resources. Second, many stakeholders are concerned that the Federal coal program conflicts with the Administration's climate policy and our national climate goals, making it more difficult for us to achieve those goals. Third, there are numerous and varying concerns about the structure of the Federal coal program in light of current market conditions, including how implementation of the Federal leasing program affects current and future coal markets, coal-dependent communities and companies, and the reclamation of mined lands. These three main concerns are addressed in more detail below.

i. Concerns about Fair Return. In 2013, both GAO and OIG issued reports expressing concerns about the Federal coal program, particularly with respect to the leasing process and fair market value. In response, in 2014 the BLM developed new protocols and issued policy guidance, as well as a manual and handbook, to implement these changes. Nevertheless, stakeholders have expressed concerns that the BLM's response, while helpful, was insufficient to rectify fundamental weaknesses in the program with respect to fair return.

These concerns arise, at least in part, because there is currently very little competition for Federal coal leases. About 90 percent of lease sales receive bids from only one bidder, typically the operator of a mine adjacent to the new lease, given the investment required to open a new mine. While the BLM conducts a peer-reviewed analysis to determine the "fair market value" of the coal and will not sell a lease unless the bid meets or exceeds that value, commenters have questioned whether an accurate fair market value can be identified in the absence of a truly competitive marketplace.

Commenters also raised concerns about the royalty rates set in Federal leases, which are set by regulation at a fixed 8 percent for underground mines and not less than 12.5 percent for surface mines. Many stakeholders believe that these rates do not adequately compensate the public for the removal of the coal and the externalities associated with its use. Still others have suggested that the impact of Federal coal sales, which currently represent approximately 41 percent of total domestic production, artificially lowers market prices, further reducing the amount of royalties received.

Stakeholders also criticize the Federal coal program for obtaining even lower returns through certain types of leasing actions, such as lease modifications, and through royalty rate reductions, which may result in royalty rates as low as 2 percent. In addition, stakeholders have noted that the \$100 acre minimum bid requirement, which is rarely applicable due to fair market value requirements, but occasionally relevant, is outdated.

ii. Concerns about Climate Change. The second broad category of concerns about the Federal coal program relates to its impacts on climate change. The United States has pledged to the United Nations Framework Convention on Climate Change (UNFCCC) to reduce its greenhouse gas (GHG) emissions by 26-28 percent below 2005 levels by 2025. The Obama Administration has made, and is continuing to make, unprecedented efforts to reduce GHG emissions in line with this target through numerous measures. Numerous scientific studies indicate that reducing GHG emissions from coal use worldwide is critical to addressing climate change.

At the same time, as noted above, the Federal coal program is a significant component of overall United States' coal production. Federal coal represents approximately 41 percent of the coal produced in the United States, and when combusted, it contributes roughly 10 percent of the total U.S. GHG emissions.

Many stakeholders highlighted the tension between producing very large quantities of Federal coal while pursuing policies to reduce U.S. GHG emissions substantially, including from coal combustion. Critics also noted that the current leasing system does not provide a way to systematically consider the climate impacts and costs to taxpayers of Federal coal development.

iii. Concerns about Market Conditions. Stakeholders raised various concerns about the implications of current and future coal market conditions. As reported by EIA, between 2008 and 2013, United States' coal production fell by 16 percent, as declining natural gas prices and other factors made coal less competitive as a fuel for generating electricity. In 2015, United States' coal production was roughly 900 million short tons (MMst), 10 percent lower than 2014—the lowest level since 1986. Worldwide, demand for coal appears to be softening as well, with EIA projecting a 21 percent decline in total U.S. coal exports in 2015 from the previous year. As a result, a number of mines in the U.S. have idled production, several major coal companies have entered Chapter 11 bankruptcy, many coal miners have been laid off, and coal-dependent communities have suffered. The EIA and other projections of future coal production show anticipated continuing declines.

Stakeholders have urged the BLM to change the Federal coal program to take these significant market changes into account, although the recommended changes vary. Some suggest that the program should attempt to improve the economic viability of the coal industry and help coal-dependent communities by reducing royalties and streamlining the leasing and permitting processes. Others raise concerns that the program has contributed to low coal prices by incentivizing over-production through non-competitive sales that oversupply the market.

Some have focused on how current market conditions threaten reclamation of lands disturbed by coal mining and may leave state and Federal governments with billions of dollars of unfunded reclamation liabilities. Specifically, many coal companies “self-bond” to meet reclamation bonding requirements, and some stakeholders have asserted that these companies may no longer have the funds to support reclamation activities, and/or they may attempt to shed reclamation obligations in bankruptcy.

Stakeholders also expressed various views regarding exports of Federal coal. Some see export markets as a possible way to maintain or expand Federal coal production, while others view the production of coal for export as a less valuable activity than coal production for domestic use. Still others expressed concern that the export of U.S. coal will contribute to GHG emissions worldwide, which undermines our climate objectives. A number of stakeholders expressed concern that exports, or the potential for exports, were not adequately considered as part of leasing decisions or fair market value determinations.

c. Previous Comprehensive Reviews.

The Department has previously conducted two separate comprehensive reviews of the Federal coal program. In the late 1960s, there were serious concerns about speculation in the coal leasing program. A BLM study discovered a sharp increase in the total Federal acreage under lease and a consistent decline in coal production. In response, the Department undertook the development of a planning system to determine the size, timing, and location of future coal leases, and the preparation of an environmental impact statement (EIS) for the entire Federal coal leasing program. The short-term actions included a complete moratorium on the issuance of new coal prospecting permits, and a moratorium with limited exceptions on the issuance of new Federal coal leases. New leases were issued only to maintain existing mines or to supply reserves for production in the near future, where “near future” meant that development and production were to commence within 3 and 5 years, respectively. The moratorium was scaled

back over time, but was not completely lifted until 1981, after a PEIS had been completed, a new leasing system had been adopted through regulation, and litigation was resolved.

In 1982, concerns about the Federal coal program arose again, this time related to allegations that the Government did not receive fair market value from a large lease sale in the Powder River Basin under the new procedures adopted as part of the programmatic review in the 1970s. Among other reports on the issue, in May 1983, GAO issued a report concluding that the Department had received roughly \$100 million less than it should have for the leases sold, although the Department disputed this conclusion. In response, in July 1983, Congress directed the Secretary to appoint members to a commission, known as the Linowes Commission, to investigate fair market value policies for Federal coal leasing. Congress also, in the 1984 Appropriations Act, directed the Office of Technology Assessment (OTA) to study whether the Department's coal leasing program was compatible with the nationally mandated environmental protection goals.

As part of the 1984 Appropriations Bill, Congress imposed a moratorium on the sale or lease of coal on public lands, subject to certain exceptions, starting in 1983 and ending 90 days after publication of the Linowes Commission's report. The Linowes Commission published the *Report of the Commission on Fair Market Value Policy for Federal Coal Leasing* in February 1984. The OTA report, *Environmental Protection in the Federal Coal Leasing Program*, was released in May 1984. The principal thrust of these reports was that the Department should: (1) temper its pace of coal leasing; (2) improve and better document its procedures for receiving fair market value; and (3) take care to balance competing resource uses in making lease decisions.

Interior Secretary William P. Clark extended the suspension of coal leasing (with exceptions for emergency leasing and processing preference right lease applications, among other things), while the Department completed its comprehensive review of the program. This review included proposed modifications to be made by the Department in response to the Linowes Commission and OTA reports. Secretary Clark announced on August 30, 1984, that the Department would prepare an EIS supplement to the 1979 Final Environmental Statement for the Federal Coal Management Program. The Department issued the Record of Decision for the PEIS supplement in January 1986, in the form of a Secretarial Issue Document. That document recommended continuation of the leasing program with modifications. In conjunction with those modifications, Interior Secretary Donald Hodel lifted the leasing moratorium in 1987.

**Sec. 3 Authorities.** This Order is issued under statutory authority that includes, but is not limited to, the Mineral Leasing Act, 30 U.S.C. §§ 181 *et seq.*; the Mineral Leasing Act for Acquired Lands, 30 U.S.C. §§ 351 *et seq.*; the National Environmental Policy Act, 42 U.S.C. §§ 4321 *et seq.*; the Surface Mining Control and Reclamation Act, 30 U.S.C. §§ 1201 *et seq.*; and the Federal Land Policy and Management Act, 43 U.S.C. §§ 1701 *et seq.*

**Sec. 4 Discretionary Programmatic Environmental Impact Statement.** Given the broad range of issues raised over the course of the past year (and beyond) and the lack of any recent analysis of the Federal coal program as a whole, a more comprehensive, programmatic review is in order, building on the BLM's public listening sessions. Accordingly, to meaningfully address the breadth and complexity of the issues raised by commenters regarding the Federal coal



program, I hereby direct the BLM to conduct a broad, programmatic review of the Federal coal program it administers through the preparation of a PEIS under NEPA.

The Department is authorized to undertake this effort in its stewardship role as a proprietor and sovereign regulator which is charged by Congress with managing and overseeing mineral development on the public lands, not only for the purpose of ensuring safe and responsible development of mineral resources, but also to ensure conservation of the public lands, the protection of their scientific, historic, and environmental values, and compliance with applicable environmental laws. Additionally, the Department has the statutory duty to ensure a fair return to the taxpayer and broad discretionary authority to decide where, when, and under what terms and conditions, mineral development should occur, including with regard to the issuance of Federal coal leases.

Although I am not proposing any regulatory action at this time, the purpose of the PEIS is to identify, evaluate, and potentially recommend reforms to the Federal coal program. This review will enable the Department to consider how to modernize the program to allow for the continued development of Federal coal resources while addressing the substantive issues raised by the public, other stakeholders, and the Department's own review of the comments it has received.

While the precise issues to be assessed in the PEIS will be determined through the public scoping process, the PEIS should at a minimum address the following topics:

a. How, When and Where to Lease. The regional leasing program authorized in the 1979 regulations has not worked as envisioned and, instead, BLM has conducted leasing only in response to industry applications. Given concerns about the lack of competition in the lease-by-application system, as well as consideration of environmental goals, the PEIS should examine whether the current regulatory framework should be changed to provide a better mechanism or mechanisms to decide which coal resources should be made available and how the leasing process should work.

As part of this evaluation, the PEIS should explicitly examine the issue of when to lease. Some leasing programs for other Federal resources operate with an established schedule for leasing or consideration of leasing (*e.g.*, BLM holds onshore oil and gas lease sales on a quarterly basis if parcels are available; offshore oil and gas leasing occurs using a schedule established in a five-year plan). The PEIS should examine whether scheduled sales should be used for Federal coal.

The PEIS should also examine where to lease. In other contexts, the Department has identified areas to promote certain kinds of resource development. For example, the BLM's Solar PEIS (Western Solar Plan) amended land use plans across six southwestern states and established preferred locations for solar development. The PEIS should examine whether a similar approach would be useful for coal to minimize potential user conflicts and streamline leasing decisions.

b. Fair Return. The PEIS should address whether the bonus bids, rents, and royalties received under the Federal coal program are successfully securing a fair return to the American public for Federal coal, and, if not, what adjustments could be made to provide such compensation. As part of this analysis, the PEIS should examine whether the decision to lease large amounts of relatively low cost coal artificially drives down pricing in the U.S. market and, if so, how the taxpayer may best be compensated for the reduced royalties due to artificially low

prices. The PEIS should also examine whether the BLM estimates of fair market value for purposes of establishing minimum bids successfully substitute for competition in the bidding process, and if not, how to better estimate fair market value.

c. Climate Impacts. With respect to the climate impacts of the Federal coal program, the PEIS should examine how best to assess the climate impacts of continued Federal coal production and combustion and how to address those impacts in the management of the program to meet both the Nation's energy needs and its climate goals, as well as how best to protect the public lands from climate change impacts.

d. Socio-Economic Considerations. Beyond the issue of fair market value, the PEIS should assess whether the current Federal coal leasing program adequately accounts for externalities related to Federal coal production, including environmental and social impacts. It should more broadly examine how the administration, availability, and pricing of Federal coal affect regional and national economies (including job impacts), and energy markets in general, including the pricing and viability of other coal resources (both domestic and foreign) and other energy sources. The impact of possible program alternatives on the projected fuel mix and cost of electricity in the United States should also be examined.

e. Exports. The PEIS should address whether leasing decisions should consider whether the coal to be produced from a given tract would be for domestic use or export. In consultation with other applicable executive branch offices, the PEIS should examine how to estimate export potential, particularly given potential differences between the estimates of industry and independent economic experts about the prospects for exports in a given circumstance.

f. Energy Needs. Finally, the PEIS should examine the degree to which Federal coal supports, or should support, fulfilling the energy needs of the United States. The evaluation should include an assessment of how the administration, availability, and pricing of Federal coal impacts electricity generation in the United States, particularly in light of other regulatory influences, and what other sources of energy supply (including efficiency) are projected to be available.

**Sec. 5 Pause on the Issuance of New Federal Coal Leases for Thermal (Steam) Coal.** Lease sales and lease modifications result in lease terms of 20 years and for so long thereafter as coal is produced in commercial quantities. Continuing to conduct lease sales or approve lease modifications during this programmatic review risks locking in for decades the future development of large quantities of coal under current rates and terms that the PEIS may ultimately determine to be less than optimal. This risk is why, during the previous two programmatic reviews, the Department halted most lease sales with limited exceptions for small sales, emergencies and other situations involving potential economic hardship. Considering these factors and given the extensive recoverable reserves of Federal coal currently under lease, I have decided that a similar policy is warranted here. A pause on leasing, with limited exceptions, will allow future leasing decisions to benefit from the recommendations that result from the PEIS while minimizing any economic hardship during that review.

a. Pursuant to my discretionary authority under the Mineral Leasing Act (e.g., 30 U.S.C § 201) and other statutes, and based on the reasons discussed herein, I conclude that further evaluation, additional receipt of public input, and comprehensive consideration of the Federal coal program is warranted, and accordingly, I hereby direct BLM to apply the following limitations on the issuance of Federal coal leases until the completion of the PEIS:

(i) No new applications for thermal (steam) coal leases or lease modifications will be processed, subject to the enumerated exclusions in Section 6 of this Order; and

(ii) For pending applications, no lease sales will be held, leases issued, or modifications approved for thermal (steam) coal, subject to the enumerated exclusions in Section 6 of this Order. At an applicant's request, preparatory work on pending applications may continue (including the preparation of NEPA analyses), but no final decision on whether to hold a lease sale will be made unless one of the exceptions listed in Section 6 of this Order applies.

b. This pause in holding lease sales, issuing coal leases, and approving lease modifications will apply to applications for both surface and underground thermal coal, but it does not apply to metallurgical coal. Metallurgical coal is produced at far fewer mines and in much smaller quantities than thermal coal, and recoverable metallurgical coal reserves may not be sufficient to support current production levels for that resource during the pause. In addition, metallurgical coal is required for key applications, such as steelmaking, for which substitutes are not readily available. Given that the Federal mineral estate includes comparatively very small quantities of metallurgical coal, we expect potential impacts from any leasing activities for metallurgical coal during the review period to be very limited.

c. This pause does not constitute a decision on the merits of any application, but is merely a deferral of the decision to allow the PEIS to be considered in making future final decisions. The pause applies only to the Federal mineral estate administered by the BLM and does not apply to coal leases on tribal or allotted lands, which are regulated by the Bureau of Indian Affairs under a different regulatory structure. The pause applies only to lease sales and modifications. It does not apply to other BLM actions related to the Federal coal program, including the processing and issuance of coal exploration licenses, the issuance of renewal leases when required by the terms of existing leases, and the development and implementation of resource management plans. Similarly, the pause does not apply to any actions undertaken by ONRR, OSMRE, or any other agency, office, or bureau with duties related to the development, production or reclamation of Federal or non-Federal coal resources.

**Sec. 6 Exclusions.** Nothing in this Order will be deemed to prohibit or restrict:

- a. emergency leasing as defined in 43 C.F.R. § 3425.1-4;
- b. lease modifications, as defined in 43 C.F.R. § 3432.1, that do not exceed 160 acres or the number of acres in the original lease, whichever is less;
- c. lease exchanges as defined in 43 C.F.R. §§ 3435.1, 3436.1, and 3436.2;
- d. the rights of preference right lease applicants based on prospecting permits issued prior to August 4, 1976; and


- e. the sale and issuance of new thermal coal leases by application, 43 C.F.R. Subpart 3425, or the issuance of thermal coal lease modifications, 43 CFR Subpart 3432, under pending applications for which the environmental analysis under NEPA has been completed and a Record of Decision or Decision Record has been issued by the BLM or the applicable Federal surface management agency as of the date of this Order. This exception extends to previously issued Records of Decision or Decision Records that have been (or may be) vacated by judicial decision and are undergoing re-evaluation in accordance with the judicial decision. Before holding any lease sale or issuing any lease under this exception, the BLM must confirm and ensure that the applicable NEPA document for a project is adequate and includes, at a minimum, an analysis of the direct and indirect greenhouse gas emissions resulting from the proposed leasing action.

**Sec. 7 Implementation.**

- a. The Director of the BLM is responsible for implementation of this Order. This responsibility may be delegated as appropriate.
- b. The Director will expeditiously initiate the NEPA scoping process by inviting Federal, State, and local agencies, Indian tribes, and the public to help identify the environmental issues and reasonable alternatives to be examined in the PEIS. Upon completion of the scoping process, the Director will provide a scoping report to me along with a proposed schedule for the completion of the PEIS.

**Sec. 8 Effect of the Order.** This Order is intended to provide for a comprehensive review of the Federal coal program and allow for the Department to improve the program going forward. This Order and any resulting report or recommendation are not intended to, and do not, create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its departments, agencies, instrumentalities or entities, its officers or employees, or any other person. To the extent there is any inconsistency between the provisions of this Order and any Federal laws or regulations, the laws or regulations will control.

**Sec. 9. Effective Date.** This Order is effective immediately and will remain in effect until its provisions are amended, superseded, or revoked, whichever occurs first.

  
Secretary of the Interior

Date: **JAN 15 2016**

## **Q&A**

### **Department of the Interior Federal Coal Reforms**

#### **OVERALL**

##### **What actions are being taken today?**

U.S. Secretary of the Interior Sally Jewell announced several actions to strengthen and improve the federal coal program that is managed on behalf of all Americans. There are three main components that the Interior Department is announcing:

- 1) A formal, comprehensive review of the federal coal program that will identify and evaluate potential reforms;
- 2) A pause on new coal leasing on public lands while the review is underway; and
- 3) A series of good government reforms to improve transparency and program administration, including establishing a public database to account for the carbon emissions from fossil fuels on public lands.

##### **Why are you taking these actions?**

The federal government has a responsibility to all Americans to ensure that the coal resources it manages are administered in a responsible way to help meet our energy needs and that taxpayers receive a fair return for the sale of these public resources. And yet, over the past few years, it has become clear that many of the decades-old regulations and procedures that govern the federal coal program are outdated and do not fully reflect the realities of today's economy or current understanding of environmental and public health impacts from coal production.

In March 2015, Secretary of the Interior Sally Jewell called for an “open and honest conversation about modernizing the federal coal program,” and she launched a series of listening sessions across the country to hear from the public on complex questions, including: Are taxpayers and local communities getting a fair return from these resources? How can we make coal leasing more transparent and more competitive? How do we manage the program in a way that is consistent with our climate change objectives?

As a direct result of these public listening sessions – as well as concerns raised by the Government Accountability Office, the Interior Department's Inspector General, and Members of Congress – Secretary Jewell is taking the next step in the conversation by launching a formal, comprehensive review of the federal coal program. While the review is underway, consistent with practices during previous programmatic reviews of the federal coal program, Secretary Jewell has ordered a pause on significant new coal leasing decisions on public lands so that those decisions and leases can incorporate lessons learned from the comprehensive review to ensure that taxpayers receive a fair return for the sale of these public resources.

##### **How did the public help shape this path forward?**

Over the summer of 2015, the Interior Department hosted five listening sessions across the country (Washington, D.C.; Billings, Montana; Gillette, Wyoming; Denver, Colorado; and Farmington, New Mexico). Over the course of the public comment period, the Interior

Department heard from hundreds of individuals and received over 90,000 written comments that represented a wide variety of views. The Interior Department carefully reviewed the public feedback before crafting a path forward.

### **What concerns have the GAO, IG and Members of Congress raised?**

In June 2013, the Interior Department's Office of Inspector General issued a report ([\*Coal Management Program, U.S. Department of the Interior\*](#)) that found weaknesses in the sale process and deficiencies in inspection and enforcement. In December 2013, the Government Accountability Office issued a [report](#) that found the Bureau of Land Management (BLM) could improve its coal leasing program by enhancing the appraisal process, more explicitly considering coal exports, and providing more public information. Over the years, Members of Congress have raised a variety of concerns with the program, including the environmental impacts, and the lack of competitiveness, transparency, and accounting for full costs of carbon.

### **Has the Interior Department undertaken any steps to address these concerns?**

Yes, several. In January 2015, Interior's Office of Natural Resources Revenue published a proposed rule governing the valuation of federal oil and gas, and federal and American Indian coal resources. The proposed rule would modernize existing valuation regulations, which were put in place for natural gas and coal in the late 1980s, and ensure that the valuation process better reflects the changing energy industry while protecting taxpayers and American Indian assets. A final rule will be issued in 2016.

In December 2014, the BLM announced a series of actions aimed at addressing criticisms that its process to determine fair market value at the leasing stage is insufficient and fails to adequately account for higher prices received overseas. The BLM revised its manual and handbooks for the coal program to increase clarity regarding how the agency determines fair market value, provide guidance on independent review of appraisal reports, and make improvements that will enable the BLM to account for export potential through analysis of comparable sales and income. The BLM has also released safety, inspection and enforcement guidance to promote more responsible development of coal resources on the nation's public lands, regarding: improved documentation for coal operation inspections on coal exploration licenses, licenses to mine, leases, and logical mining units; and increased Mineral Mine Inspector training and certification requirements.

In addition, Interior's Office of Surface Mining Reclamation and Enforcement has proposed the Stream Protection Rule, under the Surface Mining Control and Reclamation Act (SMCRA), which would modernize 30-year old rules to better protect communities from the adverse effects of coal mining, and provide greater certainty to the mining industry about what constitutes harm to certain water bodies during mining activities.

## **COMPREHENSIVE REVIEW OF COAL PROGRAM**

### **What is a PEIS?**

A Programmatic Environmental Impact Statement (PEIS) is a formal, comprehensive review, with opportunity for extensive public engagement which evaluates the effects of broad proposals or program-level decisions. In this case, the Interior Department will use the PEIS process to

help identify and evaluate potential reforms to the federal coal program. The PEIS process will be completed consistent with the National Environmental Policy Act. The process is being undertaken as a discretionary action.

### **What will the PEIS evaluate?**

The review will take a careful look at issues related to the BLM's administration of the federal coal program, including:

- The appropriate leasing mechanisms for how, when and where to lease;
- How to account for the environmental and public health impacts of the federal coal program; and
- How to ensure the sale of these public resources results in a fair return to the American taxpayers, including whether current royalty rates should be adjusted.

The review will also explore whether U.S. coal exports should factor into leasing or other program decisions; how the management, availability and pricing of federal coal impacts domestic and foreign markets and energy portfolios; and the role of federal coal in fulfilling the energy needs of the United States.

### **What are the next steps?**

The review will include extensive opportunities for public participation. The PEIS will kick off with public meetings in early 2016 to help determine the precise scope of the review. The Interior Department will release an interim report by the end of 2016 with conclusions from the scoping process about alternatives that will be evaluated and, as appropriate, any initial analytical results. The scoping period will help inform the development of a draft PEIS, which the BLM will issue for public review and comment. Informed by comments on the draft PEIS, the BLM will then issue a Final PEIS. Changes to the coal leasing program may be implemented through a Record of Decision or separate processes.

### **How can I get involved?**

Members of the public and stakeholders are encouraged to participate at all stages of the process, including in the public scoping meetings in 2016. There will also be multiple opportunities to submit written comments throughout the process.

### **How long will the PEIS take?**

A PEIS typically takes several years to complete, providing adequate time for public comment and review at each stage of the process. It is expected that the review will take approximately three years to complete.

### **Have programmatic reviews of the federal coal program been done before?**

Yes – although a programmatic review of the coal program has not been completed in more than 30 years. In 1983 and 1984, Congress established a commission to investigate fair market value policies for coal leasing and required a study of whether the coal leasing program was compatible with national environmental protection goals. The Interior Department followed these reports with a supplemental PEIS on the federal coal program, completed in 1986.

Previously, in 1973, President Nixon's Interior Department launched a PEIS in response to serious concerns about speculation in the coal leasing program, which was completed in 1979. Both programmatic reviews were accompanied by similar pauses in new coal leasing decisions.

## **PAUSE ON NEW COAL LEASING**

### **Why is the Secretary instituting a pause on new coal leasing?**

Given the serious concerns raised about the federal coal program and the large reserves of undeveloped coal already under lease to coal companies, it would not be responsible to continue to issue new leases under outdated rules and processes. While the review is underway, and consistent with the practice during two previous programmatic reviews, the Interior Department is instituting a pause on new coal leasing on public lands so that those leasing decisions can benefit from the recommendations that come out of the review.

### **What does the pause cover? Will there be exceptions?**

During the pause, the BLM will not hold lease sales or process new lease applications for surface and underground coal. Importantly, the pause does not apply to existing leases and coal production activities.

There will be limited, commonsense exemptions to the pause for small lease modifications (160 acres or less), coal lease exchanges, certain preference right lease interests, and emergency leasing as defined by the BLM's current regulations, such as mines where there is a demonstrated safety need or insufficient reserves. Preparatory work on already-pending applications may continue, including NEPA analysis, but the BLM will not make final decisions on new leases, absent an applicable exemption. Pending leases that have already completed NEPA analysis and received a final Record of Decision or Decision Order by a federal agency under the existing regulations will be allowed to complete the final procedural steps to secure a lease or lease modification, including those that are undergoing re-evaluation after having been vacated by judicial decision. The pause does not apply to metallurgical coal (used in steel production), renewals of existing leases, or other BLM, Office of Surface Mining, or Office of Natural Resources Revenue actions related to the federal coal program, such as mine plan approvals. The pause does not apply to coal leases on tribal or allotted lands.

### **What is an "emergency" that would allow leasing under the exceptions?**

The coal leasing regulations at 43 CFR 3425.1-4 allow for an emergency lease sale where the coal is needed within 3 years to maintain production, or where the coal would be bypassed if not leased.

More specifically, the regulations outline two situations in which emergency leasing is allowed. In the first situation, the Federal coal is needed within 3 years either to maintain the mine at its current average annual production levels, or to supply coal for contracts signed prior to July 19, 1979. In the second situation, if the coal deposits are not leased, they would be bypassed in the reasonably foreseeable future, and at least some of the tract applied for would be used within 3 years.

In both cases, the applicant for emergency leasing must also show that the need for the coal



resulted from circumstances that were either beyond the control of the applicant or could not have been reasonably foreseen and planned for in time to allow for the normal leasing process. Leases issued under the emergency provision are limited to 8 years of recoverable reserves at the mine's current rate of production.

### **Will the pause impact current coal production?**

The Interior Department does not anticipate that the pause will significantly alter current production. Under the pause, companies may continue to mine the large reserves of undeveloped coal already under lease.

Based on current production levels, coal companies now have approximately 20 years of recoverable coal reserves under lease on federal lands. This estimate may be conservative as Energy Information Administration analyses and other market trends show continuing declines in demand for coal. Many current lease applications with the BLM are on hold at the companies' request due to reductions in market demand for coal.

Given the abundance of coal reserves under lease, the declining demand for coal, and the accommodations that will be made for emergency circumstances, the pause should have no material impact on the nation's ability to meet its power generation needs.

### **Is there precedent for such actions?**

Yes. In 1973, President Nixon's Interior Secretary Morton suspended coal leasing – including a complete moratorium on the issuance of new prospecting permits, and a prohibition on the issuance of new federal coal leases except in very limited circumstances. The moratorium was lifted in 1981, after a PEIS had been completed, a new leasing system had been adopted, and litigation resolved. In 1984, as part of the 1984 Appropriations Bill, Congress imposed a moratorium on the sale of coal lease tracts starting in 1983 and ending 90 days after publication of the Linowes Commission's report. The Congressional moratorium was set to expire in May 1984, but President Reagan's Interior Secretary Clark continued the moratorium, which continued the suspension of all coal leasing (except for emergency leasing, lease modifications and processing preference right lease applications) while Interior completed its comprehensive review of the program. The leasing moratorium was lifted in 1987.

### **Does the pause impact existing leases? Coal on tribal lands? Forest Service lands? State or private lands?**

The pause does not apply to production on existing leases. The pause only applies to the Federal mineral estate administered by the BLM (regardless of whether the BLM also controls the surface estate), and it does not apply to coal leases on Tribal or allotted lands, which are administered under a different regulatory system. The pause only applies to lease sales and modifications; it does not apply to other BLM actions related to the Federal coal program, including the processing and issuance of coal exploration licenses, the issuance of renewal leases when required by the terms of existing leases, and the development and implementation of resource management plans. Similarly, the pause does not apply to actions undertaken by ONRR, OSMRE, or any other agency, office, or bureau with duties related to the development, production, or reclamation of Federal coal resources. Preparatory work on already-pending

applications may continue, including NEPA analysis, but the BLM will not make final decisions on leases until the review is completed, absent an applicable exemption.

**How long will the pause last?**

The Secretarial Order calls for the limitations on the issuance of federal coal leases to be applied until the completion of the PEIS. A PEIS typically takes several years to complete, providing adequate time for public comment and review at each stage of the process. It is expected that the review will take approximately three years to complete.

**What impact will this pause have on the coal economy? Will this raise electricity rates?**

Given the abundance of coal reserves under lease, the declining demand for coal, and the accommodations that will be made for emergency circumstances, the pause should have no material impact on the nation's ability to meet its power generation needs and is not expected to impact electricity production or prices.

**What authority does the Secretary have to take this action?**

The Secretary has authority under the Mineral Leasing Act, the Mineral Leasing Act for Acquired Lands, and the Federal Land Policy and Management Act to manage federal coal leasing. She has the authority under National Environmental Policy Act to utilize the PEIS process as part of a programmatic review of the federal coal program.

**IMPROVING TRANSPARENCY and MEASURING CARBON EMISSIONS ON PUBLIC LANDS**

**Why are you establishing a database on carbon emissions?**

This year the Interior Department's U.S. Geological Survey will complete a national inventory of carbon that is sequestered (stored) in the lands of the United States. Currently, however, there is no dedicated, official measure of the harmful greenhouse gas emissions from coal, oil and gas produced on public lands. An analysis from a non-governmental organization suggests that the emissions from these activities on public lands could amount to 28 percent of the nation's annual total energy-related fossil fuel emissions.

In order to better understand and manage carbon stocks on public lands, the USGS will establish a baseline and public database that accounts for carbon emitted from fossil fuels produced on public lands. Improved, timely and transparent accounting by one of the world's premier Earth science agencies will provide critical information for the public and federal land managers as we work to reduce carbon pollution from fossil fuel activities.

**What will be measured?**

The USGS will assess for the carbon stored and sequestered on public lands, and the quantities of greenhouse gases emitted from activities on public lands, including potential downstream emissions from fossil fuels.

The publicly available database will include:

- Baseline carbon stocks and sequestration rates;

- Other baseline data products such as habitats, ecosystems, soil conditions, protected status, land use and change, to facilitate analysis of environmental impacts and management policy options;
- Annually updated major land use and land cover change areas (e.g. wildfire, loss of wetlands, new acquisitions) and associated carbon emissions and uptakes;
- Annually updated net ecosystem carbon flux (i.e. sink or source);
- Annual estimates of greenhouse gas emissions resulting from energy development activities;
- Annual quantities of oil and gas extractions from federally managed lands; and
- Potential downstream greenhouse gas emissions associated with oil and gas extraction on federally managed lands.

### **Who will be involved in the initiative?**

The USGS will be the lead agency in developing the database. The database would link to existing data from other government sources, such as the Environmental Protection Agency and the Energy Information Administration.

The accounting methodology will rely on ongoing USGS research and completion of the LCMAP (land change monitoring, assessment, and projection) project, which is expected to provide annual updates of land use/land cover change by 2018. It is also dependent on the development and operational use of the LUCAS (land use and carbon scenario simulator) model to track annual carbon fluxes as a result of land use change.

### **What are the next steps?**

The USGS will first complete its pilot studies of carbon emissions and sequestration on federal lands and other requisite inputs to the LUCAS model. The database of carbon emissions and storage on federal lands would be established in 2018.

### **Why is the BLM issuing guidance that requires State and field offices to post online each pending request to lease coal or to reduce royalties? When will this go into effect?**

Although much of this information is already available online, stakeholders have raised concerns that there is no formal guidance on the matter and not all BLM State and field offices currently post notice of these types of requests in a consistent manner or in real time. The BLM is committed to transparency and providing the public access to the information they need to understand how we are managing public resources, consistent with protections for confidential business information. Updating our guidance to ensure uniform, clear and consistent procedures for posting notice of all coal leasing and royalty rate reduction requests online is simply good government. We anticipate issuing guidance on this matter in the near term.

### **Why is the BLM conditioning any exchange or sale of federal coal to another owner on the requirement that the new owner obtain surface owner consent to leasing? When will this go into effect?**

One of the concerns raised by stakeholders and Members of Congress during the listening sessions was about the potential effect of federal coal exchanges or sales on surface owners.

Owners of surface lands above federal coal deposits must consent to leasing of the federal minerals before the BLM will approve the lease sale. This ensures that a rancher, for example, doesn't unwillingly lose all use of their land for 10 or 20 years during a mining operation and before the land is reclaimed. However, when the federal coal is transferred to another owner through an exchange or sale, currently, the surface owner consent to leasing is no longer required. The BLM recognizes the impact of these situations on surface owners and will issue guidance directing that in situations where the BLM has the discretion to make the sale or exchange, the BLM will condition any such sale or exchange on the new owner obtaining surface owner consent prior to development of the coal. The BLM is working to develop this guidance and expects to issue it in the near term.

**Why is the BLM directing new and readjusted leases to authorize the coal lessee to capture and sell methane, provided it does not conflict with pre-existing oil and gas lease interests? When will this go into effect?**

At underground coal mining operations, the natural gas that is commonly present must be removed from the mine for miner safety. Natural gas is largely comprised of methane, a greenhouse gas at least 25 times more potent than carbon dioxide. Traditionally, mine operators have released the gas into the atmosphere, adding methane emissions that drive climate change. Some coal mine operators would like to capture the natural gas for use or sale, but do not have authorization in their coal leases to capture the otherwise vented waste mine methane for use or sale.

The BLM intends to address this problem by issuing guidance that would ensure that, in situations where the oil and gas has not already been leased or is owned by another party, the operator of the coal mine would be authorized to capture the natural gas instead of venting it, and use or sell it. The guidance would provide that, for new coal leases and at the time of lease readjustments, the standard lease language would include a provision allowing the coal lessee to capture and use or sell that waste mine methane that would otherwise be vented from the coal mine, as long as such gas had not already been leased or is owned by another party. In addition, the BLM would add this language to existing coal leases with the agreement of the coal lessee. The language would not require the coal lessee to capture the gas, but would allow it. The BLM is working to develop this guidance and expects to issue it in the near term.

**ADDITIONAL BACKGROUND**

**What is the BLM's role in the federal coal program?**

The BLM has responsibility for coal leasing on approximately 570 million acres where the coal mineral estate is owned by the federal government. The surface estate of these lands could be controlled by the BLM, the United States Forest Service, private land owners, state land owners, or other Federal agencies. The BLM works to ensure that the development of coal resources is done in an environmentally sound manner and is in the best interests of the nation.

**What laws govern the federal coal program?**

The Mineral Leasing Act of 1920, as amended, and the Mineral Leasing Act for Acquired Lands of 1947, as amended, give the Secretary responsibility for managing coal leasing on

approximately 570 million acres of the 700 million acres of mineral estate that is owned by the Federal Government, where coal development is permissible. The Secretary has delegated her authority for this responsibility to the BLM.

### **How does the BLM determine where to lease?**

Public lands are available for coal leasing only after the lands have been evaluated through the BLM's multiple-use planning process. Leasing federal coal resources is prohibited on public lands, such as military reservations, National Parks, or National Wildlife Refuges. In areas where development of coal resources may conflict with the protection and management of other resources or public land uses, the BLM may identify mitigating measures which may appear on leases as either stipulations to uses or restrictions on operations.

There is a rigorous land use planning process through which all public lands are reviewed for potential coal leasing. Requirements for the land use plan include multiple use, sustained yield, protection of critical environmental areas, application of specific unsuitability criteria, and coordination with other government agencies.

### **How does the leasing process work?**

There are two distinct procedures for competitive coal leasing: (1) regional leasing, where the BLM selects tracts within a region for competitive sale, and (2) leasing by application, where the public nominates a particular tract of coal for competitive sale.

Regional coal leasing requires the BLM to select potential coal leasing tracts based on multiple land use planning, expected coal demand, and potential environmental and economic impacts. This process requires close consultation with local governments and citizens through a Federal/state advisory board known as a Regional Coal Team. However, for decades the demand for new coal leasing has been associated with the extension of existing mining operation on authorized federal coal leases, so all current leasing is done by application.

Leasing by application begins with BLM review of an application to lease a coal tract to ensure completeness, that it conforms to existing land use plans, and that it contains sufficient geologic data to determine the fair market value of the coal. The Agency then prepares an environmental analysis in compliance with NEPA. At the same time, the BLM will also consult with tribal governments and appropriate Federal and state agencies, and will determine whether the surface owner consents to leasing in situations where the surface is not administered by the BLM.

Preparations for the actual lease sale begin with the BLM formulating an estimate of the "fair market value" of the coal. This number is kept confidential and is only used to evaluate the bids received during the sale.

Sealed bids are accepted prior to the date of the sale and are publicly announced during the sale. The winning bid will be the highest bid that meets or exceeds the coal tract's presale estimated fair market value, assuming that all eligibility requirements are met and the appropriate fees and payments are attached (at a minimum, this amounts to the first year's annual rental payment and one-fifth of the amount bid).

### **How are revenues generated through leasing coal?**

The BLM receives revenues on coal leasing at three points: a bonus paid at the time BLM issues the lease; an annual rental payment of \$3.00 per acre or fraction thereof; and royalties paid on the value of the coal after it has been mined.

The royalty rate for federal coal is currently set at the minimum level allowed by statute, 12.5% of the gross value of the coal produced. The 12.5% royalty rate applies to coal severed by surface mining methods. For coal mined by underground methods, the statute provides that the Secretary may establish a lesser royalty rate. By regulation, the BLM requires an 8% royalty for coal removed from an underground mine. The federal government and the state where the coal was mined share the revenues equally.

###

**From:** Ralston, Jill  
**To:** [aniela.butler@mail.house.gov](mailto:aniela.butler@mail.house.gov); [erica.rhoad@mail.house.gov](mailto:erica.rhoad@mail.house.gov); [spencer.kimball@mail.house.gov](mailto:spencer.kimball@mail.house.gov); [Bragato, Brandon; david.watkins@mail.house.gov](mailto:Bragato, Brandon; david.watkins@mail.house.gov)  
**Cc:** [Andrea Nelson](mailto:Andrea.Nelson); [Patrick Wilkinson](mailto:Patrick.Wilkinson)  
**Subject:** Fwd: BLM Testimony for H.R.\_\_\_\_, LOCAL Management Act Legislative Hearing (4/28)  
**Date:** Wednesday, April 27, 2016 7:18:39 PM  
**Attachments:** [BLM testimony HR LOCAL Act Final.docx](#)

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My apologies --

Attached is the **revised version** of BLM's testimony for the April 28 Legislative Hearing on Discussion Draft of "Locally-elected Officials Cooperating with Agencies in Land Management Act" (LOCAL Mangement Act). This revised version corrects a typographical error.

I am very sorry for any inconvenience,

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**Subject:** BLM Testimony for H.R.\_\_\_\_, LOCAL Management Act Legislative Hearing (4/28)  
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**Cc:** [erica.rhoad@mail.house.gov](mailto:erica.rhoad@mail.house.gov), [spencer.kimball@mail.house.gov](mailto:spencer.kimball@mail.house.gov), "Bragato, Brandon" <[brandon.bragato@mail.house.gov](mailto:brandon.bragato@mail.house.gov)>, [david.watkins@mail.house.gov](mailto:david.watkins@mail.house.gov), Patrick Wilkinson <[p2wilkin@blm.gov](mailto:p2wilkin@blm.gov)>, Andrea Nelson <[anelson@blm.gov](mailto:anelson@blm.gov)>

All --

Attached is the BLM's testimony for the April 28 Legislative Hearing on Discussion Draft of " Locally-elected Officials Cooperating with Agencies in Land Management Act" (LOCAL Mangement Act). Also attached is the completed disclosure form.

Thank you,  
Jill Ralston  
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**Karen Mouritsen  
Deputy Assistant Director  
Energy, Minerals, and Realty Management  
Bureau of Land Management  
Department of the Interior  
House Natural Resources Committee  
Subcommittee on Public Lands**

**H.R. \_\_\_\_\_, “Locally-Elected Officials Cooperating with Agencies in Land Management Act”  
April 28, 2016**

Thank you for inviting the Department of the Interior to testify on the discussion draft of the “*Locally-Elected Officials Cooperating with Agencies in Land Management Act*.” This bill prescribes various coordination and collaboration requirements for Federal agencies in their interactions with local communities and Tribes, and includes various other disparate provisions.

The Bureau of Land Management (BLM) works closely with states, Tribes, and local communities to implement its multiple-use and sustained yield mission. The relationships we build with local communities are critical to our ability to successfully manage the vast and often fragmented public lands and the diverse uses they host. BLM employees are proud members of these communities. Frequent communication and close collaboration are hallmarks of our work across the west. By working closely with our state, local, Tribal, and Federal government partners, we improve communication and understanding, identify common goals and objectives, and enhance the quality of our management of the public lands. Consistent with this approach, the Department supports the goals of the discussion draft to enhance coordination and collaboration with local communities and Tribes. However, as drafted, the Department cannot support several provisions of the draft bill that we believe will make it more difficult for the agency to work constructively with local elected officials and our many partners in cooperatively managing the public lands. The Department further finds other provisions of the draft bill to be duplicative of existing processes and therefore unnecessary. The Department would appreciate the opportunity to work with the sponsor and the committee on this legislation.

The Department strongly prefers to testify on bills after they have been introduced. Additionally, we note that this version of the draft bill was provided to the Department just eight days before the hearing date, leaving little time for in depth analysis of the draft bill’s provisions. We are providing preliminary views on the discussion draft, but the Department would like to reserve the right to submit additional comments about this discussion draft or on an introduced bill to more fully develop the Administration’s position as necessary. (The Department defers to the U.S. Forest Service on the bill’s provisions that apply exclusively to the management of National Forest System lands.)

**Background**

The BLM manages over 245 million acres of surface land and 700 million acres of subsurface mineral estate on behalf of the American people. BLM provides robust opportunities for the public to be part of managing these incredible landscapes. In addition to land use planning, the BLM is committed to providing the full environmental review and public involvement



opportunities required by the National Environmental Policy Act (NEPA) and other federal laws for all agency proposals for BLM-managed lands.

Managing the public lands is a tremendous honor for the employees of the BLM, and our work depends on close cooperative relationships with partners and local communities. The Federal Land Policy and Management Act (FLPMA) sets forth BLM's multiple-use, sustained yield mission, and mandates that the agency manage public land resources for a variety of uses, such as energy development, livestock grazing, recreation, and timber harvesting, while protecting a wide array of natural, cultural, and historical resources. To ensure the best balance of uses and resource protections for America's public lands, BLM undertakes extensive land use planning through a collaborative approach with local, state and tribal governments, the public, and stakeholder groups. State and field offices are required to engage their state, local, and tribal government partners consistently and effectively in the preparation or revision of land use plans. These land use plans provide the framework to guide decisions for every action and approved use on BLM-managed lands.

The BLM utilizes Resource Advisory Councils (RACs) in the western States within BLM jurisdiction to provide advice to the agency on the full spectrum of issues in management of public lands and resources. FLPMA gives BLM the authority to establish Federal advisory committees of not less than ten and not more than fifteen members who are representative of major citizens' interests concerning public land use. The RACs have been very successful in bringing diverse and often competing interests together to deal with issues of mutual concern as well as provide oversight of millions of dollars of restoration work and infrastructure improvement to roads and recreational facilities.

The BLM is revising its planning rule as part of the agency's Planning 2.0 initiative, which seeks to make future land-use planning even more collaborative, transparent, and effective. The changes to the planning rule aim to increase opportunities for early engagement by state and local government, Tribes, and other stakeholders in BLM's land-use decision-making, including measures to provide more meaningful participation. Our goal is to make it easier for people to see how their input influences planning decisions. The revised rule also seeks to adopt a broader landscape-scale, science-based approach to managing public lands, and incorporate modern technology into the agency's planning process. The changes to the planning rule will improve our ability to respond to changing environmental, economic and social conditions. The revision recognizes the need to have strong science, early and regular public input, and a landscape-level approach to natural resource management challenges and opportunities.

**H. R. \_\_\_\_\_, “*Locally-Elected Officials Cooperating with Agencies in Land Management Act*”**

Due to the varied nature of the provisions in this discussion draft, this statement will address each of the bill's provisions individually.

## **Title I**

Section 101 requires BLM to enter into an agreement, at the request of the local community, to attend local business meetings for the purposes of reporting ongoing or proposed federal activities and responding to public concerns. As BLM line officers already routinely attend local community meetings to share information about agency activities, we do not believe that a statutory requirement is necessary or conducive to building strong working relationships between land managers and local elected officials.

Section 102 requires that the Secretary extend Cooperating Agency status to the governing body of any affected local community for any forest management, travel management, or other major action. BLM's regulations require the agency to coordinate and cooperate on any project that would affect the local environment under NEPA. In accordance with existing statute, BLM's coordination responsibilities include maximizing consistency with plans of other government entities and providing meaningful public involvement of other Federal, state, local, and Tribal government officials in the development of public land use decisions. One of the most effective ways we coordinate is through granting governmental partners Cooperating Agency status, which affords them a seat at the table as we work together on land use plans and projects. Counties affected by a proposal are already offered Cooperating Agency status, and many choose not to be Cooperating Agencies. Our regulations require coordination even when a formal Cooperating Agency relationship has not been established. For these reasons, we believe this additional statutory requirement to be unnecessary.

Section 103 of the discussion draft makes three key changes to the Resource Advisory Committees established by the Secure Rural Schools Act in the Oregon and California Railroad Grant (O&C) counties. It changes the duties of these RACs from proposing projects to serving as the primary advisory body for the Secretary on forest management (in the O&C and Coos Bay Wagon Road lands for the BLM); reduces through calendar year 2020 the number of members on each RAC from 15 to 9; and requires RAC members to live in the county (or adjacent county) to the federal lands.

The BLM has concerns with each of these changes. First, the draft does not specify what it expects the RAC to accomplish in its role of "primary advisory body" on forest management. Under current law, these RACs recommend restoration projects; this function informs the BLM's managers as they evaluate projects. Also, the current statutory composition of RACs has three categories of community interests represented, with each category having 5 subcategories of interests represented. Reducing the number of RAC members from 15 to 9, while maintaining 3 interests to be represented in each of the three categories, raises the question of which 6 of the 15 interests will be eliminated from representation on the RAC. Finally, current law allows RAC members to be from anywhere in the state. Limiting eligibility for RAC membership to residents of only the county (or adjacent county) in which federal lands are located may make it difficult to provide the necessary composition of a RAC and may exclude important sources of expertise sought by the RAC or the BLM. Finally, the draft bill includes an unrealistic requirement of 90-days for the approval of vacant positions on the RAC.

Section 104, relating to federal acquisition of non-federal lands, would require the Secretary to conduct a study to evaluate the economic impacts of the land acquisition to local communities, as

well as the potential impacts of lost property tax. Under the bill, acquisition of non-federal lands would also require consultation with the local governing body of each affected local community, and a request for a written statement of the position of the governing body on the land acquisition to accompany the project submittal list to Congress. The discussion draft specifies that the Secretary shall give considerable deference to the position of the local governing body for decisions regarding the acquisition of non-federal lands. BLM regulations already require that federal land acquisitions be consistent with BLM's land use plan for the area and be subject to site specific NEPA analysis. The economic impacts to local communities are already among the issues BLM addresses in NEPA analyses for land acquisitions. The BLM believes the additional requirements for studies outside of the NEPA process would duplicate existing efforts and would slow the processing of transactions with willing sellers.

Section 107 requires fee collecting bureaus to notify and solicit comment from the affected local governments for the proposed establishment or increase of a recreation site fee. The draft bill also requires that the Secretary submit to Congress all local government comments received regarding the recreation site fee. Under existing law (the Federal Lands Recreation Enhancement Act), the BLM, the National Park Service (NPS) and Fish and Wildlife Service (FWS) have developed robust civic engagement processes that ensure the public, as well as local governments, have the opportunity to participate in proposed recreation fee rates. The Department believes the draft bill's requirement in Section 107 would be redundant and unnecessarily burdensome, and therefore opposes it.

## **Title II**

Section 201 amends FLPMA to specify the minimum duration of all BLM District office positions to be three years and would require the Secretary to promulgate a rulemaking to enumerate exceptions to that standard. The BLM agrees that stable line leadership is important to effective land management. However, the efficient delivery of government services demands employment policies that promote more nimble and efficient use of scarce employee skills and resources. The BLM assigns personnel based on the employee skills and competencies best suited to meet the program and operational needs of the office. The provision in the discussion draft would hinder the BLM's capacity to deliver mission critical programs and services, potentially including firefighting and emergency response, oil and gas permitting, rangeland management, and recreation planning and visitor services. The BLM opposes this provision.

Section 202 amends the Healthy Forests Restoration Act to require a schedule of implementation for Community Wildfire Protection Plans (CWPPs). CWPPs are an opportunity for local communities to influence where and how federal agencies implement fuel reduction projects on federal lands. The BLM already consults with local, state, and tribal government representatives during the development of CWPPs. The BLM has no objection to this provision.

Section 203 limits NPS ability to accept donations from willing land owners of certain tracts of land immediately adjacent to parks. This change could adversely affect parks by slowing down or stopping a donation which could cause the land owner instead to sell the land. Having flexibility to quickly accept donations along park borders, where local managers have identified a need, allows the NPS to take advantage of opportunities to better protect existing park resources before those opportunities are lost. The NPS opposes this provision.

Section 204 requires that the Secretary take all necessary and reasonable actions to protect and maintain survey monuments located on Federal land from surface disturbing activities. The BLM recognizes the importance of protecting survey monuments and has no objection to this provision.

### **Title III**

Section 301 amends the Tribal Forest Protection Act (TFPA) to establish required time-frames for BLM consideration of, and response to, tribally-proposed projects on BLM-managed land bordering or adjacent to Indian trust land. The purpose of the TFPA is to protect the Indian trust resources from fire, disease, or other threat from the BLM land. The BLM has not experienced a backlog of TFPA requests since enactment in 2004 and does not see the need for the required time-frames.

Section 302 of the discussion draft amends the National Indian Forest Resources Management Act to authorize the Secretary to treat certain Federal forest land as Indian forest land for purposes of planning and conducting forest management activities. Section 302 would apply to all BLM managed forest lands, including O&C and Coos Bay Wagon Road. Also, Section 302 authorizes a 3-party revenue-sharing among a Tribe, the Secretary, and state and county governments of receipts derived from forest management activities on those O&C lands that are managed as Indian forests. The Department notes that the revenue-sharing provision would likely result in a reduction in revenues to the U.S. Treasury, but is reviewing this provision further.

### **Title IV**

Section 401 establishes allotted amounts of funds from the Land and Water Conservation Fund (LWCF) to be used for enhancing public access, describes adjacency requirements and geographic limitations for acquisition of land. Specifically, this provision requires that not less than 33 percent of LWCF amounts may be allotted for the purpose of securing or enhancing public access on existing Federal lands for hunting, recreational fishing, or recreational shooting in any fiscal year. In addition, this section requires that any parcel of land or water to be acquired through the LWCF must abut Federal land on 75 percent or greater of the parcel's border. Finally, this section requires that no more than 15 percent of the acreage acquired through LWCF in any fiscal year can be located west of the 100<sup>th</sup> meridian.

The LWCF is the federal program to conserve irreplaceable lands and improve outdoor recreation opportunities throughout the nation. The LWCF program is a critical conservation tool. Each year, the FWS, BLM, and NPS acquire land from willing sellers in fee title or conservation easement through the LWCF. The acquired lands provide improved habitat for wildlife, and often enhance resource management capability. Fee title acquisitions generate economic benefits for local communities and provide the public with opportunities to hunt, fish, observe and photograph wildlife, and enjoy environmental education and interpretation. This program is regarded as one of the most successful public outdoor recreation and conservation investments in the nation's history. The restrictions prescribed in Title IV would place unnecessary and unduly burdensome restrictions on this extremely beneficial program, including

the effective elimination of the ability of the U.S. Fish and Wildlife Service to create new refuges. As such, the Department strongly opposes this section.

**Conclusion**

Thank you for the opportunity to present this testimony.

**From:** Bragato, Brandon  
**To:** "[Ralston, Jill](#)"  
**Subject:** RE: BLM Testimony for H.R.\_\_\_\_, LOCAL Management Act Legislative Hearing (4/28)  
**Date:** Thursday, April 28, 2016 10:19:34 AM  
**Attachments:** [Testimony\\_Brennan.pdf](#)  
[Testimony\\_Dunshee.pdf](#)  
[Testimony\\_Tipton.pdf](#)  
[Testimony\\_Weldon.pdf](#)

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Here is the witness testimony. See you this afternoon.

**From:** Ralston, Jill [mailto:[jralston@blm.gov](mailto:jralston@blm.gov)]  
**Sent:** Wednesday, April 27, 2016 7:18 PM  
**To:** Butler, Aniela; Rhoad, Erica; Kimball, Spencer; Bragato, Brandon; Watkins, David  
**Cc:** Andrea Nelson; Patrick Wilkinson  
**Subject:** Fwd: BLM Testimony for H.R.\_\_\_\_, LOCAL Management Act Legislative Hearing (4/28)

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I am very sorry for any inconvenience,

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Sherrri Brennan  
Supervisor District #1  
County of Tuolumne, California

Testimony for the Subcommittee on Federal Lands

**“Locally-elected Officials Cooperating with Agencies in Land Management Act”**

Thursday April 28, 2016

Mr. Chairman and members of the subcommittee:

Good afternoon. Thank you for the opportunity to speak on this very important subject, improving Coordination and cooperation between the United States Forest Service, the Bureau of Land Management, local communities, and Indian tribes, regarding the management and use of National Forest System lands and public lands.

Tuolumne County lies within the heart of the Central Sierra Nevada Mountain range. According to the 2010 census the county has a total area of 2,221 square miles. Tuolumne County is just slightly smaller than the state of Delaware. Of Tuolumne County's 1,030,812 acres, 75% is federal lands and includes large portions of Yosemite National Park, the Stanislaus National Forest (SNF), and Bureau of Land Management (BLM) lands.

Local government is charged with the responsibility to protect the local tax base and the value of private property, and to promote economic stability. We provide for public safety and the well being of the local community, both for our residents and the visitors to our county. In Tuolumne County these critical functions are entangled with federal land management decisions. Unfortunately the process for managing our public lands is broken, and is manifested in the frequency and size of catastrophic wildfires, as well as the decline in economic vitality in our rural county.

A brief history of the Stanislaus National Forest Land Management Plan decisions and the resulting implications to our county is important for perspective on the vital importance of Coordination to Counties. My example will refer to timber harvest, however similar implications can be applied to all of the multiple use activities including, but not limited to recreation, travel management and grazing.

The Stanislaus National Forest Plan under the 1976 National Forest Management Act (and its 1982 version implementing regulations) was completed in 1991. The plan assigned 487,982 acres of productive forest land as available for active forest management (i.e. including timber harvest). This productive forestland grows at the rate of 222 million board feet (mmbf) per year (attachment #1 and #2). The assigned average annual allowable sale quantity from those lands is 146 mmbf (Stanislaus National Forest Plan, 1991, pg 8). From 1980-1990 the Stanislaus National Forest sold 132.7 mmbf annually. Under the 1991 Plan (the basis since for SNF growth



removal), the Stanislaus National Forest on average has sold a mere 34.5 mmbf annually from 1991-2015. This precipitous decline was statewide on the national forest lands. (Attachment 3). Tuolumne County did not have a local Coordination Plan in place prior to 2012 (The Tuolumne County Land Use Plan). Consequently any communication with the Forest Service which occurred during the 1991 Forest Plan revision and the 2001 Sierra Nevada Framework update was not Coordination. The following has resulted:

There are 6.4 direct jobs and 12.8 indirect and induced jobs per million board feet harvested (2001 McKillop “Economic Impacts of Revised 2001 Ancient Trees Initiative”.) The precipitous 74% decline in sold volume cost our local area 629 direct jobs averaging \$50,000/year per job, and 1,188 indirect and induced jobs at \$30,000/year per job. Due to the decline in timber harvest on the Stanislaus, the local area has lost an estimated 1,800 forest related jobs and an approximate loss of economic payroll activity in excess of 65 million dollars. As an example, in 1995 the Fiberboard plywood plant in Tuolumne County at Standard closed. The plant employed 170 people, each with a living wage job.

The national forest of the Sierra Nevada can sustain 20-100 trees per acre, depending on slope, slope position, and aspect. Due to poor, inadequate forest management, which included the lack of massive growth removal, over the past 25 years the tree density has dramatically increased to an average 278 trees per acre. Fast-forward to the summer of 2013 where we had the confluence of drought, hot dry weather and most importantly an overgrown national forest, and the perfect storm was created in Tuolumne County. The National Disaster Rim Fire was in our backyard.

The Rim Fire burned for over 2 months, and is the largest timber fire to occur in California history; burning over 257,000 acres totaling 402 square miles with fire suppression cost of \$127 million dollars. Recreation, one of the current economic drivers in Tuolumne County, came to a virtual halt for the remainder of 2013 and well into 2014, particularly on the Highway 120 Groveland corridor serving the North Gateway to Yosemite National Park.

An assessment generated by Earth Economics “The Economic Impact of the 2013 Rim Fire on Natural Lands”, reported that the first year after the Rim Fire, environmental benefit losses would range from \$100 million to \$736 million dollars on National forest lands. Additionally the estimate of direct damage to environmental benefits provided by private lands and loss within the Rim Fire perimeter was estimated at \$10 million to \$62 million. The fire-related private property loss was estimated between \$49.7 million to \$265 million. A supplemental analysis was used to compare pre-fire carbon storage with post-fire carbon storage. The value of the total carbon storage loss was estimated at \$102 million to \$797 million dollars. The authors of the report stated that because only 10 environmental benefits were valued of the 18 that were identified, this value range signifies a “below basement” appraisal, an underestimate of the true range of damages. (Summary pg. 2) The collective loss of environmental benefits on the national forest and private property, combined with the loss of carbon storage and the loss of private property, resulted in the Rim Fire impact ranging from an underestimated low of \$262 million dollars to \$1.8 billion dollars.

The California drought, coupled with the grossly overgrown national forest, means we are now facing a catastrophic insect epidemic, which began on the Sierra and Sequoia National Forests

and has marched north to the Stanislaus and Eldorado National Forests. In the fall of 2015 the Sierra National Forest measured 60% of their pine vegetative stands as dead. They anticipate 85% of their pine vegetation type is dead today. USFS Region 5 reported up to 14 million dead trees in April of 2015, growing to 40 million at the end of 2015, and now estimated as high as 73 million. This disaster crosses all boundary lines: USFS and BLM, state lands and private property. While I implore the federal government for a national emergency declaration, that is not the topic of discussion today.

I have been invited to discuss the unprecedented need for improved Coordination (as defined in federal law) between locally elected officials, USFS, BLM, and Indian tribes. Tuolumne County has lived with the Rim Fire Disaster and now the Pervasive Tree Mortality Disaster because Coordination was not requested or offered in either the 1991 Stanislaus Forest Plan revision or the 2001 Sierra Nevada Framework. We are living with the consequences of diminished timber infrastructure and workforce resources.

We continue to hear from the USFS that they are incapable of harvesting over 30 mmbf off of the Stanislaus due to restrictions within their land use plan. They have presented this with a series of overlay maps. The first map shows the entire national forest. This is followed by the lands, which are “physically suitable for harvest”, and then the “mature, physically suitable for management”. The following overlays take out “Designated Wilderness and Wild and Scenic Rivers”, “recommended or proposed Wilderness and Wild and Scenic Rivers”, “Near Natural” areas, “special areas and developed recreational areas” (RNA’s), “Owl and Goshawk protected activity centers” (PAC), “Old Forest Emphasis Areas” and lastly “Wild Land Urban Interface Areas” (attachment #4). All of these special designations have not been managed with a timber harvest for over 25 years, which has only increased the fire susceptibility of the area.

Sadly the Rim Fire devastated portions of the Emigrant Wilderness, the majority of the Tuolumne Wild and Scenic River, and the proposed Clavey Wild and Scenic River which burned with such intensity that it will never recover naturally. Near Natural areas, and Old Forest Emphasis Areas, now stand devoid of any live trees. The Rim Fire Burn Area Emergency Response team (BAER) reported 46 Spotted Owl Activity Centers (21% of the SNF total), 25 Goshawk Activity Centers (26% of the SNF total) and 13 Great Grey Owl Activity Centers (52% of the SNF total) were affected within the Rim Fire perimeter. The lack of timber management for more than 25 years means we have all lost: The Tuolumne County economy has lost, the citizens have lost peace of mind and the right to pursue constitutionally protected rights, the environment has lost air and water quality, and either directly or indirectly, we have all lost. Natural disturbance agents, predominately wildfire, insect and disease have taken over management of the National Forest in Tuolumne County and in the State of California.

Today Tuolumne County has a Coordination document in place, and wants meaningful Coordination with both the USFS and the BLM, as directed by the National Environmental Policy Act (NEPA). Coordination will be requested when the Stanislaus National Forest engages in the Stanislaus National Forest Land Management Plan update. USFS Region Five has suggested the land planning revision could start in 2017. That process is expected to take several years to complete and then must pass through the objection period. Tuolumne County cannot continue to wait idly for the opportunity to Coordinate, all the while putting our community and

the environment at risk. There was 10.9 billion board feet of standing volume on the Stanislaus National Forest prior to the Rim Fire which consumed 0.5 billion board feet. There is currently about 10.4 billion board feet of standing volume. At today's average lumber value of \$340/mbf that is a monetary value of 3.5 billion dollars. It is time to reverse years of inadequate forest management and return to meaningful, responsible management that will ensure both monetary and social benefits, as well as environmental health for the land and animal species.

Non Government Organizations (NGO's) represent special interest and often interject supposition into the land management process used by the USFS and the BLM. Special interest groups have a place in land management discussions, however today both the USFS and the BLM are reactive in their land management decisions because single-issue activists have hijacked the process utilizing the courts and equal access to justice for the sole purpose of being obstructionists. The land management decision process must strengthen local government Coordination and the USFS and BLM must be accountable for insuring local Coordination is achieved.

This proposed legislation recognizes the important participation by a variety of local interest groups represented on Resource Advisory Committees (RAC's). RAC's appointed by local county government and confirmed by the Secretary of Agriculture, are an important asset for local government and this legislation confirms and expands their role in Section 103.

Of particular interest to Tuolumne County is the language in Section 102 "Improved Federal Land Management Agency Coordination with Governing Body of Affected Communities." Congress specifically set forth, with minimum requirement for Coordination in federal law, and did not leave this subject to revision through the rule making process by the federal agencies required to carry out this duty.

Through this section of the Federal Land Policy and Management Act, Congress defined five essential elements of Coordination that federal agencies are required to fulfill:

1. Keep apprised of state, local and tribal land use plans;
2. Assure that consideration is given to local plans when developing a federal plan, policy or management action;
3. Provide early notification (prior to public notice) to local government of development of any plan, policy or action;
4. Provide opportunity for meaningful input by local government into development of the plan, policy or action; and
5. Make all practical effort to resolve conflicts between federal and local policy, and reach consistency.

We see this legislation as an opportunity to improve Coordination with the USFS and the BLM, particularly if the agencies are accountable for Coordinating.

I conclude with a seldom-referenced quote from Gifford Pinchot, considered the father of the United States Forest Service:

*"The object of our forest policy is not to preserve the forests because they are beautiful-or because they are refuges for the wild creatures of the wilderness-but the making of prosperous homes-every other consideration becomes secondary."*

In Tuolumne County healthy forests, prosperous homes and community safety need to be synonymous.

**Enclosure #1**

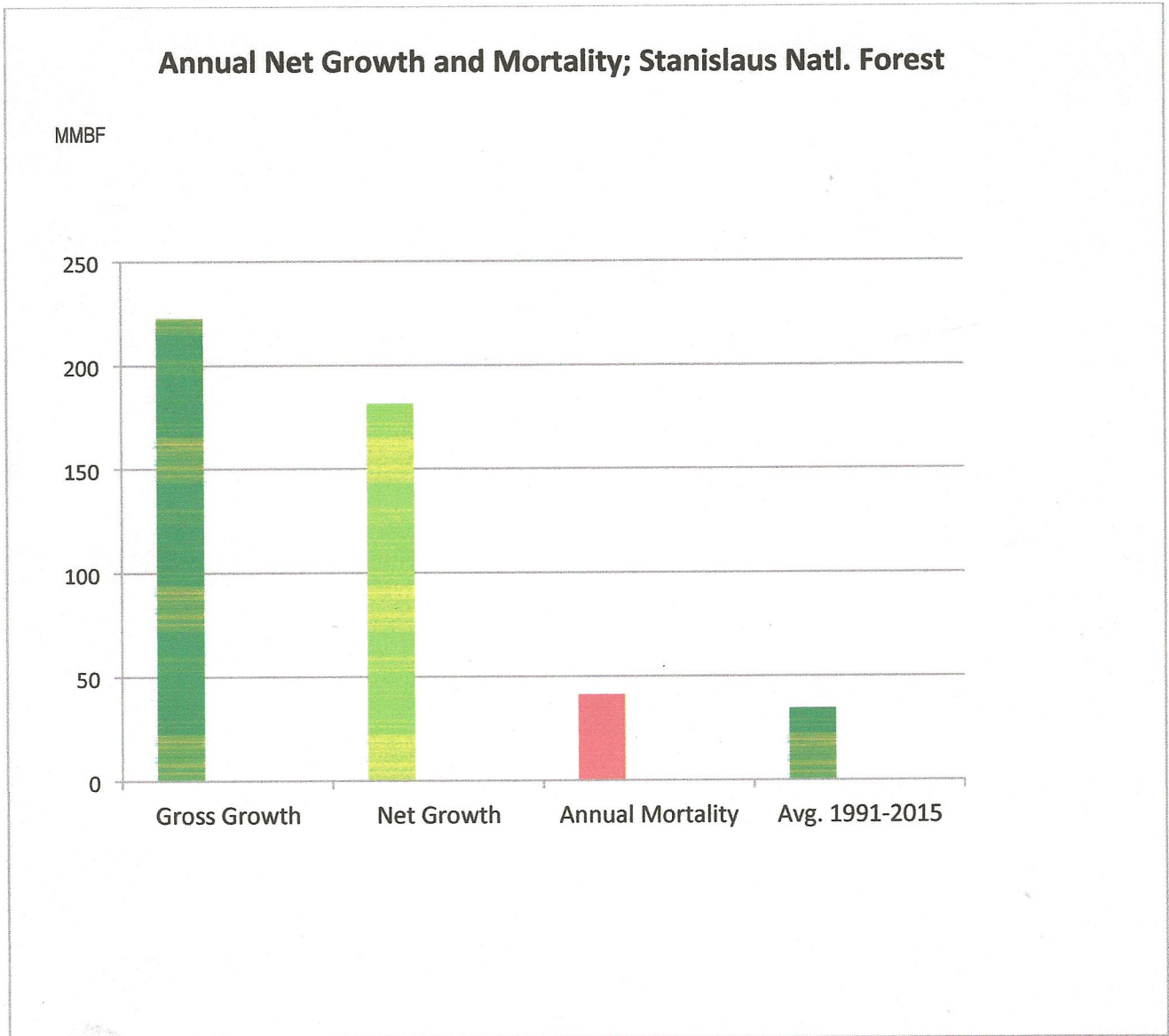
**Stanislaus National Forest Facts and Figures**

<b>Total Acres</b>	896,993	
<b>Acres Forested</b>	745,607	
<b>Acres Not Forested</b>	151,386	
<b>Acres of Productive Forestland</b>	620,547	
<b>Acres of Non-Productive Forestland</b>	125,060	
<b>Acres of Productive Reserved</b>	132,565	
<b>Acres Productive Not Reserved</b>	487,982	
<b>Tentatively Suitable Available Productive Forestland</b>	385,691	
<b>Softwood volume in growing stock (&gt;5" dbh) on productive forestland</b>	10,878.78	mmbf
<b>Average # of Trees/acre on productive not reserved forestland</b>	278	

**Annual net growth = 0.37 mbf/acre on productive not reserved  
(1.7 tons/acre/year of new growth)**

**(Source: Forest Service Region 5 Westcore Datatables)**

**Enclosure #2 – Stanislaus National Forest Annual Net Growth & Annual Mortality (million board feet)**



**Stanislaus National Forest**

**Gross Annual Growth 222.5 million board feet/year**

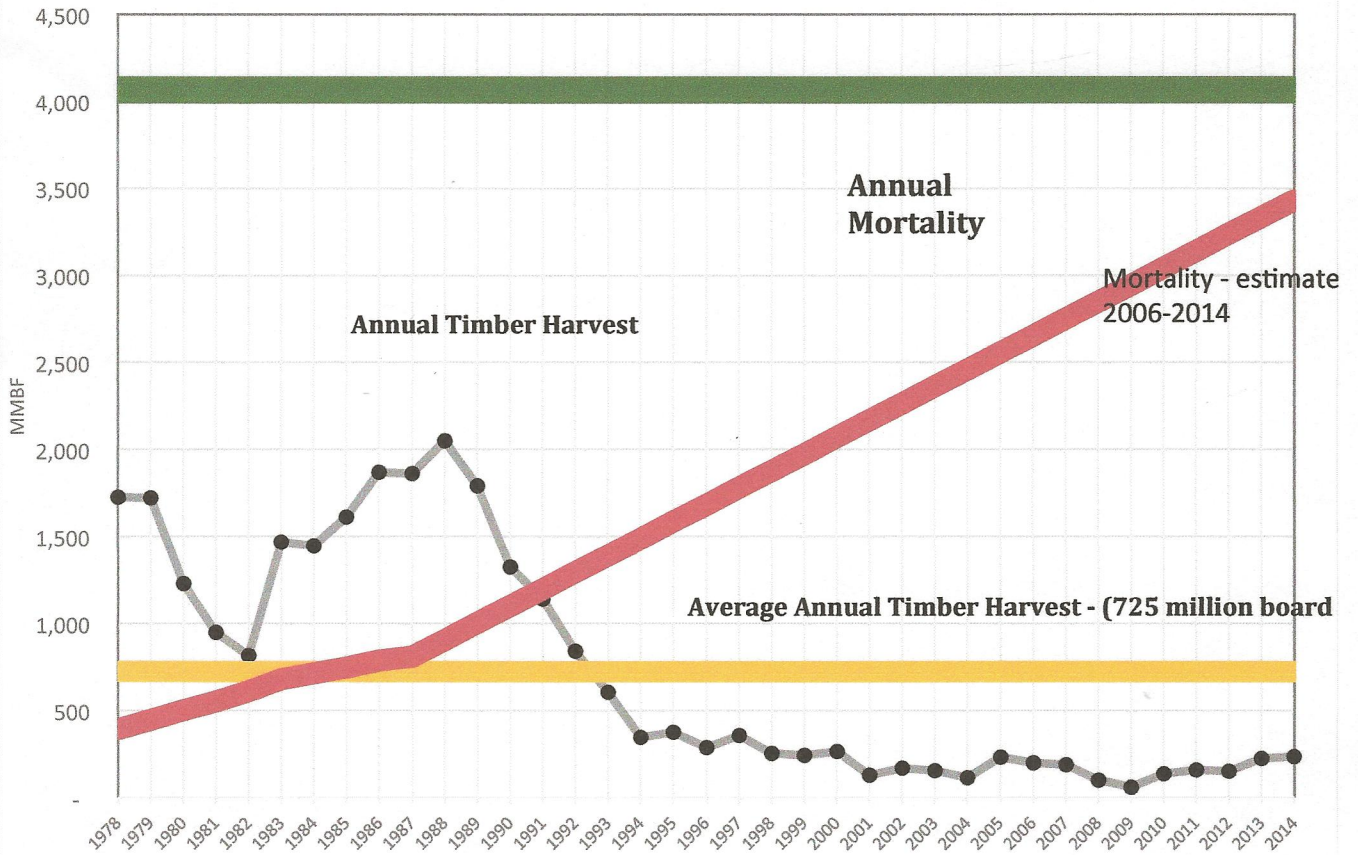
**Annual Mortality 41.1 million board feet/year**

**Average Sold annual volume 1991-2015 = 34.5 million board feet per year**

**Enclosure #3 – Statewide National Forest Growth, Mortality, and Harvest**

**California Public Timberland Growth, Harvest and Mortality (Billion Board Feet/Year)**  
**Timberland = 9,635,200 acres**

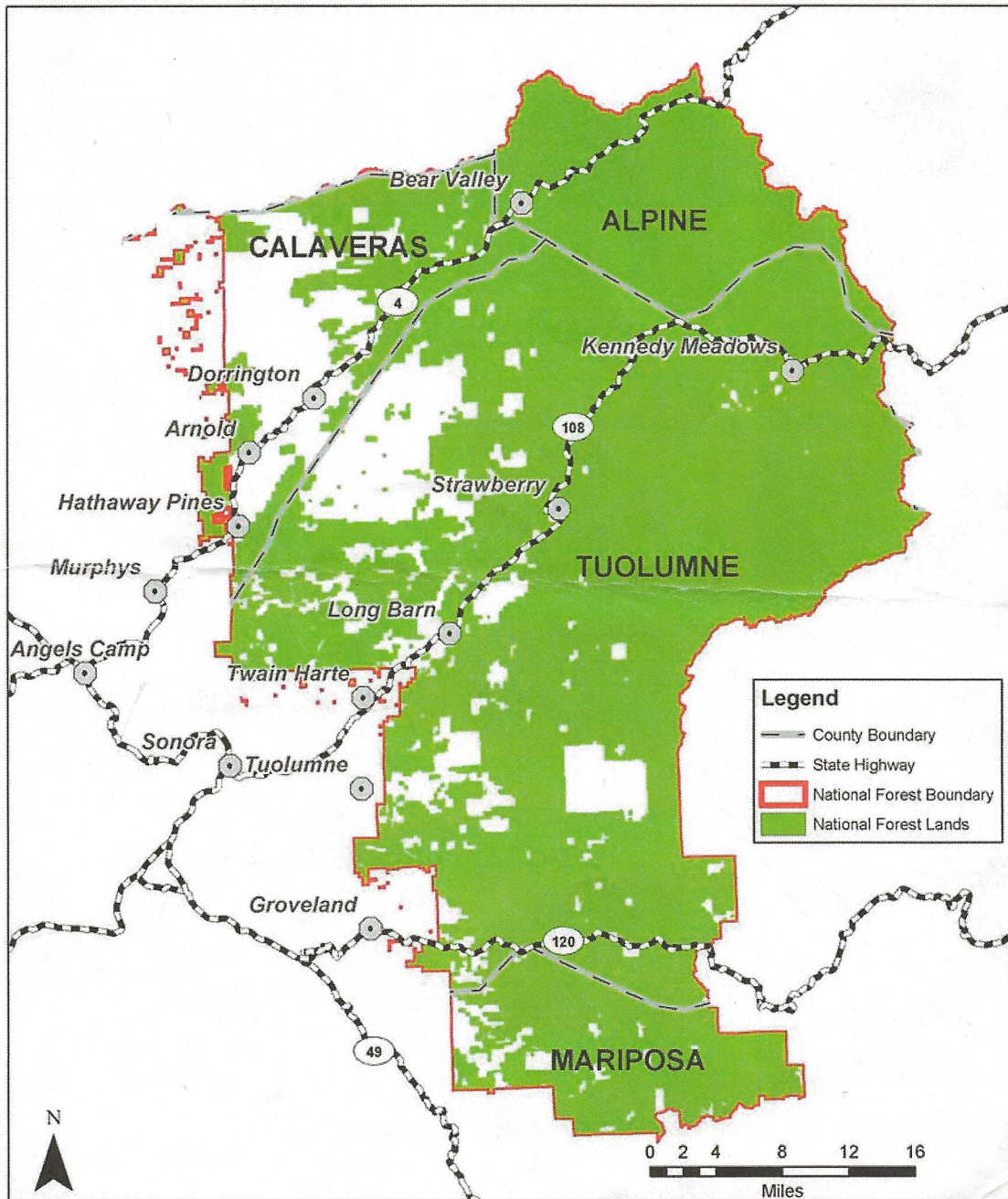
**Average Annual Gross Growth - (4.07 billion board feet/year)**



ources: California Board of Equalization Harvest Statistics; U.S. Forest Service FIA 2001-2010 plot data; PNW-RB-058

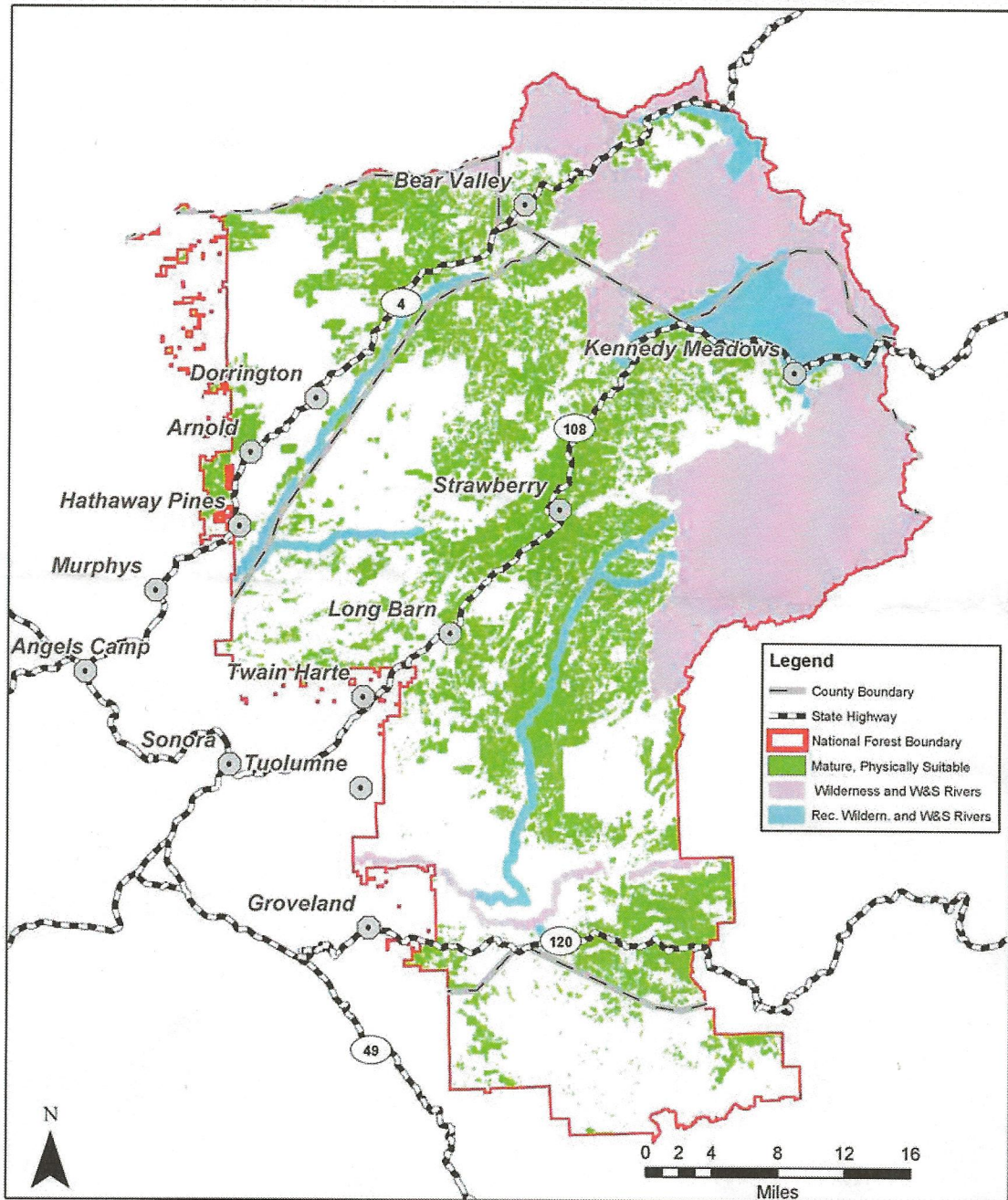
- Annual Timber Harvest 1978-2014 (MMBF)
- Average Annual Timber Harvest 1978-2014 (MMBF)
- Average Annual Gross Growth (MMBF)

STANISLAUS NATIONAL FOREST  
NATIONAL FOREST LANDS WITHIN THE PROCLAIMED BOUNDARY

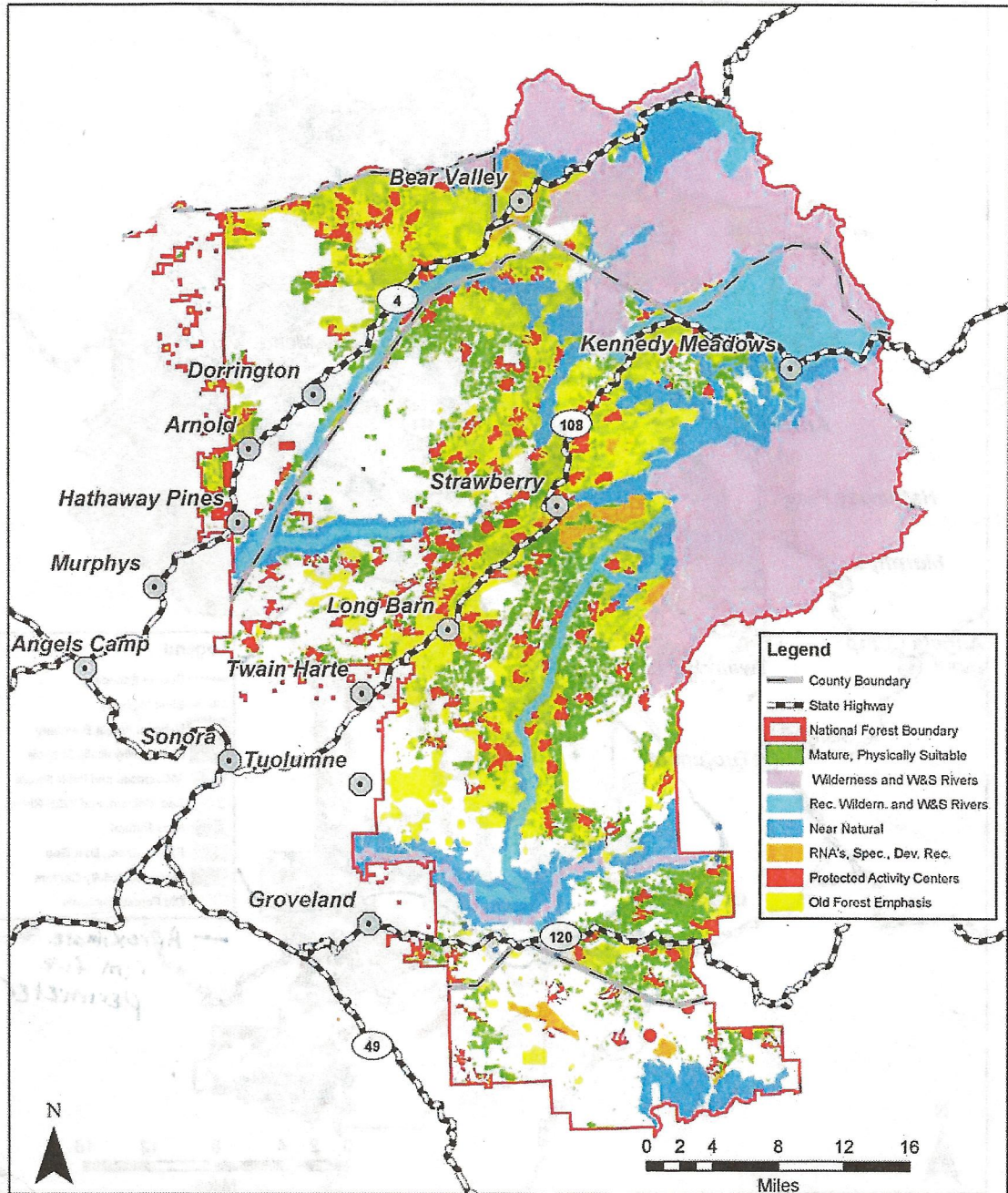




# STANISLAUS NATIONAL FOREST RECOMMENDED WILDERNESS AND W&S RIVERS



STANISLAUS NATIONAL FOREST  
 OLD FOREST EMPHASIS AREAS



Committee On Natural Resources

Legislative hearing on a discussion draft of the LOCAL Management Act on April 28,2016

Councilmember Hans Dunshee

Snohomish County, District 5

Chairman McClintock, Committee Members, thank you for the opportunity to testify before you today.

I have some areas of concern I would like to share with you, and some areas I want to complement you on.

First I want to address the relationship with the federal workers on the ground in my county. Nearly half of my county is federal land - 46 percent. The district I serve, which is largely rural, is a far greater percentage. From Department Heads to the Sherriff's office we have near daily interactions with federal employees. I can't find an instance, and I talked to folks who work in the departments of my county and they don't remember the federal people not being responsive. At the state level, where I have also worked, I can say the same.

My community greatly benefits from the work they do and the lands they manage. I have submitted for the record a document titled "*Economic Analysis of Outdoor Recreation in Washington State*". In it you will find that expenditures and economic contributions resulting from public lands bring between \$500 million to \$1Billion to Snohomish County. My friends to the east, in Spokane County, receive an even great benefit, \$1.24 billion in 2015. Overall, outdoor recreation trip-related expenditures associated with recreation on public lands in Washington amount to about \$10.7 billion per year (excluding equipment).

After accounting for leakages of spending on items not produced in Washington, outdoor recreation accounts for \$20.5 billion in economic contributions, \$4.6 is flowing into the economy from out-of-state.

When I received the invitation to testify on this legislation I happened to be in a meeting with the Director of our Parks Department. We are currently working with the Forrest Service on a proposal that will bring a camping site to the town of Index. Our Parks Department meets quarterly with the Forrest Service, Washington State Department of Natural Resources and a number of local government officials. The collaboration is there and we are very appreciative of it.

I also want to express the importance of LWCF funding to my local community. I have submitted for the record the document titled "*Land & Water Conservation Fund, Fifty Years in Washington State*". In it you will find a list of LWCF funded projects in my county. These range from parks on our saltwater shorelines, which are some of our busiest recreation areas, to little league baseball and softball fields. Limiting these funds, or placing additional barriers to access, would have a negative effect on the community I serve.

I would like to take a moment to address specific sections of this legislation.

Sec 104

This section appears to place unnecessary limitations on an individual's ability to sell their private property. I don't believe a county government should be able to restrict a citizen's right to sell their

property because the buyer happens to be a federal agency. Sometimes the only viable buyer may be the federal government.

Inholdings, which are in my county, cause conflicts when hunters, fishers, and hikers think it's public land. Federal land protection projects can benefit private property owners and public users. I would caution against placing additional barriers on the process.

I would applaud the requirement of a study of the economic impacts of public land. There is no shortage of claims about the positive and negative impacts of the public owning land. There is lack of bipartisan, objective and verifiable facts. In my previous work as a state legislator I worked with my Republican Senate counterpart to have authored a study titled "*JLARC Final Report: State Recreation and Habitat Lands*", which I have submitted for the record.

I have also submitted a letter from Senators Ron Wyden and Amy Klobuchar, calling on the Interior and Commerce Departments to conduct a national report detailing the economic benefits of our country's outdoor economy. I would encourage this committee to also pursue this information.

Sec 105

We have had the debate about roads and value on state lands in my state. Closing roads allows money in a budget to be shifted to things such as fire prevention, where funds are desperately needed. Certainly, as I have dealt with these issues, I wouldn't want to prevent a solution that might save the government money. We all know how tight budgets are.

Sec 201

I agree that constant moving of staff can have negative effects but an employee who needs to move or economic or family reasons should have the ability to take care of their family.

Sec 202

Since this section mentions fire, and tries to do something about it, let me say that any plan has no value without money. My county is a wet costal county, and fire, at least until now, has not been a great concern. But I want to speak a little for my fellow county commissioners on the dry side of the mountains. Nothing they dealt with was as great and tragic as fire this last year. Houses burned, lives lost, families up rooted and business destroyed. It is going to take more resources from the federal, state, private, tribal, and counties to get the ground fuel out of the forest. No amount of fire suppression will solve the problem, it just leaves it for later.

The changes to plans could be helpful but the communities simply need more resources. Hopefully we do not get bogged down in another fight over the big trees, which are not the problem in fires, it is the fuel on the ground, and it should be addressed immediately.

Sec 203 and 401

I am concerned about the restriction on the federal agencies ability to acquire land for public use. I want to take on directly the myth that public and federal land harms local economies. Public land is a job creator in my rural areas. In fact, Federal land is a job creator. While at the state we did a couple of studies on this subject because rural economies and communities need to be healthy and secure. I submitted them as written testimony. They show positive value for rural economies. Public land is of the

people, by the people, for the people. It is a uniquely American idea and we should not let it perish.

The 15 percent restriction hinders our ability to address our community and job creation needs, I would ask you to give my county the same ability as eastern communities.

The 33 percent number seems odd and redundant. The vast majority of this land is accessible to hunters and fishers, I worry that number would become a ceiling in our thinking. I think the existing program does pretty well by people who want to hunt and fish so I would ask caution on limits. I have seen estimates from the Theodore Roosevelt Conservation Partnership that as much as 72 percent of sportsmen depend on public land for hunting.

The program works for counties like mine, it creates opportunities and jobs. The economic value is clear, the more people come, the more money they leave in my communities. I would ask you to be cautious in changing a good thing.

Thank you.

Councilmember Hans Dunshee  
Snohomish County, District 5

**Statement of**  
**The Honorable Jerrie Tipton**  
**Chairman, Mineral County, Nev., Board of Commissioners**

**Before the**  
**Subcommittee on Federal Lands**  
**Committee on Natural Resources**  
**United States House of Representatives**  
**April 28, 2016**

Chairman McClintock, Ranking Member Tsongas and members of the Subcommittee, thank you for the opportunity to testify today on the Locally-elected Officials Cooperating with Agencies in Land (LOCAL) Management Act of 2016, proposed legislation to improve coordination and cooperation between federal land managers and local governments.

My name is Commissioner Jerrie Tipton. I am the Chairman of the Mineral County, Nevada, Board of Commissioners and an active member of the National Association of Counties' Public Lands Steering Committee and Rural Action Caucus. Mineral County is located in Western Nevada, approximately 300 miles north-west of Las Vegas. We have a population of 4,478 residents and a land area of just over 2.4 million acres. Of those 2.4 million acres, the Bureau of Land Management (BLM) manages nearly 1.6 million acres of our land. Another nearly 400,000 acres is managed by the U.S. Forest Service (USFS) – in total, over 2 million acres of our county's land area is managed by BLM and USFS. In addition, the federal government holds over 170,000 acres of my county as a military reserve and more than 330,000 acres in trust as Indian lands. To put that in perspective, the BLM and Forest Service together manage an area of our county more than two times the size of Rhode Island. All totaled, our federal lands are as large as Rhode Island and Delaware combined.

My husband and I have livestock grazing permits on BLM lands administered by the Carson City, Nevada District Office. We also have a business that supports exploration drilling in our region of Nevada, most of which is done on BLM or USFS administered land. Over the past 26 years, we have worked to achieve some amazing reclamation results on mine waste land and leach pads in Nevada and Arizona.

As a county commissioner in a public lands county and as someone whose family makes their livelihood working our western lands, I know firsthand how important it is for federal land managers to work with local communities. Public lands counties provide essential law enforcement, search and rescue, public health and many more services on public lands. Our citizens travel on roads across federal land to get to work every day and many families make their living working the lands. Those that live, work and raise their families in my community know that we are all linked to the land. When management decisions are handed down from offices in Washington, DC, they impact more than just the federal lands, they impact our community's economy and way of life.

County commissioners can be invaluable allies to federal land managers, providing a real-time, on the ground perspective that can help to avoid many of the pitfalls caused by distant land management decisions made in far-off offices. Local governments are at the forefront of protecting both our citizens and the environment. As my colleague, Sublette County, Wyoming, Commissioner Joel Bousman, testified last week before the House Oversight and Government Reform Interior Subcommittee,

“Federal and even state agencies can sometimes be hindered by the narrow focus of their particular agency mission. Industry and non-governmental organization (NGO) stakeholders take a narrow view. But by the very nature of the charge of the office, a county commissioner must take into account the health and welfare of their entire county: its people, land, water and wildlife.” As a partner with federal and state land managers in this pursuit, counties want practical federal policy that work at the local level of government.

The LOCAL Management Act of 2016 includes several common sense provisions that, if enacted, can help to create stronger lines of communication between local governments and federal land managers, provide opportunities for cooperation between the federal government and local communities and ensure local government involvement in federal decision making by:

- Greater levels of cooperation and keeping land managers in communities builds accountability;
- Land managers should regularly attend local government meetings and engage their communities; and
- The economic impacts of federal land acquisition must be studied and local governments must be consulted

#### **Greater levels of cooperation and keeping land managers in their communities builds accountability**

First and foremost, this bill creates accountability. In my experience, the public lands communities that accomplish the most and conflict the least with their federal partners are the ones that foster an open, collaborative and accountable dialogue between land managers and their commissioners. When county commissions, and the public, are regularly updated on land management activities and provided an opportunity to engage in dialogue with federal officials, areas of cooperation can be identified and problems can be solved collaboratively without the need for litigation.

Land management decisions must balance many ecological, economic, historical and cultural factors and, in my experience, the management decisions that strike the best balance are those made by land managers with a deep understanding of the landscape and local community. This understanding can only be built over time by being “on the land” and building trust within a community.

I know firsthand the benefits of collaboration and consensus building. In 1988, my family had livestock permits on both USFS and BLM lands near Austin, Nevada in Lander County.

In 1989, we began to manage public and private lands in Lander County using a new concept, adopting holistic management principles on all the lands on which we had livestock. We formed a management team that included federal agency personnel, local mine management, the Nevada Department of Wildlife, individuals representing various environmental groups, local townfolk, representatives from various universities and neighboring livestock permit holders that wanted to participate. We began to make management decisions collaboratively, with all members of the team having an equal say in how the land was to be managed, regardless of ownership. We managed on an allotment wide, watershed basis, including private land holdings.

Each team member was accountable to the rest of the team and we all took responsibility for actions taken and decisions we, as a team, made. Within three years the land began to respond in a positive way with increased water flows in the streams and greatly enhanced wildlife habitat and forage. By working together, our team was able to build an extremely high level of trust that allowed us to

collectively improve our landscape. However, trust and teamwork are “living” entities that must be continually fed by all participants.

This brings me to the second part of the story and another item the bill gets right: In order to build consensus and foster collaboration, land managers must be in place long enough not only to develop a plan but also implement it.

Five years into the process, the Nevada USFS office received some complaints about a few of the decisions our team had made. Although the District Ranger Office was very pleased with our “people and land” based decisions and the results we were achieving, the State Office determined that our collaborative had to be stopped. As a result, the collaborative “folded our tent” moved on to other pastures and took the positive progress we had made with us.

We moved our livestock operation to the winter country near Mina, Nevada. At the same time, we began to work with officials from the Carson City BLM office to craft an Environmental Assessment (EA) to restore rangeland and watersheds in the Carson City District using the same holistic principles.

While the EA was being developed, our collaborative was implementing our consensus-driven management actions using livestock and equipment on the winter allotment and on an adjacent allotment. Once again, we continued to achieve positive results, reducing bare ground, increasing vegetation growth and improving wildlife habitat on as little as 3.5 inches of moisture in the low country and 7 inches of moisture in the high country annually. As a result of our consensus-driven active management of the vegetation and soil, we began seeing more water flowing from the land’s natural springs longer into the year – a win-win for the landscape and those of us who work it.

Eventually, the EA in support of our consensus-driven restoration approach was signed. Although we looked forward to many years of collaboration, unfortunately, due to staff turnover, retirements and transfers, we lost many of our BLM team members. The new officials coming in to fill the vacant positions had no desire to continue as a part of our collaborative and we were informed that the EA was being revoked. In short, due to staff turnover and institutional inertia, our consensus-driven collaborative approach to land management was shot down in favor of a return to business as usual.

For the past 28 years of my private life in Nevada, I have dealt with both USFS and BLM offices in pursuing our business goals. I have had very productive relationships with federal land management agencies and very confrontational relationships at times. Through it all, I know one thing to be true: When people and interests come together and work to identify their commonalities before they begin to fight about their differences, when trust and communication are the driving forces in management decisions, and when responsibility and accountability for actions by the land user and local management team are fostered and encouraged, there is far less conflict between parties.

Ensuring land managers remain at their duty station for a minimum of three years will give federal employees the time they need to truly understand the land, join the community and understand the needs of the region. Perhaps more importantly, becoming part of the community will enable land managers to build the kinds of relationships that can only be built over time and that are so crucial to successful collaboration.

**Land managers should regularly attend local government meetings and engage their communities**



This bill builds on, and strengthens, existing authorities that give county governments a seat at the table in land management decisions as cooperating agencies. As co-regulators and intergovernmental partners in land management, counties have a significant interest in engaging with land managers to provide local information and analysis to help craft land management decisions. National Environmental Policy Act (NEPA) regulations allow federal agencies to invite tribal, state and local governments to serve as cooperating agencies in the preparation of an environmental impact statement (EIS). Engaging as a cooperating agency allows county governments to be more than just another member of the “public”; it means a seat at the table and an opportunity to help shape a management decision as one of the decision makers.

In many cases, the onus is on the county to identify federal actions that may impact them and take all the steps necessary to initiate a cooperating agency agreement. Unfortunately, local staffing and budgetary realities mean it is simply unrealistic for the federal government to expect county governments to sift through hundreds of pages of federal publications every day and identify each agency action that may impact them. The LOCAL Management Act offers a common sense solution to this problem by requiring land managers to notify in writing local communities that could be impacted by agency actions and offer them a seat at the table as a cooperating agency.

I have been a county commissioner for more than nine years. When I was first elected, Mineral County’s relationship with the BLM and USFS was almost non-existent. Of our county’s federal land, a portion is administered by the Inyo National Forest in Bishop, California, a portion is administered by the Humboldt-Toiyabe National Forest in Bridgeport, California and the remainder is BLM land administered by the Stillwater Field Office, Carson City District. I don’t know why there was such weak relationship between these offices and our county when I was elected. But sometimes I wonder if, because of the distance between us, federal officials at the time never thought to make the drive and meet our county commissioners face to face.

About a year after I was elected it was discovered that the Inyo National Forest was in the final stages of preparing a Travel Management Plan in our county. Unfortunately, due to the lack of communication resulting from our poor relationship, Mineral County had not been notified the exercise was occurring and we missed our opportunity to engage as a cooperating agency.

To ensure what happened then doesn’t happen again, over the last four or five years our county has held regular meetings with USFS personnel from both forests. Our area manager for BLM’s Stillwater Field Office now appears regularly at Mineral County commissioner meetings to report on what BLM is doing in the county. This change in relationship occurred because my fellow commissioners and I insisted that Mineral County become active as a cooperating agency with those entities. While we certainly value the outreach that is occurring now, I believe the outreach should have occurred long ago as a regular part of the federal government’s engagement with its intergovernmental partners.

Although we as a county are sometimes concerned that local government input is given the same weight as that of NGOs, Mineral County is engaged as a cooperating agency with the Carson City District of the BLM’s Resource Management Plan amendments. As a cooperating agency, the county has the opportunity to engage in the planning process and the ability to provide information directly to the agency on how the county would like the lands within our borders managed.

Federal agencies engaging in cooperative dialogue with local communities is just common sense. Unfortunately, the current practice is to make this kind of engagement a discretionary activity for the

agencies. The sad fact is many federal officials simply choose not to engage. This is one problem the LOCAL Management Act helps to solve. This bill makes it clear that engaging, becoming a part of a community and consulting with those that are directly impacted by federal land management decisions is not going the extra mile, it is the bare minimum the federal government can do.

**The economic impacts of federal land acquisition must be studied and local governments must be consulted**

Finally, the discussion draft of the LOCAL Management Act before the committee today takes a positive step toward assessing the true costs of federal land acquisition, not just for the federal government but also for the impacted counties in which the land is located. Sixty-two percent of counties nationwide have federal land within their boundaries and in each case those county governments provide important local services to federal public lands visitors and federal employees every day. However, once the federal government acquires land it is removed from county tax rolls and no longer subject to local property taxes. The loss of revenue greatly impacts local schools, roads, hospitals, fire and public safety services. In Mineral County, just 3.4% of our county is privately held and over half of the private land has no taxable infrastructure associated with it. Any loss of private land in my county can have devastating impacts on both the mandatory and non-mandatory services our county provides.

Although the federal government has traditionally provided some relief for this lost revenue through the Payments in Lieu of Taxes (PILT) program, PILT often reimburses at a rate well below the land's taxable value per acre. For example, Mineral County receives \$0.36 cents per acre from the PILT program, far less than the \$3.84 per acre we receive in local property taxes for similar land. In addition, in recent years the fate of the PILT program has been uncertain. The lack of long-term, predictable and full funding for the program has a significant impact on the budgets of public lands counties across the nation.

Requiring consultation with impacted communities and studying the economic costs of federal land acquisition will help to ensure impacted local communities and the federal government know the true costs of land acquisition from all angles before land is bought and paid for.

In a county where 96.4% of our land base is administered by the Federal government in one form or another, one thing is clear: our county government must have more than a "nodding acquaintance" with our federal partners. The same is true in so many public lands counties across the nation.

I hope that today's discussion will promote not just an exchange of information between federal agencies and local elected governments but also a true ongoing and collaborative working relationship.

The discussion draft before this subcommittee today takes positive steps to improve communication and cooperation between local governments and federal land managers. Ultimately, local governments are among those who know best how to balance local conservation and community needs. By ensuring local governments have a seat at the table and are active partners with federal land managers, we can all work together to ensure the health of our lands and our communities for generations to come.

STATEMENT OF  
Leslie Weldon  
Deputy Chief for the National Forest System  
FOREST SERVICE  
U.S. DEPARTMENT OF AGRICULTURE  
BEFORE THE  
COMMITTEE ON NATURAL RESOURCES  
SUBCOMMITTEE ON FEDERAL LANDS  
UNITED STATES HOUSE OF REPRESENTATIVES  
APRIL 28, 2016

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to present the views of the U.S. Department of Agriculture (USDA) regarding the discussion draft bill, the “Locally-elected Officials Cooperating with Agencies in Land Management Act of 2016”. We want to continue to work with the Committee as the ideas in this draft document are deliberated.

Our National Forests and Grasslands are national treasures and provide a broad range of values and benefits, including biodiversity, recreation, clean air and water, forest products, erosion control, and more. Covering a third of the country’s landmass, forests store and filter more than half of the nation’s water supply and absorb approximately 12 percent of the country’s carbon emissions. Our mission of sustaining the health, diversity and productivity of our nation’s forests and grasslands is critically important to maintaining these values and benefits. In 2015, we produced 2.873 billion board feet of timber. Our timber harvest has increased 18 percent since 2008. In 2015 we improved 19 watersheds, and treated 2.5 million acres of hazardous fuels. The agency is achieving these results through an emphasis on collaboration, despite that since 1998, National Forest System staff was reduced by well over a third.

In order to achieve these benefits, the Forest Service and local governmental agencies must communicate and coordinate. We have demonstrated our commitment to local coordination at every level of our organization throughout the country and fully understand the critical role local government agencies play in land stewardship.

Currently, Forest Service employees meet with agencies and groups in order to accomplish the collaboration that is necessary to get our work done. Throughout the country, Forest Supervisors, District Rangers, and Regional Foresters attend business meetings, have monthly discussions and quarterly meetings, email, and problem solve with local government and state officials in a variety of circumstances. Many attend the monthly business meetings of the counties. The Regional Foresters for California, New Mexico, Montana, Arizona and Washington, and others have agreements in place with their state-county associations to enhance interaction, information sharing and communication. In Montana, the Helena and Lewis and Clark National Forests have an intergovernmental coordination council in place, with state agencies, and county

commissioners of the 15 plus counties that have portions of the Forest, facilitated by staff from the University of Montana. Throughout the country employees participate on work groups and collaboratives in their local communities. Many Forests' Secure Rural Schools Resource Advisory Committees are attended by Forest Supervisors, Deputies, or District Rangers, and information is shared regarding current forest programs and plans, as well as community needs and preferences. They also interface at various partnership meetings, such as with the Prescott Area Wildland Urban Interface Commission, Verde Front projects, and Prescott Basin Trails groups. These and other efforts build upon the extensive public engagement and notification requirements governing actions and policies on the National Forests and Grasslands.

Our collaboratives have also enhanced coordination and communication and supported forest restoration by developing better projects, working across larger landscapes, building public support and reducing the risk of litigation. Dozens of collaboratives across the country are enabling the Forest Service and our partners to achieve more significant results. These collaboratives are community groups with locally elected officials, conservation organizations, forest industry, and others who are committed to designing projects and practices that address forest restoration, supply wood to local mills, conserve watersheds and provide a range of other benefits, including creating and maintaining jobs in rural communities. Between 2011 and 2014 these projects generated \$661 million in local labor income and an average of 4,360 jobs per year (United States Department of Agriculture, Forest Service, March 2015, Collaborative Forest Landscape Restoration Program 5-Year Report. FS-1047).

We also recognize the important county funding and collaboration opportunities that the Secure Rural Schools program has delivered. The Secure Rural Schools Act has provided more than a decade of transitioning payments to eligible states and counties to help fund public schools and roads. In addition, it has also created a forum for community interests to participate in the selection of natural resource projects on the national forests, and assisted in community wildfire protection planning.

The Administration supports the Secure Rural Schools program, and recognizes the important county funding and collaboration opportunities that it provides. Some improvements have been made to the Act through reauthorization and we look forward to working with Congress on further improvements to enhance community involvement with title II program delivery and to strengthen economic opportunities provided by the Secure Rural Schools program.

### *Specific Comments*

**Section 101:** The bill would provide that, at the request of the governing body of a greatly affected community, the Forest Service shall seek to enter into an agreement under which it would agree to participate in local governing business meetings to report on activities and respond to concerns.

**Response:** While we think that coordination and communication is very important, we don't think that this provision is necessary because the Forest Service works with local governments in many types of meetings which ensure flexibility and efficiency.

**Section 102:** The bill would require the Forest Service to coordinate with the governing body of the community regarding any forest management activity or other major action that would have a

significant impact on the affected community. It also would provide that as part of the environmental review process for any forest management activity or other major action, the Secretary shall offer to designate the governing body of each affected community that may have an interest “cooperating agency” status.

**Response:** Both of these provisions could add inefficiencies in terms of unnecessary burden. We cannot support these provisions because “any forest management activity” may add requirements and create confusion with the existing processes under the National Forest Management Act and the National Environmental Policy Act (NEPA) of 1969. Requiring a federal agency to offer “cooperating status” to the governing body of each affected local community that may have an interest in the activity adds complexity and unnecessary confusion, since NEPA regulations already specify which governing bodies may be cooperating agencies.

**Section 103:** This provision would amend the Secure Rural Schools (SRS) Act to expand the duties of the SRS Resource Advisory Committees (RACs) to serve as an advisory body for the Secretary regarding forest management activities on National Forest land. It temporarily reduces the number of RAC members to 3 for each subgroup, requires members to be appointed within 90 days and charters to be approved within 90 days, and provides that a RAC may propose projects upon approval of a majority of committee members, including at least one from each of the sub-categories. It also limits RAC members to reside within the county or counties in which the committee has jurisdiction or an adjacent county. It requires local line officers to provide to the RAC at least twice a year a presentation on forest management priorities and to solicit the advice and recommendations of the committee.

**Response:** We cannot meet the 90 day requirement for the approval of vacant positions on the RACs. We would like to explore the option of using the RACs for broader advisory purposes. We agree that there have been difficulties getting timely membership approval for the RACs and want to work internally and with the Committee to resolve membership and other questions that have arisen regarding implementation. Many of our line officers, including Forest Supervisors, Deputies, and District Rangers meet with their RACs to support collaboration.

**Section 104:** The bill would provide that, prior to a proposed land acquisition, the Forest Service would be required to conduct a study on impacts from lost tax dollars, other economic impacts, and other factors. Further, the Secretary would be required to request the affected community provide a written response to the agency indicating their position on the proposed land acquisition, and require the Secretary to give deference to this position when deciding whether or not to request funding for the acquisition from Congress.

**Response:** We could not support this section as written. This requirement would allow local government to interfere with the rights of individual landowners to manage their property and assets, and add unnecessary burden to the Forest Service to complete a limited economic analysis which tells only part of the story. Current Forest Service policy is to provide notification letters to the respective County Board of Commissioners regarding the proposed purchase of land and other land transactions.

**Section 105:** The bill requires that for any Forest Service road that extends from or through, or is directly connected to, a road under the jurisdiction of an affected local community, the Secretary shall obtain the concurrence of the governing body of the affected local community regarding any management direction for the Forest Service road.

**Response:** We would support language requiring the Secretary to consult with the governing body of the affected local community. The Forest Service would not support a requirement for concurrence, as we have broad objectives, numerous environmental considerations, and fiscal requirements by law and regulation which we have to meet.

**Section 106:** This section states that the Secretary may enter into a memorandum of understanding with the governing body of the affected local community to jointly determine and assign management responsibilities for the recreation facility.

**Response:** The Forest Service agrees that managing with communities can be a helpful tool. Currently we estimate that we have over 400 sites operated by local community, municipalities, counties, and states.

**Section 107:** This section requires that written notice of proposed new or increase in recreation fees and an opportunity to comment be provided to the affected local government. It also requires that comments from local government be submitted to Congress.

**Response:** The Forest Service currently includes notification to local legislators, and to a state or regional recreation RAC as part of our public participation requirements. However, the submission to Congress would increase the complexity and cost of the fee proposal process.

**Section 201:** The bill states that the duration of an assignment at a Forest Service duty station should be a minimum of three years, subject to such exceptions as the Secretary of Agriculture may prescribe.

**Response:** We cannot support this provision. The movement of personnel is both voluntary (for example, when someone applies for, is offered, and accepts a promotion or reassignment to another position,) and based on mission-critical needs. This discretion enables the Agency to meet mission requirements to address changing programs of work, budget and workforce needs. The Forest Service is exploring ways to transition employees in a purposeful way to maintain relationships and ties with local communities. We acknowledge that trusting and respectful relationships require attention.

**Section 202:** This section amends Title I of HFRA by requiring the Secretary to develop a schedule for the implementation of community wildfire protection plans. In addition, the Secretary is required to develop a program of work for Federal land that gives priority to authorized hazardous fuels reduction projects and the implementation of CWPPs.

**Response:** Under Section 202 (1), the Secretary would be required to schedule implementation of community wildfire protection plans, many of which involve private or state land. We believe that communities, state and other interested parties should play the lead role in the development and implementation of the substance and detail of their plans and procedures. We agree completely that the Secretary should continue to prioritize fuels reduction projects including implementation of community wildfire protection plans on Federal land. From 2012 to 2015, 85 percent of our Wildland Urban Interface treatments have been in areas with CWPPs.

**Section 204:** This section requires the Secretary to take all necessary and reasonable actions to protect and maintain survey monuments located on the impacted federal land.

**Response:** This is not necessary as we already have these sufficient standards in State and Federal laws and regulations.

**Section 301:** This section specifies that in response to tribal requests under the Tribal Forest Protection Act, the Secretary shall provide an initial response within 120 days and a denial not later than 1 year after the Secretary received the request. The bill requires the Secretary to complete all environmental reviews in connection with the agreement or contract and proposed activities and enter into an agreement or contract within two years.

**Response:** Regarding the two year requirement, we acknowledge this is an important goal to try and achieve. However, in some instances, there are complicated rights, permits, and other commitments, as well as sensitive resources, which need to be fully understood in order to complete a NEPA analysis and subsequent agreements, contracts, and litigation. In some circumstances we would not be able to achieve these timelines, thus we do not support the requirement.

**Section 302:** This section authorizes the Secretary, at the request of an Indian tribe, to treat Federal forest land as Indian forest land for purposes of planning and conducting forest land management activities, if the Federal forest land is located within, or mostly within, a geographic area that presents a feature or involves circumstances principally relevant to that tribe. Requirements include that the public will continue to have public access, there will be continued revenue sharing with state and local governments, prohibitions on exports will continue, and they are required to recognize existing of rights of way.

**Response:** We are generally supportive. We'd like to work with the Committee on technical details.

**Section 303:** Under Section 303, the secretary may carry out demonstration projects by which an Indian tribe may contract to perform administrative, management, and other functions of programs of the Tribal Forest Protection Act of 2004.

**Response:** This is not necessary, as the Secretary can already carry out projects, including demonstration projects, under the provisions of the Tribal Forest Protection Act of 2004.

**Section 401:** As amended by Section 401, funding for land acquisition under the LWCF Act would be limited 15 percent of the acreage must in the west; 75 percent must be adjacent to existing federal land, or 33 percent of funds to go to hunting and fishing access. It proposes that Land and Water Conservation Funds (LWCF) may be used to cover land exchange administrative costs between the United States and other entities.

**Response:** We oppose this section. Imposing a 75 percent adjacency requirement would inadvertently remove many tracts in the east from eligibility. Portions of eastern forests and the National Grasslands can be very fragmented. It is much harder to find tracts with 75 percent adjacency in the east. This provision would actually push more acquisition to the west - the opposite of the apparent intent of the bill. The proposal to limit acreage to 15 percent in the west is not supported by the demand for acquisition from many parts the Western delegation from states including Alaska, Idaho, Colorado, New Mexico, Montana, California and Oregon. Currently, approximately 16 percent of users participate in hunting and fishing (NVUM). Requiring that 33 percent of funds go to access to existing lands for hunting, fishing and shooting is not necessary; we have always tried to acquire lands that meet multiple needs, as access for the hunter is also access for the hiker, the snowmobiler and the general public. We estimate for LWCF, that in all "new" lands acquired, 75 percent of all projects provide for

hunting, shooting and trapping access. The Forest Service already has the authority to use LWCF funds to cover land exchange.

In conclusion, it is critical for the Forest Service to develop and maintain positive working relationships with locally elected officials. Coordination and cooperation at this level can greatly enhance the public's use and enjoyment of our national forests and grassland. To the extent that legislation can assist in fostering these relationships, we would like to work with the committee and bill sponsors to craft language that better utilizes local relationships while not creating new or excessive procedural and management burdens.

This concludes my statement and I'd be happy to answer any questions you may have.



**From:** Rardin, David  
**To:** ["Moran, Jill"](#)  
**Subject:** RE: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest  
**Date:** Thursday, April 28, 2016 3:25:11 PM

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Thanks for passing along!

David Rardin  
Congressman Bill Johnson (OH-06)  
1710 Longworth | 202.225.5705

**From:** Moran, Jill [mailto:jcmoran@blm.gov]  
**Sent:** Thursday, April 28, 2016 3:22 PM  
**Subject:** FYI: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest

Please see attached.

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

email this morning from Mr. Russel at OVS.

\*\*\*\*\*

From: **Russell, James** <[james\\_russell@ios.doi.gov](mailto:james_russell@ios.doi.gov)>  
Date: Mon, Apr 25, 2016 at 10:12 AM  
Subject: Greens Hollow Report  
To: [khoffman@blm.gov](mailto:khoffman@blm.gov), Robert Davidoff <[robert\\_davidoff@ios.doi.gov](mailto:robert_davidoff@ios.doi.gov)>, Joseph Cornellisson <[joseph\\_cornellisson@ios.doi.gov](mailto:joseph_cornellisson@ios.doi.gov)>

Hi Kent,

I have just received the latest version of the Greens Hollow LBA. The document was sent to DME's old address and then rerouted to our new address which is listed below. I will start reviewing the LBA this morning.

Best regards,

James Russell  
Geologist  
Division of Minerals Evaluation,  
Office of Valuation Services, U.S. Department of the Interior  
One Denver Federal Center  
Building 46, Suite 102  
Denver, CO 80225

On Mon, Apr 25, 2016 at 11:24 AM, Madsen, Cam <[Cam.Madsen@mail.house.gov](mailto:Cam.Madsen@mail.house.gov)> wrote:  
Hi Kent, do you have a second to chat? I spoke with Robert Davidoff on Friday and he told me that they haven't received these answers.

202-809-1367

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**From:** Kent Hoffman [mailto:[khoffman@blm.gov](mailto:khoffman@blm.gov)]  
**Sent:** Friday, April 22, 2016 5:58 PM  
**To:** Madsen, Cam  
**Subject:** Re: Green Hollow Lease

We worked with our contract consultants and sent our answers to OVS questions last week. We hope to get concurrence from OVS very soon.

Kent Hoffman  
Deputy State Director  
Utah State Office  
Bureau of Land Management  
iPhone

On Apr 22, 2016, at 12:45 PM, Madsen, Cam <[Cam.Madsen@mail.house.gov](mailto:Cam.Madsen@mail.house.gov)> wrote:

Hi Kent,

Do you have a status on the fair market valuation of the Greens Hollow tract? I believe that OVS sent it back to SLC 2-3 weeks ago and the next step is for BLM to make corrections and get it back to OVS for a final approval.

Thanks for all you do and I appreciate you getting back to me.

Cam

**Cameron Madsen**

*Legislative Assistant*

Office of Rep. Chris Stewart (R-UT)

202-225-9730 Office | 202-225-5629 Fax

[Cam.Madsen@mail.house.gov](mailto:Cam.Madsen@mail.house.gov) | 202-226-0431 Direct

[Web](#) | [Facebook](#) | [YouTube](#) | [Twitter](#) | [Instagram](#)

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Kent Hoffman  
Deputy State Director, Lands & Minerals  
U. S. Bureau of Land Management  
Utah State Office, Salt Lake City, Utah  
Phone (801) 539-4063

FLPMA mandates that the BLM manage Public Lands for *multiple use and sustained yield*. Continuous exploration, development, and site restoration of energy and mineral resources are necessary to **sustain** their **yield**

**From:** Pearce, Sarah (Portman)  
**To:** "[Moran, Jill](#)"  
**Subject:** RE: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest  
**Date:** Friday, April 29, 2016 2:49:50 PM

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Hi Jill,

Thanks for sending this along.

Would you and your team be available for a call sometime next week with myself and staff from Rep. Johnson's office? Just looking for a status update and timeline for leasing.

Thanks,  
Sarah

Sarah Pearce  
Office of Senator Rob Portman  
(202) 224-3353  
448 Russell Senate Office Building  
Washington, DC 20510  
[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Thursday, April 28, 2016 3:22 PM  
**Subject:** FYI: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest

Please see attached.

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

**From:** Moran, Jill  
**To:** [Pearce, Sarah \(Portman\)](#)  
**Subject:** Re: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest  
**Date:** Friday, April 29, 2016 2:54:55 PM

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Hi Sarah,

Absolutely. I'll check with the Eastern States Office on their availability and be back in touch.

Thanks,  
Jill

On Fri, Apr 29, 2016 at 2:49 PM, Pearce, Sarah (Portman)  
<[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)> wrote:

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Sarah

Sarah Pearce

Office of Senator Rob Portman

(202) 224-3353

448 Russell Senate Office Building

Washington, DC 20510

[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]

**Sent:** Thursday, April 28, 2016 3:22 PM

**Subject:** FYI: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest

Please see attached.

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Jill Moran

Bureau of Land Management

Legislative Affairs Specialist

202.912.7411

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Jill Moran

Bureau of Land Management

Legislative Affairs Specialist

202.912.7411

**From:** Pearce, Sarah (Portman)  
**To:** ["Moran, Jill"](#)  
**Subject:** RE: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest  
**Date:** Friday, April 29, 2016 2:58:52 PM

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Hi Jill,

Thanks for the quick reply. Look forward to hearing from you about next week.

Sarah

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Friday, April 29, 2016 2:55 PM  
**To:** Pearce, Sarah (Portman) <[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)>  
**Subject:** Re: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest

Hi Sarah,

Absolutely. I'll check with the Eastern States Office on their availability and be back in touch.

Thanks,  
Jill

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Hi Jill,

Thanks for sending this along.

Would you and your team be available for a call sometime next week with myself and staff from Rep. Johnson's office? Just looking for a status update and timeline for leasing.

Thanks,  
Sarah

Sarah Pearce  
Office of Senator Rob Portman  
(202) 224-3353  
448 Russell Senate Office Building  
Washington, DC 20510  
[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]

**Sent:** Thursday, April 28, 2016 3:22 PM

**Subject:** FYI: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest

Please see attached.

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

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Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411



**From:** Moran, Jill  
**To:** [Memmott, Justin \(Barrasso\)](#)  
**Subject:** Re: FW: two more questions  
**Date:** Friday, April 29, 2016 4:55:44 PM  
**Attachments:** [WY-2016-018.pdf](#)  
[WY2016-018-atc1.xls](#)  
[WY2016-018-atc2.xlsx](#)  
[WY2016-018-atc3.pdf](#)  
[WY2016-018-atc4.pdf](#)

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Hi Justin,

Sorry for the delay -- It's been a crazy week with hearings.

In response to your first question-

The BLM Wyoming State Office recently released a state-specific bonding IM that affects all ROWs, not just mid-stream oil and gas pipelines. I've included it (along with attachments) below.

I also received a response regarding your second question, but I need clarification on it - I hope to get that Monday and will give you a call.

Thanks and have a good weekend!  
Jill

On Tue, Apr 26, 2016 at 3:57 PM, Memmott, Justin (Barrasso)  
<[Justin\\_Memmott@barrasso.senate.gov](mailto:Justin_Memmott@barrasso.senate.gov)> wrote:

Jill,

I'm just following up on these two questions.

I don't believe we ever got them answered.

Thanks.

Justin

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**From:** Memmott, Justin (Barrasso)  
**Sent:** Thursday, March 31, 2016 1:37 PM

**To:** Moran, Jill ([jcmoran@blm.gov](mailto:jcmoran@blm.gov))

**Subject:** two more questions

Jill,

I have two more unrelated questions, but also in the oil and gas context.

1) Does BLM anticipate issuing an Instruction Memorandum related to bonding for mid-stream oil and gas pipelines on federal land? If so, when do you anticipate issuing that IM and can you send me a copy of it?

2) Has BLM issued a policy document related to new appraisals for non-linear oil and gas leases? (I'm hearing, second hand, from Wyoming BLM that BLM's D.C. headquarters has instructed it to reappraise non-linear oil and gas leases.) If so, can you share that policy document with me?

Thanks.

Justin J. Memmott

Energy Policy Advisor

U.S. Sen. John Barrasso M.D.

(202) 224-0806

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Wyoming State Office  
P.O. Box 1828  
Cheyenne, Wyoming 82009-1828



In Reply Refer To:  
2805/2885/2920 (920 Wrigley) P

April 18, 2016

EMS TRANSMISSION: 4/21/2016  
Instruction Memorandum No. WY-2016-018  
Expires: 09/30/2019

To: District Managers  
From: Associate State Director  
Subject: Right-of-Way (ROW) Bonds

**Program Area:** Lands and Realty Management.

**Purpose:** This Instruction Memorandum (IM) supplements the regulations and provides guidance for bonding requirements on Bureau of Land Management (BLM) Wyoming ROWs, leases and permits (grant) for authorized activities other than solar and wind energy authorizations. The guidance for bonding of solar and wind energy authorizations is set forth in Washington Office(WO) Instruction Memorandum (IM) No. 2015-138.

**Policy/Action:** Title V of the Federal Land Policy and Management Act (FLPMA) (43 U.S.C. 1764(i)) and Section 28 of the Mineral Leasing Act (MLA) (30 U.S.C. 185), and the ROW, lease and permit regulations (43 CFR 2805.12(g), 2885.11(b)(7) and 2920.7(g)) authorize the BLM to require a grant applicant/holder provide a bond to secure the obligations imposed by the grant (to include short term ROW and temporary use permits).

Under 43 CFR 2805.12(g), 2885.11(b)(7) and 2920.7(g) the BLM Wyoming will require a performance and reclamation bond for all new grants, amendments, renewals, and assignments to ensure compliance with the terms and conditions of a grant and the requirements of the regulations, including reclamation. The applicant/holder of any new grant, amendment, renewal, or assignment must submit a bond, which must be approved by the BLM authorized officer prior to the grant being issued. If not already bonded, existing grants (excluding wind and solar grants) will not require a bond unless a renewal, amendment or assignment is submitted for approval. An amendment will trigger the requirement for a bond for the entire grant (new plus existing).

Grants to State and/or local Governments which have statutory or constitutional authorities limiting the amount of liability or indemnification payable, only require a financial guarantee

sufficient to fund the amount over the State or local Government's limited liability. The only exception to this policy would be ROW grants to another Federal agency, which do not require a bond.

Statewide or nationwide bonds are not acceptable at this time. A bond will be required for each grant, unless the bond instrument specifies that it covers more than one grant.

**Statewide/nationwide oil and gas bonds are valid only for lease activities on the leasehold, and can't be used for ROW administration.**

Waivers to the requirement of a bond may be obtained for hardships only and may only be approved by the BLM Wyoming Deputy State Director, Lands and Minerals. The applicant/holder must submit the following information to the authorized officer for all waiver requests:

- a. A suggested alternative (adding the BLM as an insured on the homeowners insurance policy, etc.);
- b. Specific financial information to support the hardship request (submit the same information that is required for rent waivers at 43 CFR 2806.15).

The authorized officer must submit the complete package to the Wyoming Deputy State Director, Lands and Minerals with a recommendation for consideration.

*Bond Amount Determination:*

The applicant/holder shall furnish a reclamation cost estimate (RCE) to the BLM authorized officer for review and approval, estimating all the costs (see attachment 1 for example) for the BLM to fulfill the terms and conditions of the grant in the event that the holder may not be able to do so. This estimate shall be prepared by an independent state licensed engineer, who is licensed in the state of Wyoming, and shall include such information including but not limited to, direct, indirect, administrative, equipment, contracting, monitoring, and reclamation costs, as well as Davis-Bacon and Related Acts locally prevailing wages potentially incurred by the BLM. Costs for the BLM to administer a reclamation contract and inspect and monitor the reclamation activities should be commensurate with the complexity of fully reclaiming the land. This may be a percentage-based determination by the BLM which it adds to the RCE as part of its bond determination. The RCE shall detail the estimated costs and shall be accompanied by the engineer's seal and signature. All costs of preparing and submitting the RCE shall be borne solely by the applicant/holder. The RCE, along with inflationary estimates, shall be the basis for the bond amount and shall remain in effect for 5 years unless the authorized officer determines that conditions warrant a review of the bond sooner.

If the proposed grant would not allow any surface disturbance on the public land (e.g. power line corner crossing) or if the preparation cost of the RCE would be a hardship for the applicant/holder, the BLM (realty and/or engineer) may prepare the RCE for the

applicant/holder. The engineering staff in the District and Field Offices may help with completion of the RCE.

The RCE is key to determining the bond amount, and will be included as part of the plan of development (POD) required under 43 CFR 2804.25(b), 2884.22(a), and 2920.5-2. If no POD is required (assignment or renewal), then an individual RCE must be provided to the BLM for its review and consideration in determining a bond. The BLM has issued policy and guidance for determining bonding requirements under 43 CFR 3809 for mining operations on the public lands (IM 2009-153, dated June 19, 2009, [http://www.blm.gov/wo/st/en/info/regulations/Instruction\\_Memos\\_and\\_Bulletins/national\\_instrument/2009/IM\\_2009-153.html](http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instrument/2009/IM_2009-153.html)) that provides detailed information about the process for determining the appropriate financial guarantees for intensive land uses on the public lands. This guidance will be used to assist in calculating the bond amount for grants on public lands. Attachment 1 to IM 2009-153, "Guidelines for Reviewing Reclamation Cost Estimates", can be used as a guideline to assist in reviewing RCEs. The engineering staff in the District and Field Offices will assist with review of the RCE's for adequacy.

The RCE's will consist of three components of financial liability for purposes of determining its amount. Each component may individually or jointly contribute to a significant bond amount. The three required components of the RCE are:

1. Environmental liabilities including hazardous materials liabilities, such as securing, removal or use with hazardous waste and hazardous substances. This component may also account for herbicide use, petroleum-based fluids, and dust control or soil stabilization materials.
2. The decommissioning, removal, and proper disposal, as appropriate, of improvements and facilities.
3. Interim and final reclamation, revegetation, restoration, and soil stabilization. This will be determined based on the amount of vegetation retained onsite and the potential for flood events and downstream sedimentation from the site that may result in offsite impacts.

Ultimately, the performance and reclamation bond will be a single instrument to cover all potential liabilities. The entire bond amount could be used to address a single risk event such as hazardous materials release or groundwater contamination regardless of the fact that in calculating the total bond amount other risks were also considered. If the bond is used to address a particular risk, the holder would then be required to increase the bond amount to compensate for this use. This approach to establishing a bond is preferable to one allowing holders to maintain separate bonds for each contingency. If separate bonds are held, an underestimation of one type of liability may leave the BLM responsible for making up the difference, as the funds associated with one bond may not be applicable for the purposes of another. Requiring a single, larger bond will ensure that the holders are bonded with a surety that has the capacity to underwrite the entire amount associated with the grant.

Salvage value for structures, equipment, or materials should not be included in the RCE. RCE's will be calculated as if there were no such values since these are generally based upon a transient market value for commodities. An addendum to the RCE may be provided where the salvage and recycling value for the structures, equipment, or materials can be detailed. However, the addendum for salvage values will only be included in BLM's bond determination with adequate third-party documentation and justification for salvage or considering special circumstances, such as State mandates to recycle and salvage project materials. The addendum must include current local market information and be readily available for BLM review and consideration in making its bond determination.

The authorized officer may require the holder to submit a new estimate at any time during the term of the grant. The bond, in a form acceptable to the authorized officer, shall be furnished by the applicant/holder prior to any grant or decision being issued. Should the bond furnished under this authorization become unsatisfactory at any time to the authorized officer, the holder shall, within 30 days of demand, furnish a new bond satisfactory to the authorized officer.

The applicant/holder shall submit the RCE both in hard copy and in a standardized electronic format (Microsoft Excel or compatible electronic spreadsheet is preferred) that can be easily updated with current costs by the BLM for future reviews. A guide for the bond estimate is attached (attachment 1).

Based on a review of the RCE, the BLM authorized officer must provide the applicant/holder with a written decision as to the amount required for the performance and reclamation bond.

Bond determination letters must be adequately documented in the case file and supported by an RCE provided by the applicant/holder. The RCE is the basis for determining the amount of the performance and reclamation bond. The additional administrative and other such costs must also be properly documented and retained in the case file to be included in the final bond determination. The case file will have a section that fully documents the RCE for the grant, the BLM review of the RCE, the basis for the final bond determination, communications with the applicant/holder regarding the bonding requirements for the grant and records related to the bond instruments provided by the applicant/holder.

Bond determinations must also consider compliance with State of Wyoming standards for public health and safety, environmental protection, construction, operation and maintenance of a grant. Consideration must be made when the State standards are more stringent and are not inconsistent with the applicable Federal standard. If a State regulatory authority requires a bond to cover some portion of the environmental liabilities or other requirements for the grant, the BLM must be listed as an additional named insured on the bond instrument and this documentation must be included in the case file. This inclusion would suffice to cover the BLM's exposure should the holder default in any environmental liability listed in the respective State bond.

Bond Instrument:

Acceptable bond instruments include personal bonds, surety bonds or policy of insurance. Surety bonds from the approved list of sureties (U.S. Treasury Circular 570) must be payable to the BLM. The BLM will not accept a corporate guarantee as an acceptable form of bond. If a state regulatory authority requires a bond to cover some portion of environmental liabilities, such as hazardous material damages or releases, reclamation, or other requirements for the project, the BLM must be listed as an additionally named insured on the policy. This inclusion would suffice to cover the BLM's exposure should a holder default in any environmental liability listed in the respective state bond. The authorized officer shall not accept bonds from any entity or individual other than the applicant/holder, (i.e., the holder's contractors, subcontractors, lessees, or subsidiaries).

Personal Bonds:

Personal bonds will be accompanied by BLM Form 2800-17 (attachment 3) and payment for the amount required by the authorized officer.

Book entry deposits must be accompanied by a power of attorney authorizing the Secretary of the Interior to collect the proceeds in the event the holder fails to adhere to the grant stipulations covered by the bond. In the past, personal bonds in the form of a Treasury bond or note involved the physical handling by Bureau personnel. This is no longer acceptable. A change in the procedures of the Department of the Treasury in 1983 provides that the notes and bonds will be in a book entry form on deposit in the Federal Reserve System and no actual handling of the securities themselves are involved. A charge is assessed by the Federal Reserve System for security safekeeping and transfer services. This charge is to be paid by the principal.

The only acceptable forms of security for personal bonds are:

- Cash (cash, certified or cashier's check, (personal/business checks will not be accepted));
- Book entry deposits;
- Irrevocable letters of credit payable to the BLM issued by a financial institution that has the authority to issue irrevocable letters of credit and whose operations are regulated and examined by a Federal agency, or;
- A policy of insurance that provides the BLM with acceptable rights as a beneficiary and is issued by an insurance carrier that has the authority to issue insurance policies in the applicable jurisdiction and whose insurance operations are regulated and examined by a Federal agency.

Bonds which are not acceptable forms of security are negotiable bonds, notes issued by the United States, certificates of deposit, U.S. Savings Bonds, and notes or bonds issued by State or local Governments or private companies. These instruments can't be transferred to the Federal Reserve System and must be physically stored in a protected BLM facility. Fire, theft, and loss resulting from lack of long term vigilance all pose unacceptable risks to BLM.

### Surety Bonds:

Surety bonds will be accompanied by BLM Form 2800-16 (attachment 4).

A surety bond consists of a promise to the United States by the applicant/holder and a surety that the surety will correct any failure of the holder to adhere to grant stipulations or pay up to the limits of the amount of the bond. For all Federal bonds, the surety corporation must be approved by the Department of the Treasury and in Circular 570 as an acceptable surety. The acceptance of the surety bond by the authorized officer on behalf of the United States and authorization of activity based upon the bond completes the cycle and makes the bond a 3-way contract between the holder, the surety, and the United States, which can be enforced should the holder fail to comply with the grant stipulations. The money paid by the holder to obtain the surety's entry into the arrangement is normally called the premium and is solely a matter between the principal and the surety.

You can find Circular 570 at <https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570.htm>. This circular is published annually in July.

### Bond Recordkeeping:

The LR2000 and the Bond and Surety System (B&SS) are the BLM's data systems used to track information for grants, including the status of performance and reclamation bonds. It is critically important that all managers and staff place a high priority on the timely and accurate entry and update of information in LR2000 and the B&SS, consistent with current data standards for both systems. The LR2000 and the B&SS are used for both national and local reporting and tracking purposes and are also used as a public information and data source. This IM establishes a mandatory policy that LR2000 and the B&SS data entry for all ROW authorizations occur within 10 business days of the action. Each BLM Field office will identify and designate the appropriate staff for LR2000 and the B&SS data entry for grants.

### Financial Instrument Handling:

The handling of financial instruments such as personal and surety bonds, and other instruments that are received as bond payment to the BLM must be handled in accordance with the BLM Manual 1372 – Collections, and Manual 1270 – Records Administration, and their policy guidance. Cash or checks are required to be deposited into a BLM suspense account in a timely manner, but until they are deposited, they are required to be safeguarded in a fireproof safe or file cabinet with adequate locking devices and with access limited to those designated employees with direct responsibilities for collections. The bond instrument itself received by the BLM must be properly safeguarded within a secure BLM records room or secured file cabinet, and documented in the case file. Under no circumstances should bond records be held in desk drawers or other inadequate storage containers where they are readily susceptible to loss or theft. Access to safes and financial securities are addressed within these manuals and must be adhered to when reviewing and handling furnished bond instruments. Specific attention must be given to



ensure that personally identifiable information (PII) received as part of the bond instruments and documentation is not kept for public review in case files.

It is recommended that copies of bonds and all other supporting bond information be kept in a blue envelope on the left side of the case file. This would make the information easy to locate and remove for public review of the case file. For major projects (those projects which require a National Project Manager, etc.), a separate case file containing all the bond information would be maintained in the administrative record. In an effort to keep the volume of paper at a minimum in the case files, an electronic file folder on a shared drive either in the Field Office or the State Office could be used to store the bond information. The electronic folder would limit access to only those who need it.

#### *Bond Review:*

Each year the Wyoming BLM District Offices will coordinate Field Office reviews of at least 20 percent of the RCE's and bonds for grants within their administrative boundaries that are less than 5 years of age for bond adequacy. These reviews will prioritize higher risk projects that involve greater land disturbance acreage, projects with a history of incidents of noncompliance, projects with abandoned or disabled equipment, or projects that may have potential environmental liabilities associated with use of hazardous materials and substances, hazardous waste, or herbicides.

Each bond and RCE must be reviewed at least once every 5 years, regardless of its review priority. These reviews should be completed throughout the Fiscal Year to moderate workload impacts. Within 90 days of the end of each Fiscal Year, beginning the Fiscal Year this policy is effective, these reviews must be completed and documented in each case file. For any authorization determined to have an inadequate RCE, the appropriate BLM Field Office will issue a letter to the grant holder requesting that it provide an updated RCE within 90 days of the date of the letter.

#### *Oversight and Implementation:*

Each District Office must coordinate with the Wyoming State Office Realty Officer when implementing these policy requirements. The attached Bond Review Coordination Spreadsheet will be used and filled out by each Field Office, documenting the status of each application/authorization and associated bond, as well as the basis for minimum bond amounts and the bond determinations for the grants that require bonds. An updated spreadsheet, from each district office, must be provided to the Wyoming State Office Realty Officer by the last business day of each month until all actions are completed.

All WY Field Offices must review and update data in the LR2000 (Case Recordation & the Bond and Surety System) on an annual basis. The annual certifications, using the attached memorandum form will be submitted to the Wyoming State Office Realty Officer, by each district office, within 30 days of the end of each Fiscal Year.

**Timeframe:** This IM is effective upon issuance and will remain in effect unless formally modified.

**Budget Impact:** The application of this policy will have a minimal budget impact. The bond determination, adequacy and compliance review workload are subject to the processing and monitoring fee provisions of the regulations (43 CFR 2804.14(a), 2805.16(a), 2884.12(a), 2885.24(a), and 2920.6(b)).

**Background:** Historically, the BLM Wyoming has not required a bond on all grants. With the increasing concern over changes in financial markets and corporate financial volatility, the BLM is reducing the potential liabilities to the United States associated with grants by requiring a performance and reclamation bond. The BLM would use the bond for reclamation of sites or meeting other grant requirements in the event a holder is unable to meet their obligations.

**Coordination:** This bonding policy was coordinated with the Office of the Solicitor, Washington Office Branch Chief for ROW (WO-350), Renewable Energy Coordination Office (WO-301).

**Contact:** If there are any questions related to this IM, please contact Janelle Wrigley at 307-775-6257.

Signed by:  
Larry Claypool  
Acting Associate State Director

Authenticated by:  
Jessica Camargo  
State Director's Office

4 Attachments:

- 1 - Bond calculator spreadsheet (1 p)
- 2- Bond calculator example (1 p)
- 3 - Personal bond form 2800-17 (1 p)
- 4 - Surety bond form – 2800-16 (1 p)

Distribution

Director (WO 350)  
Field Managers  
Resource Advisors  
CF

1/watch.  
1 w/atc.  
1 w/atc.  
2 w/atc.

**Reclamation Cost Model  
For ROW Grants, Leases & Permits**

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**PROJECT DESCRIPTION**

*PROVIDE A BRIEF DESCRIPTION/STATEMENT OF WORK FOR THE PROJECT HERE*

**EQUIPMENT/LABOR COST**

**EQUIPMENT COST**

<b>BULLDOZZER</b>
<b>MOTOR GRADERS</b>
<b>TRACK GRADERS</b>
<b>SCRAPERS</b>
<b>WHEELED LOADERS</b>
<b>OTHER EQUIPMENT</b>
<b>TOTAL COST</b>

**HOURLY LABOR RATE**

<b>BULLDOZZERS</b>	
<b>MOTOR GRADERS</b>	
<b>TRACK EXCAVATORS</b>	
<b>SCAPPERS</b>	
<b>WHEELED LOADERS</b>	
<b>HYDRAULIC EQUIPMENT</b>	
<b>OTHER EQUIPMENT</b>	
<b>FRINGE BENNEFITS</b>	
<b>TRUCK DRIVERS - Labor Groups and Base Pay Rate (\$/hr) (4)</b>	
<b>FRING BENNEFITS</b>	
<b>LABORERS - Labor Groups and Base Pay Rate (\$/hr) (6,7)</b>	
<b>FRINGE BENNEFITS</b>	
<b>TOTAL LABOR COST &amp; FRINGE BENNEFITS</b>	

	Acres		Cost/Acre
Light	0	Recontouring Cost	
Moderate	0	Recontouring Cost	
Heavy	0	Recontouring Cost	

**Excavator Work**

Roads with the side Slope,

Linear Feet

Cost/Linear Foot

<30% 0 Recontouring Cost

>30% 0 Recontouring Cost

Areas of non-road disturbance where the use of dozer wouldn't be adequate.

Acres

Cost /Acre

<30% 0 Recontouring Cost

>30% 0 Recontouring Cost

**Revegetation**

**Revegetation**

Seed Mixes

Mulch

Amendments

Well Abandonment Materials

Monitoring Costs

Fuel, Etc.

**TOTAL COST**

Acres

Cost/Acre

Non-Road disturbances with machine spreader 0 Revegetation Cost

\$0.00

Non-Road disturbances with manual spreading 0 Revegetation Cost

\$0.00

Linear Feet

Cost/Linear Foot

Road disturbances with machine spreader 0 Revegetation Cost

\$0.00

Road disturbances with manual spreader 0 Revegetation Cost

\$0.00

**Mobilization**

**Mobilization**

No. Pieces of equipment

Cost/Piece

Mobilization Cost

**Total Labor Cost**

**Total Operating and Maintanance (O&M) Cost**

**\$0.00**

Contractor's Profit 10% O&M Cost

\$0.00

**Estimated Contract**

**\$0.00**

Contingency 10% O&M Cost

\$0.00

Project Management and Technical Labor		
<b>Total Estimated Contract and Contingency</b>		<b>\$0.00</b>
<hr/>		
<b>Administrative Fees</b>	Contract Administration 10% O&M Cost Indirect Costs 21% Administrative Cost *Engineering/Design 15% O&M Cost * Labor Insurance 1.5% Labor Cost *Fring Bennefits **Bond Maintenance 3% Rec. Cost	
*May be waived for small, uncomplicated reclamation efforts... For operations such as heap leaches the percent may need to be higher. * *Only Administered if Estimated Contract Costs over \$100,000.		
<b>Total Administrative Cost</b>		<b>\$0.00</b>
<hr/>		
<b>Bond Amount</b>		<b>\$0.00</b>

original  
**Reclamation Cost Model  
 For ROW Grants, Leases & Permits**

<b>Dozer Work</b>			<b>Earthwork</b>
	Acres	Cost/Acre	
Light	0 Recontouring Cost		\$0.00
			0.00
Moderate	0 Recontouring Cost		\$0.00
Heavy	0 Recontouring Cost		\$0.00
<b>Excavator Work</b>			
Roads with the side Slope,	Linear Feet	Cost/Linear Foot	
<30%	0 Recontouring Cost		\$0.00
>30%	0 Recontouring Cost		\$0.00
Areas of non-road disturbance where the use of dozer wouldn't be adequate.	Acres	Cost /Acre	
<30%	0 Recontouring Cost		\$0.00
>30%	0 Recontouring Cost		\$0.00

<b>Revegetation</b>			<b>Revegetation</b>
	Acres	Cost/Acre	
Non-Road disturbances with machine spreader	0	Revegetation Cost	\$0.00
Non-Road disturbances with manual spreading	0	Revegetation Cost	\$0.00
	Linear Feet	Cost/Linear Foot	
Road disturbances with machine spreader	0	Revegetation Cost	\$0.00
Road disturbances with manual spreader	0	Revegetation Cost	\$0.00
<b>Mobilization</b>			<b>Mobilization</b>
	No. Pieces of equipment	Cost/Piece	
		Mobilization Cost	\$0.00
<b>Total Labor Cost</b>	<b>\$ 278.00</b>	<b>Total Operating and Maintenance (O&amp;M) Cost</b>	<b>\$0.00</b>
		Contractor's Profit 10% O&M Cost	\$0.00
		<b>Estimated Contract</b>	<b>\$0.00</b>
		Contingency 10% O&M Cost	\$0.00
		<b>Total Estimated Contract and Contingency</b>	<b>\$0.00</b>
<b>Administrative Fees</b>			
	Contract Administratio	10% O&M Cost	\$0.00
	Indirect Costs	21% Administrative Cost	\$0.00
	*Engineering/Design	4% O&M Cost	\$0.00
	Insurance	2% Labor Cost	\$0.00
	**Bond Maintenance	3% Rec. Cost	\$0.00
*May be waived for small, uncomplicated reclamation efforts... For operations such as heap leaches the percent may need to be higher.			
* *Only Administered if Estimated Contract Costs over \$100,000.			
		<b>Total Administrative Cost</b>	<b>\$0.00</b>
		<b>Bond Amount</b>	<b>\$0.00</b>

<b>CASE FILE NO.\:</b>	
<b>Date:</b>	
<b>Author/Source:</b>	

**MISCELLANEOUS COST TABLE**

JOB DESCRIPTION		Basis 1			
<b>REVEGETATION</b>					
Item	Units	COST	LENGTH	WIDTH	ACRES
Seeding - Broadcast Mechanical <sup>(1)</sup>	\$/acres				
Seeding - Drill <sup>(1)</sup>	\$/acres				
Seeding - Hydroseeding <sup>(1)</sup>	\$/acres				
Item	Units	Materials		Labor	Equip
Shrub Planting - bare root 6-10 in (15- 25cm) <sup>(2)</sup>	ea.				
Tree Planting - bare root 11-16 in (27- 40cm) <sup>(3)</sup>	ea.				
Cactus Planting <sup>(4)</sup>	ea.				

- NOTES:**  
(1) Seeding Source:  
(2) Shrub Source:  
(3) Tree Source:  
(4) Cactus Source:

WASTE DISPOSAL				
Item	Units	Materials	Premium	
<b>Rubbish and Waste Handling</b>				
Dumpster delivery (average for all sizes)	ea.			
Haul (average for all sizes)	ea.			
Rent per month (average for all sizes)	ea.			
Disposal fee per ton (tonne) (average for all sizes)	ton			

- NOTES:**  
Dumpster Cost Source  
Disposal Fee Source:

Hazardous Material Handling - Solids				
Pickup fees 55 gal. drums	ea.			
Bulk material (average)	ton			
Transport - truck load (80 drums, 25 cy (m3), 18 tons)	mile			
Dump site disposal fee	ton			

- NOTES:**  
Solid Handling Cost Source

Solid Disposal Fee Source:				
<b>Hazardous Material Handling - Liquids</b>				
Vacuum Truck Pickup (2200 gal)	hr.			
Vacuum Truck Pickup (5000 gal)	hr.			
Dump site disposal fee	ton			
<b>NOTES:</b>				
Liquid Handling Cost Source:				
Liquid Disposal Fee Source:				
<b>Hydrocarbon Contaminated Soils (HCS)</b>				
Insitu Biotreatment	C.Y			
HCS disposal fee	C.Y			
<b>NOTES:</b>				
Insitu Treatment Cost Source:				
HCS Disposal Fee Source:				
<b>UNDERGROUND OPENING CLOSURE</b>				
<b>Item</b>	<b>Units</b>	<b>Materials</b>	<b>Premium</b>	
<b>Reinforced Concrete Bulkheads and Shaft Covers</b>				
Grade walls - 15 in thick, 8 ft high	C.Y			
Grade walls - 15 in thick, 12 ft high	C.Y			
Elevated conc, 1-way beam & slab - 15ft span	C.Y			
Elevated conc, 1-way beam & slab - 25ft span	C.Y			
<b>Item</b>	<b>Units</b>	<b>Materials</b>	<b>Daily Prod</b>	
<b>Small Adit Plugging</b>				
Bat Gate <sup>(5)</sup>	ea.			
Culvert Gate <sup>(5)</sup>	C.Y			
Adit Foam Plug <sup>(6)</sup>	C.Y			
Production Opening Foam Plug <sup>(6)</sup>	C.Y			
<b>NOTES:</b>				
(5) Bat Gate Source:				
(6) Foam Plug Source:				
<b>MISC. LINEAR PROJECTS</b>				
<b>Item</b>	<b>Units</b>	<b>Materials</b>	<b>Premium</b>	
<b>Fencing Installation</b>				
Barbed 3-strand	ft			
Barbed 4-strand	ft			
Barbed 5-strand	ft			
Chain link 8 ft -10 ft Install	ft			
Wood stockade fence 6 ft high - Install	ft			



	ft			
	ft			
<b>Fencing Demolition</b>				
Barbed 3-strand Removal	ft			
Barbed 4-strand Removal	ft			
Barbed 5-strand Removal	ft			
Chain link 8 ft -10 ft Removal	ft			
Wood, all types 4 ft -6 ft high Removal	ft			
	ft			
	ft			
<b>Pipeline and Culvert Removal</b>				
12 in Diameter	ft			
18 in Diameter	ft			
24 in Diameter	ft			
36 in Diameter	ft			
<b>Pipe and Drainpipe Installation</b>				
Water 4in (10cm ) 40ft (12m) length, welded HDPE	ft			
Water 6in (15cm) 40ft (12m) length, welded HDPE	ft			
Drain 4in (10cm) perforated PVC	ft			
Drain 6in (15cm) perforated PVC	ft			
Drain 4in (10cm) corrugated, perf or plain	ft			
Drain 6in (15cm) corrugated., perf or plain	ft			
<b>Misc.</b>				
Backhoe work	C.Y			
<b>Item</b>	<b>Units</b>	<b>Premium</b>	<b>Total</b>	
<b>Powerline and Transformer Removal</b>				
Single Pole Powerlines <sup>(7)</sup>	mile			
Double Pole Powerlines <sup>(8)</sup>	line mile			
Transformer <sup>(9)</sup>	unit			
<b>NOTES:</b>				
(7) Single Pole Source:				
(8) Double Pole Source:				
(9) Transformer Source:				
<b>EROSION, EVAPORATION and SEDIMENTATION CONTROL</b>				
<b>Item</b>	<b>Units</b>	<b>Materials</b>	<b>Premium</b>	
<b>Rip-Rap &amp; Rock Lining</b>				

Rip-Rap 3/8 to 1/4 C.Y. pieces, grouted	S.Y.			
Rip-Rap 18 in min thick, no grout	S.Y.			
Gabions, 6 in deep	S.Y.			
Gabions, 9 in deep	S.Y.			
Gabions, 12 in deep	S.Y.			
Gabions, 18 in deep	S.Y.			
Gabions, 36 in deep	S.Y.			
<b>Liner Installation</b>				
<b>Item</b>	<b>Units</b>	<b>Labor</b>	<b>Equip</b>	
Site grading	S.F.			
Compaction	S.F.			
<b>Item</b>	<b>Units</b>		<b>Materials</b>	
60 mil HDPE Liner	S.F.			
<b>Construction Management Support</b>				
<b>Item</b>	<b>Units</b>		<b>Materials</b>	
Office Trailer, Furnished, no hook-ups	month			
Toilet Portable, chemical	month			
<b>PRODUCTION OR DEWATERING WELL PUMP REMOVAL</b>				
<b>Item</b>	<b>Units</b>	<b>Labor</b>	<b>Equip</b>	
<b>Pump Type</b>				
Submersible <sup>(10)</sup>	ft to pump			
Line Shaft <sup>(10)</sup>	ft to pump			
<b>NOTES:</b>				
(10) Pump Removal Source:				



<b>Basis 2</b>

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<b>COST PER ACRE</b>	<b>Equip</b>

<b>Materials</b>	

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<b>Materials</b>	<b>Premium</b>

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<b>Materials</b>	<b>Premium</b>
<b>Materials</b>	<b>Daily Prod</b>
<b>Materials</b>	<b>Premium</b>



<b>Labor</b>	<b>Equip</b>
	<b>Materials</b>
	<b>Materials</b>
<b>Labor</b>	<b>Equip</b>

<b>File Name:</b>	
<b>Date:</b>	
<b>Cost Basis:</b>	User Data
<b>Author/Source:</b>	0

<b>Monthly Rental Basis</b> (operating hrs/ period)			
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## MONTHLY EQUIPMENT RATE TABLE <sup>(1)</sup>

EQUIPMENT TYPE <sup>(2)</sup>	Basis 1	Basis 2	Basis 3
<b>Bulldozers</b>			
D6R			
D7R			
D8R			
D9R			
D10R			
D11R			
<b>Motor Graders</b>			
14G/H			
16G/H			
<b>Track Excavators</b>			
320C			
325C			
345B			
385BL			
<b>Scrapers</b>			
631G			
637G PP			
<b>Wheeled Loaders</b>			
928G			
966G			
972G			
988G			
992G			
<b>Hydraulic Hammers</b>			
H-120 (fits 325)			
H-160 (fits 345)			
H-180 (fits 365/385)			
<b>Other Equipment</b>			
420D 4WD Backhoe			
CS563E Vibratory Roller			

Light Truck - 1.5 Ton			
Supervisor's Truck			
Air Compressor + tools			
Welding Equipment			
Heavy Duty Drill Rig			
Pump (plugging) Drill Rig			
Concrete Pump			
Gas Engine Vibrator			
Generator 5KW			
HDEP Welder (pipe or liner)			
5 Ton Crane Truck			
25 Ton Crane			

**Trucks**

769D			
777D			
613E (5,000 gal) Water Wagon			
621E (8,000 gal) Water Wagon			
Dump Truck (10-12 yd <sup>3</sup> )			

**NOTES:**

(1) Power Equipment Source:			
(2) Power Equipment Type:	Catepillar model or equivalent	Catepillar model or equivalent	Catepillar model or equivalent
(3) Drilling Equipment Source:			
(4) Other Equipment Source:			

**PREVENTATIVE MAINTENANCE COST <sup>(1)</sup>**

EQUIPMENT TYPE	Basis 1	Basis 2	Basis 3
<b>Bulldozers</b>			
D6R			
D7R			
D8R			
D9R			
D10R			
DT1R			
<b>Motor Graders</b>			
14G/H			
16G/H			
<b>Track Excavators</b>			
320C			
325C			
345B			
385 BL			
<b>Scrapers</b>			
631G			



637G PP			
<b>Wheeled Loaders</b>			
928G			
966G			
972G			
988G			
992G			
<b>Hydraulic Hammers</b>			
H-120 (fits 325)	N/A	N/A	N/A
H-160 (fits 345)	N/A	N/A	N/A
H-180 (fits 365/385)	N/A	N/A	N/A
<b>Other Equipment</b>			
420D 4WD Backhoe			
CS563E Vibratory Roller			
Light Truck - 1.5 Ton	N/A	N/A	N/A
Supervisor's Truck	N/A	N/A	N/A
Air Compressor + tools	N/A	N/A	N/A
Welding Equipment	N/A	N/A	N/A
Heavy Duty Drill Rig	N/A	N/A	N/A
Pump (plugging) Drill Rig	N/A	N/A	N/A
Concrete Pump	N/A	N/A	N/A
Gas Engine Vibrator	N/A	N/A	N/A
Generator 5KW	N/A	N/A	N/A
HDEP Welder (pipe or liner)	N/A	N/A	N/A
5 Ton Crane Truck			
25 Ton Crane			
<b>Trucks</b>			
769D			
777D			
613E (5,000 gal) Water Wagon			
621E (8,000 gal) Water Wagon			
Dump Truck (10-12 yd <sup>3</sup> )			
(1) PM Source:			

<b>G.E.T CONSUMPTION</b> (1) (Wear Items)			
EQUIPMENT TYPE	Basis 1	Basis 2	Basis 3
<b>Bulldozers</b>			
D6R			
D7R			
D8R			
D9R			
D10R			
D11R			
<b>Motor Graders</b>			

14G/H			
16G/H			
<b>Track Excavators</b>			
320C			
325C			
345B			
385BL			
<b>Scrapers</b>			
631G			
637G PP			
<b>Wheeled Loaders</b>			
928G			
966G			
972G			
988G			
992G			
<b>Hydraulic Hammers</b>			
H-120 (fits 325)			
H-160 (fits 345)			
H-180 (fits 365/385)			
<b>Other Equipment</b>			
420D 4WD Backhoe			
CS563E Vibratory Roller	N/A	N/A	N/A
Light Truck - 1.5 Ton	N/A	N/A	N/A
Supervisor's Truck	N/A	N/A	N/A
Air Compressor + tools	N/A	N/A	N/A
Welding Equipment	N/A	N/A	N/A
Heavy Duty Drill Rig	N/A	N/A	N/A
Pump (plugging) Drill Rig	N/A	N/A	N/A
Concrete Pump	N/A	N/A	N/A
Gas Engine Vibrator	N/A	N/A	N/A
Generator 5KW	N/A	N/A	N/A
HDEP Welder (pipe or liner)	N/A	N/A	N/A
5 Ton Crane Truck	N/A	N/A	N/A
25 Ton Crane	N/A	N/A	N/A
<b>Trucks</b>			
769D			
777D			
613E (5,000 gal) Water Wagon	N/A	N/A	N/A
621E (8,000 gal) Water Wagon	N/A	N/A	N/A
Dump Truck (10-12 yd <sup>3</sup> )			
<b>Notes:</b>			
(1) G.E.T. Source:			

<b>TIRE COST TABLES [Cost Per Tire<sup>(1,2,3)</sup>]</b>			
<b>EQUIPMENT TYPE</b>	<b>Basis 1</b>	<b>Basis 2</b>	<b>Basis 3</b>

<b>EQUIPMENT TYPE</b>			
<b>Bulldozers</b>			
D6R	N/A	N/A	N/A
D7R	N/A	N/A	N/A
D8R	N/A	N/A	N/A
D9R	N/A	N/A	N/A
D10R	N/A	N/A	N/A
D11R	N/A	N/A	N/A
<b>Motor Graders</b>			
14H			
16H			
<b>Track Excavators</b>			
320C	N/A	N/A	N/A
325C	N/A	N/A	N/A
345B	N/A	N/A	N/A
385BL	N/A	N/A	N/A
<b>Scrapers</b>			
631G			
637G PP			
<b>Wheeled Loaders</b>			
928G			
966G			
972G			
988G			
992G			
<b>Hydraulic Hammers</b>			
H-120 (fits 325)	N/A	N/A	N/A
H-160 (fits 345)	N/A	N/A	N/A
H-180 (fits 365/385)	N/A	N/A	N/A
<b>Other Equipment</b>			
420D 4WD Backhoe			
CS563E Vibratory Roller	N/A	N/A	N/A
Light Truck - 1.5 Ton	N/A	N/A	N/A
Supervisor's Truck	N/A	N/A	N/A
Air Compressor + tools	N/A	N/A	N/A
Welding Equipment	N/A	N/A	N/A
Heavy Duty Drill Rig	N/A	N/A	N/A
Pump (plugging) Drill Rig	N/A	N/A	N/A
Concrete Pump	N/A	N/A	N/A
Gas Engine Vibrator	N/A	N/A	N/A
Generator 5KW	N/A	N/A	N/A
HDEP Welder (pipe or liner)	N/A	N/A	N/A
5 Ton Crane Truck	N/A	N/A	N/A
25 Ton Crane	N/A	N/A	N/A
<b>Trucks</b>			
769D			
777D			

613E (5,000 gal) Water Wagon			
621E (8,000 gal) Water Wagon			
Dump Truck (10-12 yd3 )			

Notes:

(1) Unit Cost Basis:			
(2) Cost Basis:			
(3) Tire Cost Source:			
(4) Tire Wear Source (defined in model):			


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Basis 4	Basis 5	Basis 6	Basis 7	Basis 8

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Catepillar model or equivalent	Catepillar model or equivalent	Catepillar model or equivalent	Catepillar model or equivalent	Catepillar model or equivalent



<b>Basis 4</b>	<b>Basis 5</b>	<b>Basis 6</b>	<b>Basis 7</b>	<b>Basis 8</b>












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N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

N/A	N/A	N/A	N/A	N/A
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N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
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N/A	N/A	N/A	N/A	N/A
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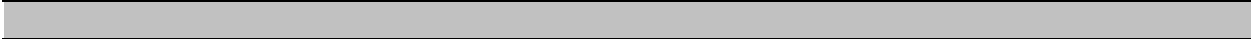
Basis 4	Basis 5	Basis 6	Basis 7	Basis 8

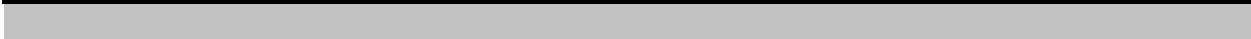













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N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A



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<b>Basis 4</b>	<b>Basis 5</b>	<b>Basis 6</b>	<b>Basis 7</b>	<b>Basis 8</b>
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N/A	N/A	N/A	N/A	N/A
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N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

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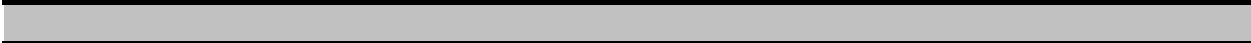
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Basis 9	Basis 10	Basis 11	Basis 12	Basis 13


























Catepillar model or equivalent	Catepillar model or equivalent	Catepillar model or equivalent	Catepillar model or equivalent	Catepillar model or equivalent



Basis 9	Basis 10	Basis 11	Basis 12	Basis 13












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N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

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N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
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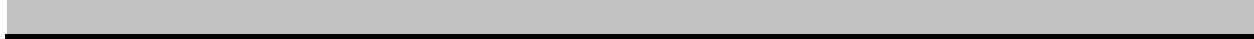
Basis 9	Basis 10	Basis 11	Basis 12	Basis 13

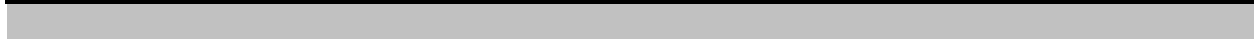


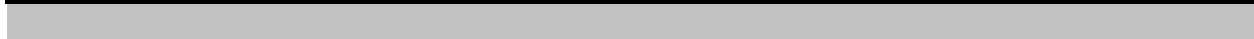








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N/A	N/A	N/A	N/A	N/A



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<b>Basis 9</b>	<b>Basis 10</b>	<b>Basis 11</b>	<b>Basis 12</b>	<b>Basis 13</b>
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N/A	N/A	N/A	N/A	N/A	N/A
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Basis 14	Basis 15
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N/A	N/A

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<b>Basis 14</b>	<b>Basis 15</b>
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N/A	N/A
N/A	N/A
N/A	N/A



<b>OTHER EQUIPMENT</b>							<b>\$ -</b>
420D 4WD Backhoe				\$ -	\$ -	\$ -	\$ -
Light Truck - 1.5 Ton				\$ -	\$ -	\$ -	\$ -
Supervisor's Truck				\$ -	\$ -	\$ -	\$ -
Welding Equipment				\$ -	\$ -	\$ -	\$ -
Drilling Rig				\$ -	\$ -	\$ -	\$ -
Pump (plugging Drill Rig				\$ -	\$ -	\$ -	\$ -
Concrete Pump				\$ -	\$ -	\$ -	\$ -
Gas Enginer Vibrator				\$ -	\$ -	\$ -	\$ -
Generator 5KW				\$ -	\$ -	\$ -	\$ -
HDEP Welder (pipe or liner)				\$ -	\$ -	\$ -	\$ -
5 Tone Crane Truck				\$ -	\$ -	\$ -	\$ -
25 Ton Crane				\$ -	\$ -	\$ -	\$ -
<b>TRUCKS</b>				\$ -	\$ -	\$ -	\$ -
769D				\$ -	\$ -	\$ -	\$ -
777D				\$ -	\$ -	\$ -	\$ -
613E (5,000 gal) Water Wagon				\$ -	\$ -	\$ -	\$ -
621E (8000 GAL) Water Wagon				\$ -	\$ -	\$ -	\$ -

Date:

**LABOR COST**

<b>EQUIPMENT OPERATOR TYPE OR JOB DESCRIPTION HRLY RATES</b>	<b>\$ RATE</b>	<b># HRS</b>	<b>Cost</b>
<b>Bulldozers</b>			<b>\$ 12,000.00</b>
D6R	\$25.00	80	\$ 2,000.00
D7R	\$25.00	80	\$ 2,000.00
D8R	\$25.00	80	\$ 2,000.00
D9R	\$25.00	80	\$ 2,000.00
D10R	\$25.00	80	\$ 2,000.00
D11R	\$25.00	80	\$ 2,000.00
<b>Motor Graders</b>			<b>\$ 4,000.00</b>
14G/H	\$25.00	80	\$ 2,000.00
16G/H	\$25.00	80	\$ 2,000.00
<b>Track Excavators</b>			<b>\$ 8,000.00</b>
320C	\$25.00	80	\$ 2,000.00
325C	\$25.00	80	\$ 2,000.00
345B	\$25.00	80	\$ 2,000.00
385BL	\$25.00	80	\$ 2,000.00
<b>Scrapers</b>			<b>\$ 4,000.00</b>
631G	\$25.00	80	\$ 2,000.00
637G PP	\$25.00	80	\$ 2,000.00
<b>Wheeled Loaders</b>			<b>\$ 10,000.00</b>
928G	\$25.00	80	\$ 2,000.00
966G	\$25.00	80	\$ 2,000.00
972G	\$25.00	80	\$ 2,000.00
988G	\$25.00	80	\$ 2,000.00
992G	\$25.00	80	\$ 2,000.00
<b>Hydraulic Hammers</b>			<b>\$ 6,000.00</b>
H-120 (fits 325)	\$25.00	80	\$ 2,000.00
H-160 (fits 345)	\$25.00	80	\$ 2,000.00
H-180 (fits 365/385)	\$25.00	80	\$ 2,000.00
<b>Other Equipment</b>			<b>\$ 28,000.00</b>
420D 4WD Backhoe	\$25.00	80	\$ 2,000.00
CS563E Vibratory Roller	\$25.00	80	\$ 2,000.00
Light Truck - 1.5 Ton	\$25.00	80	\$ 2,000.00
Supervisor's Truck	\$25.00	80	\$ 2,000.00
Air Compressor + tools	\$25.00	80	\$ 2,000.00



Welding Equipment	\$25.00	80	\$ 2,000.00
Heavy Duty Drill Rig	\$25.00	80	\$ 2,000.00
Pump (plugging) Drill Rig	\$25.00	80	\$ 2,000.00
Concrete Pump	\$25.00	80	\$ 2,000.00
Gas Engine Vibrator	\$25.00	80	\$ 2,000.00
Generator 5KW	\$25.00	80	\$ 2,000.00
HDEP Welder (pipe or liner)	\$25.00	80	\$ 2,000.00
5 Ton Crane Truck	\$25.00	80	\$ 2,000.00
25 Ton Crane	\$25.00	80	\$ 2,000.00
<b>Fringe Benefits</b>			<b>\$ 5,000.00</b>
Equip Op Fringe Benefits (\$/hr)			
<b>NOTES:</b>			
<b>TRUCK DRIVERS - Labor Groups and Base Pay Rate (\$/hr)<sup>(4)</sup></b>			<b>\$10,000.00</b>
769D	\$25.00	80	\$2,000.00
777D	\$25.00	80	\$2,000.00
613E (5,000 gal) Water Wagon	\$25.00	80	\$2,000.00
621E (8,000 gal) Water Wagon	\$25.00	80	\$2,000.00
Dump Truck (10-12 yd <sup>3</sup> )	\$25.00	80	\$2,000.00
<b>Fringe Benefits</b>			<b>\$ 5,000.00</b>
Truck Driver Fringe Benefits (\$/hr)			
<b>NOTES:</b>			
<b>LABORERS - Labor Groups and Base Pay Rate (\$/hr)<sup>(6,7)</sup></b>			<b>\$0.00</b>
General Laborer			\$0.00
Skilled Laborer			\$0.00
Driller's Helper			\$0.00
Rodmen (reinforcing concrete)			\$0.00
<b>Fringe Benefits</b>			
Laborer Fringe Benefits (\$/hr)			
<b>PROJECT MANAGEMENT AND TECHNICAL LABOR - Base Pay</b>			
<b>Rate (\$/hr)<sup>(9)</sup></b>			<b>\$ -</b>
Project Manager			\$ -
Foreman			\$ -
surveyor			\$ -
Engineer Design			\$ -
Field Engineer			\$ -
Field Tech/Sampler			\$ -
Range Scientist			\$ -
Field Geologist			\$ -
Field Archeologist			\$ -
<b>NOTES:</b>			
(9) Project Manager:			
(9) Foreman Source:			

(9) Technical Labor Source:			
<b>TOTAL LABOR COST</b>			
<b>TOTAL FRINGE BENEFITS</b>			
<b>TOTAL LABOR AND FRINGE</b>			
<b>INDIRECT COSTS</b>			
<b>SOCIAL SECURITY, WORKMAN'S COMP, INSURANCE, ETC.</b>			<b>\$ -</b>
Unemployment (%)		21.00%	\$ -
FICA/Medicare (%)		21.00%	\$ -
Workman's Compensation (%)		21.00%	\$ -
		21.00%	\$ -
		21.00%	\$ -
		21.00%	\$ -
<b>NOTES:</b>			
(10) Workman's Comp Source:			

<b>File Name:</b>	
<b>Date:</b>	
<b>Cost Basis:</b>	
<b>Author/Source:</b>	

<b>RECLAMATION MATERIAL COST TABLE</b>
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<b>Seed Mixes</b>	<b>\$ -</b>
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Seed Mix	Length	Width	Acres Covered	Seed Cost	Number of sacks	Unit Cost
Seed 1:						\$ -
Seed 2:						\$ -
Seed 3:						\$ -
Seed 4:						\$ -
Seed 5:						\$ -
Seed 6:						\$ -
Seed 7:						\$ -
Seed 8:						\$ -
Seed 9:						\$ -

Seed Mix sheet) Interdisiplinary work sheet

Notes: Intrum seed mix

Notes: Final seed mix ( )

<b>Mulch</b>	<b>\$ -</b>
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Item	Length	Width	Acres Covered	Cost	Number of Lbs	Unit Cost
None						
Straw Mulch						\$ -
Hydro Mulch						\$ -

Notes:

<b>Amendments</b>	<b>\$ -</b>
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Item			cost	No. Lbs	Unit Cost
None					
Organic Matter					\$ -
Treated Sludge					\$ -
Chemical					\$ -
					\$ -
					\$ -
					\$ -

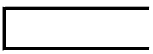
Notes:

<b>Well Abandonment Materials</b>	<b>\$ -</b>
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Description - cy			cost	No.sacks	Unit Cost



Notes:



<b>BLM ROW</b>	<b>ROW TYPE</b>	<b>RCE</b>	
<a href="#">WYW-65819</a>	Pipeline	\$2,608.20	Waiting on Bond Subm
<a href="#">WYW-142481</a>	Road	\$139,418.76	Waiting on Bond subm
<a href="#">WYW-163391</a>	Maintain well pad on federal lands	\$34,478.23	Waiting on Bond Subm
<a href="#">WYW-170769</a>	Maintain multi-well pad on federal lands (no underlying oil and gas lease)	\$147,275.15	Bond submitted and ac
<a href="#">WYW-67639</a>	Road & Meter	\$8,011.15	Waiting on Bond Subm
<a href="#">WYW-143277</a>	Water Treatment Facility	\$10,823.13	
<a href="#">WYW-170770</a>	Power Line	\$0.00	Bond is required waitir

**ASSUMPTIONS:**

- 1 Volume of material for road work was estimated to be the same as the material removed from the ditches 1' deep with 3:1 slope - 6 cubic feet per foot of ROW.
- 2 There is no salvage value for any materials removed; culverts, tanks, etc.
- 3 Topsoil volume = ROW width x ROW length x 6" thick.
- 4 The same amount of time is required by the BLM Procurement Specialist to prepare necessary contract documents, regardless of the project size.
- 5 The BLM Engineer will be on-site during most of the construction. Does not include travel time or travel expenses.
- 6 Assumed that pipeline ROWs do not require revegetation.
- 7 No costs were developed for power lines. Power lines assumed to belong to utility company.
- 8 Estimates are based on ROW written descriptions and attached maps. No field verification was performed. This includes the number of culverts.
- 9 Erosion control includes snow fence and/or silt fence. The cost of snow fence was used since it was the most expensive. Actual locations were not determined.
- 10 Costs do not include:
  - Inspection and re-seeding as result of inspection.
  - Preparation of SWPPP if required and associated inspections.
- 11 Cost estimate includes a 10% contingency factor.

ission 3/22/2016

ission 3/22/2016

ission 3/22/2016



Accepted assignment approved 10/8/2015

ission 3/22/2016

ing on estimate and submission 3/22/2016



**BLM ROW** WYW-65819

**ROW TYPE** Pipeline

0.138

**Location** See ROW Agreement

<b>Task</b>	<b>Description</b>	<b>Staff/Item</b>
Direct Costs		
1	Mob/Demob - Backhoe	Backhoe w/ oper
2	Excavate at each end of line	
3	Vac fluids from line and flush	
4	Backfill and seed	
6	Seeding (broadcast by hand)	
	Seed	
	Fertilize	
	Mulch	
	Subtotal	
	Contingency 10%	
	Subtotal	
	(1) From: <i>RS Means Heavy Construction Cost Data (2014)</i>	
BLM Administration		
	Procurement Spec	Procurement Spec
	Engineer	Engineer
	Subtotal	
	Grand Total	

Acres

50' ROW

120 Feet

Quantity	Unit Cost	Rate (1)	Total
1	Each	\$505.00	\$505.00
6.0	M.S.F	\$65.00	\$390.73
0.1	Acre	\$265.00	\$36.57
6.0	M.S.F	\$61.50	\$369.69
			\$1,302.00
			\$130.20
			\$1,432.20
32	Hour	\$20.00	\$640.00
16	Hour	\$33.50	\$536.00
			\$1,176.00
			\$2,608.20

**BLM ROW**      WYW-142481  
**ROW TYPE**     Road  
**Location**      See ROW Agreement

Task	Description	Staff/Item
Direct Costs		
1	Mob/Demob - Dozer & Excavator	Dozer & Excavator
2	Recontour to preconstruction contours with dozer	Dozer w/ oper
3	Remove CMP culverts (2 - 18") (4 hours each)	Excavator w/ oper
4	Apply top soil from pile or along edges of ROW	
5	Mob/Demob - Seeding equipment	
6	Seeding	
	Seed	
	Fertilize	
	Mulch	
7	Erosion control	Snow/silt fence
	Subtotal	
	Contingency 10%	
	Subtotal	
	(1) From: <i>RS Means Heavy Construction Cost Data (2014)</i>	
BLM Administration		
	Procurement Spec	Procurement Spec
	Engineer	Engineer
	Subtotal	
	Grand Total	

Acres          75' ROW          5,800 Feet

Quantity	Unit Cost	Rate (1)	Total
2	Each	\$505.00	\$1,010.00
1288.9	C.Y.	\$4.67	\$6,019.11
8	Hour	\$270.00	\$2,160.00
8066.66667	C.Y.	\$6.40	\$51,626.67
1	Each	\$505.00	\$505.00
435.6	M.S.F	\$65.00	\$28,314.00
10.0	Acre	\$265.00	\$2,650.00
435.6	M.S.F	\$61.50	\$26,789.40
580	L.F	\$3.82	\$2,215.60
			\$121,289.78
			\$12,128.98
			\$133,418.76
32	Hour	\$20.00	\$640.00
160	Hour	\$33.50	\$5,360.00
			\$6,000.00
			\$139,418.76

**BLM ROW****ROW TYPE** Well Pad

2.75

**Location** See ROW Agreement

1616 cy topsoil

<b>Task</b>	<b>Description</b>	<b>Staff/Item</b>
Direct Costs		
1	Mob/Demob - Dozer	
2	Recontour to preconstruction contours with dozer	Dozer w/ oper
3	Remove CMP culvert	Excavator w/ oper
4	Apply top soil from pile or along edges of ROW	
5	Mob/Demob - Seeding equipment	
6	Seeding	
	Seed	
	Fertilize	
	Mulch	
7	Erosion control	Snow/silt fence
	Subtotal	
	Contingency 10%	
	Subtotal	
	<i>(1) From: RS Means Heavy Construction Cost Data (2014)</i>	
BLM Administration		
	Procurement Spec	Procurement Spec
	Engineer	Engineer
	Subtotal	
	Grand Total	

Acres 330' x 400'  
 651 cy fill

Quantity	Unit Cost	Rate (1)	Total
1	Each	\$505.00	\$505.00
651.0	C.Y.	\$4.67	\$3,040.17
0	Hour	\$270.00	\$0.00
1616	C.Y.	\$6.40	\$10,342.40
1	Each	\$505.00	\$505.00
		\$0.00	
119.8	M.S.F	\$65.00	\$7,786.35
2.8	Acre	\$265.00	\$728.75
119.8	M.S.F	\$61.50	\$7,367.09
0	L.F	\$3.82	\$0.00
			\$30,274.76
			\$3,027.48
			\$33,302.23
32	Hour	\$20.00	\$640.00
16	Hour	\$33.50	\$536.00
			\$1,176.00
			\$34,478.23

**BLM ROW** WYW-170769  
**ROW TYPE** Well Pad  
**Location** See ROW Agreement

11.06  
 8921.7 cy topsoil

Task	Description	Staff/Item
Direct Costs		
1	Remove equipment	Vac truck w/ driver
	3 - storage tanks	Crane w/ operator
	1 - dehydrator with drip tank	Transport/winch
	1 - separator	Roustabout crew
	Misc piping and stairs	
2	Remove fence around storage tanks	
3	Mob/Demob - Dozer	
4	Spread tank berms	
5	Recontour to preconstruction contours with dozer	Dozer
6	Apply top soil from pile	
7	Mob/Demob - Seeding equipment	
8	Seeding	
	Seed	
	Fertilize	
	Mulch	
7	Erosion control	
	Subtotal	
	Contingency 10%	
	Subtotal	
	(1) From: <i>RS Means Heavy Construction Cost Data (2014)</i>	
BLM Administration		
	Procurement Spec	Procurement Spec
	Engineer	Engineer
	Subtotal	
	Grand Total	

Acres 330' x 400'  
 651 cy fill

Quantity	Unit Cost	Rate (1)	Total
4	Hour		\$0.00
8	Hour	\$303.35	\$2,426.80
8	Hour	\$162.46	\$1,299.68
12	Hour	\$200.00	\$2,400.00
300	L.F.	\$3.23	\$969.00
1	Each	\$505.00	\$505.00
45	C.Y.	\$4.67	\$210.15
651.0	C.Y.	\$4.67	\$3,040.17
8921.7	C.Y.	\$6.40	\$57,099.07
1	Each	\$505.00	\$505.00
481.8	M.S.F	\$65.00	\$31,315.28
11.1	Acre	\$265.00	\$2,930.90
481.8	M.S.F	\$61.50	\$29,629.08
			\$132,330.13
			\$13,233.01
			\$145,563.15
32	Hour	\$20.00	\$640.00
32	Hour	\$33.50	\$1,072.00
			\$1,712.00
			\$147,275.15



**BLM ROW** WYW-143277  
**ROW TYPE** Water Treatment Facility on Well Pad  
**Location** See ROW Agreement

11.06  
 8921.7 cy topsoil

Task	Description	Staff/Item
Direct Costs		
1	Remove equipment	Vac truck w/ driver
	3 - 400 bbl storage tanks	Crane w/ operator
	1 - 2500 gal reactor tank	Transport/winch
	1 - 55 gallon tank and pump	Roustabout crew
	Misc piping, stairs, blower and heater	Electrician
	1 - 16' x 20' metal building	
	1 - electric generator	
	Subtotal	
	Contingency 10%	
	Subtotal	
	(1) From: <i>RS Means Heavy Construction Cost Data (2014)</i>	
BLM Administration		
	Procurement Spec	Procurement Spec
	Engineer	Engineer
	Subtotal	
	Grand Total	

Acres        330' x 400'  
 651 cy fill

Quantity	Unit Cost	Rate (1)	Total
4	Hour	\$95.00	\$380.00
8	Hour	\$303.35	\$2,426.80
8	Hour	\$162.46	\$1,299.68
20	Hour	\$200.00	\$4,000.00
4	Hour	\$105.00	\$420.00
			\$8,526.48
			\$852.65
			\$9,379.13
32	Hour	\$20.00	\$640.00
24	Hour	\$33.50	\$804.00
			\$1,444.00
			\$10,823.13

**From:** Whitney, John (Bennet)  
**To:** [Welch, Ruth](#)  
**Subject:** Herald letter  
**Date:** Monday, May 02, 2016 11:20:32 AM

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<http://www.durangoherald.com/article/20160410/OPINION03/160419971/0/opinion03/Drilling-HDs-a-slap-in-Utes%E2%80%99-faces>

## Drilling HDs a slap in Utes' faces

**T**he public discussion of oil and gas leases in the northern HD Mountains

seems, so far, to have proceeded in a certain vacuum, with the main affected party strangely absent. So, just to set the record straight: The northern part of the HD Mountains was stolen from the Southern Ute reservation and later turned over to the BLM/Forest Service. It still falls within the external boundary of the reservation, sticking out like a sore thumb.

The entire HD range, but especially the northern heights, has always been sacred to the Southern Ute people. First, according to elders no longer with us, the Ute Bear Dance originated in the HDs, where two wandering Ute brothers met a she-bear who taught them the ceremony, designed to celebrate the awakening of the Earth in the spring (late April). The traditional Ute name for the HDs is kwiyağa-tu--paa-tu-: "place of the bear."

The HD Mountains were also where Ute warriors used to go on their spiritual vision-quests and fast – the precursor to the Ute Sundance. When the Sundance was revived in the mid-1950s, the Sundance ground was moved to its present location near the river. This was not done by accident or whim. The Ute Sundance corral opens to the east, directly facing the northern HDs. When the dancers chant the four sunrise prayer songs, three mornings in a row during the July Sundance, the sun bursts out directly above the rim of the northern HDs, traditionally designated as tava-mawisivee-tu-: "place where the sun rises."

Violating the HDs with oil and gas rigs is not only tampering with Mother Earth and despoiling our environment; it is also grave sacrilege, trashing a sacred ground, akin to despoiling a church. It is also, lastly, a slap in the face of the Ute people.

Pearl Casias, former Southern Ute Indian Tribal Council chairwoman

Ignacio

**From:** Bina, Betsy  
**To:** [Smith, Linda](#); [Tonya Jackson](#)  
**Subject:** BLM QFRs  
**Date:** Monday, May 02, 2016 11:25:38 AM  
**Attachments:** [Returned House IE Subcommittee FY17 BLM Hearing QFRs.pdf](#)

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Good morning. There is a chart on page 3 that indicates that \$16M was used for “National Agreements/Contracts and WO FTEs”. Can you tell me more about these national agreements? We are getting some heat that “most” of the increase provided in FY 16 “stayed in DC”. Thank you,  
Betsy

Betsy Bina  
House Interior Appropriations Subcommittee  
B-308 Rayburn House Office Building  
Washington, D.C. 20002  
202-225-3081

U.S. House of Representatives  
 Committee on Appropriations  
 Subcommittee on Interior, Environment, and Related Agencies  
 FY17 Budget Hearing: Bureau of Land Management  
 March 3, 2016

Questions for the Record—Director of the Bureau of Land Management

**Questions from Mr. Calvert**

**Sage-Grouse**

BLM has requested a total of \$79,000,000 for sage-grouse conservation in FY 2017. The Committee requests additional information on how the Bureau spent the funds provided in the FY 2016 omnibus appropriations package and plans to allocate any funds that will be provided in FY 2017.

**Calvert Q1:** Please describe how FY 2016 funds were allocated by activity, such as conservation measure implementation, assessment, monitoring, travel management, and inventory.

**Answer:** As of March 21, 2016, the FY 2016 funds have been distributed as follows:

Category	Funding Source	Amount
Outreach, Training, Regional Support Teams, and Implementation Coordinators	Wildlife Management Program	\$9,752,000
Data Support & Disturbance Tracking	Wildlife Management Program	\$3,520,000
	Resource Management Planning (Assessment, Inventory, and Monitoring)	\$2,080,000
Monitoring and Land Health Assessments	Wildlife Management Program	\$4,180,000
	Resource Management Planning (Assessment, Inventory, and Monitoring)	\$5,920,000
Mineral Withdrawal Process*	Wildlife Management Program	\$10,600,000
Vegetation Treatments and Habitat Restoration	Wildlife Management Program	\$18,030,000
Travel and Transportation Plans	Wildlife Management Program	\$1,000,000
Wild Horse and Burro (Sagebrush Focal Areas) Gathers & Holding	Wildlife Management Program	\$2,500,000

Litigation and Planning	Wildlife Management Program	\$2,418,000
<b>Total Sage-grouse Specific Funding:</b>		<b>\$60,000,000</b>

Category	Funding Source	Amount
Vegetation Treatments and Habitat Restoration	Healthy Lands Program	\$4,000,000
	Native Plants Program	\$4,000,000
<b>Total Base Funding Allocated for Sage-grouse:</b>		<b>\$8,000,000</b>
<b>GRAND TOTAL for Sage-grouse Conservation**:</b>		<b>\$68,000,000</b>

\* FY 2016 only. BLM will not have related costs in FY 2017 and beyond.

\*\* In addition to the \$60.0 million in Sage Grouse specific funds, the BLM included \$8.0 million in base funding. The Healthy Lands Program and the Native Plant Program each distributed \$4.0 million to the States to complete projects in priority habitat. Thus, the overall total allocated to Sage Grouse specific work is \$68.0 million.

**Calvert Q2:** Please describe how FY 2017 funds are expected to be allocated by activity, such as conservation measure implementation, assessment, monitoring, travel management, and inventory.

**Answer:** The following activities are anticipated to be funded with the additional \$19.150 million requested for FY 2017:

- \$6.2 million to remove encroaching conifers from priority habitat;
- \$1.4 million for the eradication and control of invasive weeds in priority habitat;
- \$1.0 million to restore and protect riparian areas in priority habitat;
- \$2.3 million to reduce fuels loads in priority habitat;
- \$850,000 to augment post-fire stabilization and rehabilitation efforts through the Sustainability in Prison program. Specifically, these funds would engage an additional 10 prisons in the production of sagebrush plants, increasing the number of plants by 200,000;
- \$1.2 million to support 12 additional permanent Full Time Employees (FTE). Two FTEs would be filled at the National Operations Center to assist in managing and training for data management, geospatial support, and contracting and agreements; the remaining 10 FTEs would be filled in field offices to implement on-the ground implementation;
- \$1.2 million for training and coordination with State and Federal partners to implement the new provisions for habitat conservation;
- \$5.0 million for implementation of the National Seed Strategy in order to respond with appropriate restoration resources to landscape-scale ecological changes due to drought, invasive species, and catastrophic wildfires.

Also, sage grouse base funding (\$60.0 million) is anticipated to be distributed to the following activities in FY 2017:

- \$4.3 million for assessment, inventory and monitoring;
- \$6.9 million for enterprise geospatial information system support;
- \$5.7 million to complete planning (project level NEPA) for on-the-ground projects in priority habitat;
- \$1.6 million for development and completion of Ecological Site Descriptions (ESD) in priority habitat;
- \$1.5 million for restoration and protection project for riparian areas in priority habitat; and
- \$40.0 million to implement sage grouse habitat restoration and improvement projects in upland and wet meadows areas in priority habitat.

**Calvert Q3:** Please provide a break out of how the funds were allocated by State in FY 2016.

**Answer:** The \$68.0 million was allocated to the following States, centers and offices in FY 2016:

<b>Office</b>		<b>Amount</b>
CA		\$2,250,000
CO		\$5,030,000
ID		\$3,680,000
MT		\$4,160,000
NOC		\$1,090,000
NV		\$5,170,000
OR		\$3,700,000
UT		\$4,400,000
WY		\$3,480,000
WO	Mineral Withdrawals	\$10,600,000
	WHB Gathers and costs related to removals (funding used in States)	\$2,500,000
	Mitigation Plan Contracts (plans will be used by State, district and field offices)	\$3,540,000
	Travel & Transportation planning (funding will be distributed to State operations)	\$1,000,000
	Decision file and administrative record (covers States and Washington office)	\$1,400,000
	National Agreements/Contracts & WO FTEs (support for tracking sage grouse implementation)	\$16,000,000
<b>TOTAL*</b>		<b>\$68,000,000</b>



\* In addition to the \$60.0 million in Sage Grouse specific funds, the BLM included \$8.0 million in base funding. The Healthy Lands Program and the Native Plant Program each distributed \$4.0 million to the states to complete projects in priority habitat. Thus, the overall total allocated to Sage Grouse specific work is \$68.0 million.

**Calvert Q4:** Please update the information provided in FY 2016 QFRs regarding funding used for coordination with other Federal agencies, State and local governments, and partners.

**Answer:** Currently, Wildlife Management Program funds are being used to:

1. Appoint a regional implementation coordinator in each of the Great Basin and Rocky Mountain regions to oversee and track implementation, coordinate across State and regional boundaries and entities, report and analyze progress, identify key issues, ensure consistent approaches, resolve differences, and provide support to the regional support teams.
2. Stand up three regional support teams: two in the Great Basin region (Boise for the northern and Reno for the southern portion), and one in the Rocky Mountain region (Denver). These teams will support and facilitate field and regional level project planning.
3. Hire State implementation coordinators to coordinate annual programs of work, monitor, track and report progress, and coordinate issues across State and management zone boundaries.
4. Establish a conservation team or teams(s) to develop management zone mitigation strategies and to facilitate coordination of adaptive management monitoring and response across State boundaries. The DOI, BLM Headquarters, and States are developing a strategy to move forward with this action. The conservation teams are intended to provide technical expertise and coordinate with State and regional implementation coordinators, as well as the regional leadership committees, and;
5. Establish Two Regional Leadership Coordination Committees (West/Great Basin and East/Rocky Mountain) to provide regional guidance, coordination, and prioritization to implement the Integrated Rangeland Fire Management Strategy and the Greater Sage-Grouse Land Use Plans, particularly those actions related to conservation and restoration efforts within the sagebrush-steppe ecosystem. The committee will consist of executive representatives, led by the BLM with core membership from the U.S. Fish and Wildlife Service (USFWS), U.S. Geological Survey (USGS), and appropriate State, tribal, and Federal agencies, all of whom will be invited to participate on the committee, including the U.S. Department of Agriculture (the Natural Resources Conservation Service and U.S. Forest Service). Optional committee members include the Bureau of Indian Affairs and National Park Service. Progress reporting and coordination with the DOI leadership will occur through the Department's Strategy Implementation Manager. The Strategy Implementation Manager is responsible for day to day status oversight and tracking, coordination and facilitation, identification of issues and resolving differences in support of the Action Plan developed to implement Secretarial Order 3336. The Regional Leadership Coordination Committees will coordinate regional science activities with the Great Basin Landscape

Conservation Cooperative (West/Great Basin LLC) and Great Northern LCC (East/Rocky Mountains Region), including through the Sage-Steppe Forum, to provide a mechanism for information sharing and lessons learned, identify science needs, assist in translating science into actionable management, and generally provide opportunities to coordinate among a wide variety of partners on issues related to sagebrush-steppe conservation and restoration, including fuels management and post-fire restoration. Other partners may include, and are not limited to: The Western Association of Fish and Wildlife Agencies, Great Basin Consortium, Great Basin Research and Management Partnership, Great Basin Fire Science Exchange, Range-wide Interagency Sage-grouse Conservation Team, Joint Fire Science Program, Southern Rockies LCC, Plains and Prairie Potholes LCC, Cooperative Research Units, academic and research institutions, tribes, tribal organizations, non-governmental organizations, private landowners, and other regional partners.

### **Native Plants/National Seed Strategy**

**Calvert Q5:** Please update the information provided in the FY 2016 QFRs regarding funding allocated in FY 2014 and 2015 for the Native Plant Materials Development Program to include FY 2016.

**Answer:** Funding allocated to the Native Plant Materials Development program in FY 2016 totals \$8.35 million, which includes \$750,000 from Sage-grouse funding. Program resources by subactivity are listed below.

<b>Subactivity</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Soil, Water and Air Management	\$3.0 million	\$3.0 million	\$3.0 million
Wildlife Management	\$4.6 million	\$5.0 million	\$5.35 million
Disaster Relief Appropriations Act, 2013 (Funds allocated to BLM in FY 2014)	\$3.5 million	0	0
<b>Total</b>	<b>\$11.1 million</b>	<b>\$8.0 million</b>	<b>\$8.35 million</b>

**Calvert Q6:** Please provide additional information on how the additional \$5 million requested to implement the National Seed Strategy will be used, including information on the activities planned (expanding native seed inventory, cleaning and storing seed, etc.) under the strategy.

**Answer:** The BLM currently plans to allocate the additional \$5 million requested to implement the National Seed Strategy in support of the following goals:

**Goal 1: Identify seed needs and ensure the reliable availability of genetically appropriate seed reserves (\$2.57 million)**

- 350 new collections of native seed
- 70 one-acre plots of grass seed production
- 63 one-acre plots for forb seed production
- Partial funding of National Assessment of Federal, Tribal, State and Private seed needs and capacity

**Goal 2: Identify research needs and conduct research to provide genetically appropriate seed and improve technology for native seed production and ecosystem Restoration (\$1.98 million)**

- Seed transfer zones researched for 10 restoration species
- Production protocols for
  - 10 forb species
  - 10 shrub seed orchards

**Goal 3: Develop Tools that Enable Managers to Make Timely, Informed Seeding Decisions for Ecological Restoration (\$350,000)**

- 10 restoration demonstration sites
- Develop enhanced procurement tools for multi-agency seed acquisition

**Goal 4: Develop strategies for internal and external communication (\$100,000)**

- Develop a National Seed Strategy Website
- Develop and Implement Communications Plan

**Calvert Q7:** Overall, how much funding does BLM anticipate allocating to the Plant Conservation Program in FY 2017?

**Answer:** Assuming enactment of the President’s budget request, the BLM anticipates allocating the following resources to the Plant Conservation Program in FY 2017.

Subactivity	2017
Soil, Water and Air Management	\$3.0 million
Wildlife Management	\$10.35million
<b>Total</b>	<b>\$13.35 million</b>

**Calvert Q8:** How many botanists and plant ecologists are employed by the Bureau? Is the Bureau able to fill vacant positions in a timely manner? Are additional botanists and plant ecologists needed in the Bureau?

**Answer:** The Bureau currently has 64 botanists and plant ecologists on board. The BLM moves quickly to fill vacant positions in accordance with available resources, program requirements, and established human resource processes. The BLM is actively evaluating the staffing needed to effectively implement the National Seed Strategy, as well as the Presidential Memorandum on Pollinators and Secretarial Order 3336. Botanists play a critical role in ensuring the conservation of rare plants and sustainability of native plant communities within the BLM’s multiple use and sustained yield mandate.

BLM will further evaluate the need for botanists and plant ecologists as it implements the National Seed Strategy, and assuming funding is provided for the Strategy, BLM will have the means to adjust the number of these positions if deemed necessary.

**Calvert Q9:** Please describe their typical duties and responsibilities and role in a BLM field or regional office.

**Answer:** Typical duties for BLM botanists include subject matter review and technical guidance during the planning process; authoring and assisting in the preparation of National Environmental Policy Act documents; providing quality control for third party botanical survey reports; reviewing and providing guidance on restoration plans; participating in interdisciplinary team meetings; and representing the BLM at meetings with partner agencies and project proponents. BLM botanists frequently consult with the Fish and Wildlife Service on impacts to threatened and endangered plants under Section 7 of the Endangered Species Act.

Other responsibilities include: managing, inventorying, and monitoring Federally listed (Endangered Species Act) plants, State-listed plants, and Bureau special status plant populations; ensuring annual performance requirements are achieved and reported; reviewing and approving the work of third party rare plant surveyors; coordinating with other program areas regarding native seed needs; managing Seeds of Success collection teams; working with private sector growers to produce native seed; procuring native seed; coordinating eco-regional native plant programs; preparing and submitting funding proposals in response to agency data calls; and representing the BLM at local and regional meetings.

### **Wild Horses and Burros**

**Calvert Q10:** Please describe in detail the Bureau's proposal for authority to transfer wild horses and burros to other Federal agencies and state and local governments.

**Answer:** A number of agencies at the Federal, State and local levels use horses as work animals, including the U.S. Border Patrol and various branches of the U.S. Military. With nearly 50,000 animals currently available for adoption through the BLM's Wild Horse and Burro Program, we are seeking to create a mechanism for transfer of horses and burros directly to other agencies when a legitimate need exists.

Currently, under the Wild Free-Roaming Horse and Burro Act of 1971, the BLM can only adopt animals to individuals. As a result, the roughly 300 horses that the BLM has provided to the U.S. Border Patrol over the last decade have been transferred to individual agents in their personal capacity, rather than to the agency. We believe that the existing approach is inefficient and a potential disincentive to the use of wild horses and burros for legitimate public purposes.

The Budget proposal would provide the opportunity for the BLM to directly convey wild horses and burros to other public agencies that have a legitimate need for work animals in their programs. Since each animal that is not adopted can cost the U.S. taxpayer nearly \$50,000 over the course of its lifetime, we are eager to create new opportunities that ensure wild horses and burros find good homes and receive humane care, and also fulfill existing demand among agencies such as the U.S. Border Patrol and the National Park Service.

**Calvert Q11:** Please update the information provided in the FY 2016 QFRs regarding BLM’s research on population control methods for wild horse and burros. How much funding will be dedicated to this activity in FY 2017? What are the sources of the funding?

**Answer:** The BLM has funded 15 research projects directly related to fertility control methods. The total FY 2017 planned budgeted expenditure for the projects is \$2.56 million, as shown in the table below. This list includes funding the WH&B program obligated for these projects in FY 2014, FY 2015, and FY 2016, as seen in the answer to Question 12.

	No. of Projects	FY2017 Expenditures (estimated)\$000
Universities	8	\$1,460
USGS	6	\$1,080
Nonprofit	1	\$ 15
Total	15	\$2,560

The majority of the funding for university and USGS projects was obligated in FY 2014 and FY 2015. The total expenditure of funds will occur over a five-year period while the studies are being completed. Most of the costs are borne by the Wild Horse and Burro Management subactivity; the Rangeland Management and Threatened & Endangered Species Management programs also contributed funds.

**Calvert Q12:** Please update information provided in the FY 2016 QFRs regarding the number and cost of research grants the agency funded in FY 2015 and FY 2016 to include FY 2017.

**Answer:** BLM is currently supporting 24 research projects at a cost of \$13.1 million; project duration ranges from one to five years and the expenditure of these funds will be spread over the life of each project. Some of these projects are not related to population control. In FY2016, the BLM began tracking research-related animal capture and aerial survey costs; these costs are estimated to be \$500,000 a year between FY 2016 and FY 2020. The table below shows the costs of research projects according to the fiscal year for which those funds were obligated.

	Obligations by Fiscal Year (\$000)				
	FY 2014	FY 2015	FY 2016	FY 2017	FY18 - FY20
Universities (10 studies)	–	\$3,420	–	–	
USGS (11 studies)	\$5,260	\$1,500	–	–	
Nonprofit (1 study)	–	–	\$65	–	
Contractors (2 studies)	–	\$346	–	–	
Research-related animal capture and aerial survey costs	–	–	~\$500	~\$500	~\$1,500

**Calvert Q13:** How many population control applications does BLM plan to make in FY 2016 and FY 2017? What methods will be used?

**Answer:** BLM takes very seriously the challenge created by the unsustainable population growth rate of wild horse and burro herds, which is nearly 20 percent per year. While contraceptive birth control methods currently in use can be improved upon, given the severity of the current situation, BLM is committed to taking more aggressive action to expand their use, as well as the application of spay and neuter treatments. Much of this direct action will begin in 2016, and will continue to be supported by the agency's on-going general research efforts to improve the available tools for population control. For example, the BLM will continue working with leading university and U.S. Geological Survey scientists to better refine its population growth suppression methods and overall herd management techniques. BLM is currently assessing an appropriate path forward on the methods and volumes for control applications.

**Calvert Q14:** Please update information provided in FY 2016 regarding estimates of wild horses and burros on the range. What is that status of BLM's estimates? Have improvements been made?

**Answer:** The BLM reports national on-range population estimates annually. The March 1, 2015, estimate was 58,150 (47,329 horses and 10,821 burros) and the data for March 1, 2016, will be published in May. The 2016 values are expected to be consistent with an approximate overall growth rate of about 20% per year, minus the number of animals removed from the range by BLM (between March 1, 2015 and March 1, 2016, BLM removed approximately 3,300 animals from the range).

Program-wide, improvements have been made on the estimation of wild horse and burro population sizes. The National Academy of Sciences (NAS) 2013 Report found that the BLM's wild horse and burro aerial survey methods at that time may have undercounted numbers by as much as 20 to 30 percent on a national basis. The NAS recommended that the BLM adopt new population survey methods developed by the USGS, using more complete surveys and statistical analysis to account for animals that are undetected during aerial survey flights. In 2014, the BLM began using the recommended methods and completed surveys in 77 of the 179 herd management areas (HMAs). In 2015, the BLM completed new method surveys in 56 HMAs, and in 2016, we anticipate that BLM will complete new method surveys in at least 67 HMAs. From 2014 to the present, the vast majority of areas in HMAs have been surveyed with these new methods. The BLM intends to continue to use the new methods and to survey one third of the HMAs annually on a rolling basis.

**Calvert Q15:** How accurate are the agency's estimates? How frequently are the estimates conducted? When was the last one conducted?

**Answer:** BLM conducts aerial surveys of HMAs and surrounding lands outside the HMA when animals have moved outside of management boundaries. Observational data are analyzed to obtain a total population estimate for each surveyed HMA, including both the number of animals actually observed and the estimated number of animals that were present but not seen by any observer.

The accuracy of these surveys can be measured in two ways: in terms of the estimated fraction of horses and burros that were present, but not seen, or in terms of the width of the confidence interval around the total population estimate. First, the average percentage of horses missed in aerial surveys tends to be from 1% to 10% – this value is lowest in HMAs with extremely good visibility, but can be as high as about 30% in densely forested areas. Burros are generally more difficult to see; the percentage of burros not seen is typically estimated to be from 5% to 20%. Second, the width of confidence intervals around population estimates from aerial surveys can be measured as the coefficient of variation (CV). The CV for horse surveys tends to be less than 10% for most individual HMAs, indicating that results from those surveys are fairly precise. For burro surveys, the CV tends to be higher, typically from 10% to 25% which, in most cases, still provides the appropriate level of accuracy needed to make well-informed management decisions. BLM is supporting research to improve the accuracy of burro population survey estimates.

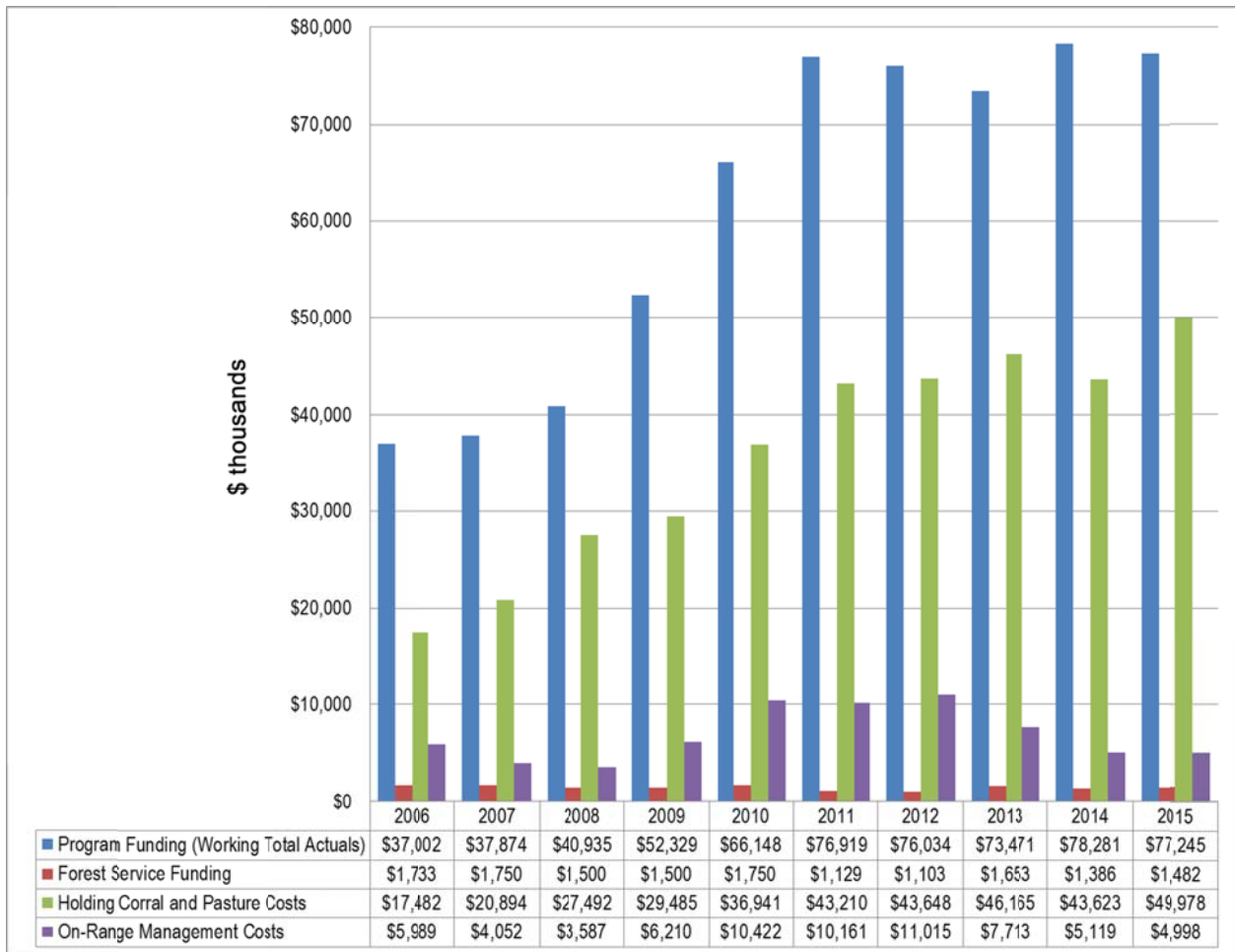
Regarding frequency, the BLM aims for each of the 179 HMAs to be surveyed at least once per three years. Nationwide estimates are compiled on March 1 of each year. The populations for each HMA compiled are based on the most recent survey, but also account for the projected growth rate since that survey, minus the known number of animals that were removed from the population. The next nationwide overall population estimate will be completed March 1, 2016. BLM is currently tabulating the data and intends to publish it in May 2016.

**Calvert Q16:** Does BLM plan to remove wild horses and burros from the range in FY 2016? Please also describe the agency’s plan for FY 2016 and include information regarding its priority for removals.

**Answer:** The Bureau plans to remove up to 3,500 wild horses and burros in FY 2016, which is comparable to the number of animals that will leave BLM facilities through adoptions, sales, or mortality attrition. Additional removals are not possible due to the high costs to maintain unadopted animals, and the limited holding space available. Removals will be prioritized and will primarily occur in response to public health and safety (i.e., animals on the highway, in agricultural fields); private land encroachment; emergencies; greater sage-grouse focal areas; research; and court orders.

**Calvert Q17:** Please provide a 10-year table showing total funding for the wild horse and burro program. Include transfers from other agencies and the allocation of funding between the management of wild horses and burros on the range and those in long-term holding facilities.

**Answer:** The following graph and table lists and displays the total funding per fiscal year, which comprises enacted appropriations, reprogrammings, carryover, and funding transfers from the Forest Service to BLM. The graph and table also shows expenditures for the feeding and care of wild horses and burros in both corrals and pastures (short-term and long-term “holding costs”); and expenditures for on-range management operations. In addition to these two categories of costs identified in the graph and table below, other costs in the WH&B program, which are not included in graph and table, but are also critical components of the WH&B program include research, placement of animals into private care and compliance inspections.



### Cost of Litigation

**Calvert Q18:** In FY 2015, the Bureau implemented a new policy to track the costs of natural resource-related administrative reviews and litigation, including the payment of attorney fees and expenses. Has this policy been fully implemented?

**Answer:** Yes, the BLM issued an instruction memorandum in FY 2015 to implement a new policy for tracking the costs of natural resource-related administrative reviews and litigation.

**Calvert Q19:** Please provide information on the costs of administrative reviews and litigation for FY 2015.

**Answer:** In FY 2015, the total cost of administrative reviews was \$692,823 while costs for litigation totaled \$1,956,848.



## **Data Center Consolidation**

**Calvert Q20:** Please update the information provided in the FY 2016 QFRs regarding data centers that have been consolidated over the past four fiscal years? What is the savings associated with the consolidation?

**Answer:** Since 2011, the BLM has reduced the number of data centers from 51 to 21, achieving a 38 percent cost reduction and \$1.6 million in savings.

**Calvert Q21:** How many additional data centers will be consolidated in FY 2017 and future fiscal years and what are the anticipated savings associated with these actions?

**Answer:** In 2017, 11 additional data centers are planned for closure. Another seven are slated for closure in 2018. If these additional centers are closed, estimated savings as a result of BLM data center consolidation efforts would total nearly \$2.0 million.

## **Law Enforcement**

**Calvert Q22:** BLM's law enforcement officers cover more than a million acres each. As new lands are designated and the duties of the Bureau increase, what law enforcement needs, such as personnel, equipment, training, vehicles, is the Bureau likely to face in the future?

**Answer:** As more Americans visit their public lands and the uses of the nation's natural resources becomes more diverse, carrying out the agency's mission and its accompanying law enforcement responsibilities becomes more complex. The 2017 request for BLM's Law Enforcement program maintains a healthy base as provided in the 2016 appropriation, and additional resource needs associated with new designations would be supported in part by the robust increase requested in the National Conservation Lands program. The combined allocation provides for enhanced law enforcement in existing and newly designated NCL units to address the challenges associated with increased visitation and heightened management and protection responsibilities on these lands. The BLM regularly evaluates program capabilities and changing demands or workloads for all programs, including Law Enforcement, and factors such analyses into the budget formulation process, and will continue to do so.

## **National Monuments**

Two of the newly designated national monuments – Sand to Snow and Mojave Trails – will be managed by the Bureau, and the budget request includes a \$13.7 million increase for National Conservation Lands.

**Calvert Q23:** How will the costs associated with these new national monuments be covered in FY 2016? What are the estimated costs for FY 2017?

**Answer:** For FY 2016, these two new national monuments will be funded by a variety of existing funding sources such as recreation and visitor services, cultural resources protection, law

enforcement, wildlife management, and maintenance. If available, additional funding may be re-allocated from the BLM's National Monuments and National Conservation Areas program.

The BLM is working to determine estimated costs for FY 2017. Costs for new national monuments include basic essential services, such as paying for critical staff, handling increased visitation and law enforcement needs, posting signs and educational materials, conducting public awareness and outreach, developing a land use plan, inventorying resources, objects, and values to be protected, and working with local partners and volunteers.

**Calvert Q24:** Please describe how the Bureau plans to utilize the proposed \$13.7 million increase in FY 2017.

**Answer:** The BLM plans to utilize the proposed \$13.7 million increase to the National Conservation Lands program as described in the FY 2017 budget request. The BLM is currently working internally to identify and rank projects submitted by field and state offices that it will recommend for funding in FY 2017. Top priorities include filling critical management and staff vacancies on the ground to be more responsive to local communities, constructing basic visitor service facilities, facilitating and encouraging public access, and protecting unique resources and fragile objects for which the National Conservation Lands were designated.

### **Land Acquisition**

The Committee understands the Bureau needs some flexibility to manage budgeting uncertainties. Land and easement acquisition projects can be vulnerable to uncertainty due to real estate markets, willingness of sellers and other factors beyond the Bureau's control. The Committee provides flexibility to manage these situations through its reprogramming guidelines. In return, the Committee expects the Bureau to follow the guidelines.

In FY 2015, BLM moved \$995,000 (\$5,000 below the \$1,000,000 reprogramming threshold) from a land acquisition project that had strong Member support to another land acquisition project proposed for FY 2016 without notifying the Committee. BLM reprogrammed this funding despite a House Majority email sent six months prior, warning that such a move would not have had the Committee's support.

**Calvert Q25:** While the amount of funding technically fell below the \$1 million threshold, please explain why the Bureau went ahead with the reprogramming despite the Committee's indication that it would not be supported.

**Answer:** The BLM urgently needed to redirect funding to allow for the purchase of a 602 acre parcel located in the Ironwood Forest National Monument in Arizona to prevent residential development. Unlike the Upper Snake/South Fork River project that was the source of the reprogrammed funds, the Ironwood project had a third party partner and a highly-motivated property owner that were in agreement with all terms of the purchase. This acquisition strengthened the BLM's effort to preserve rare plant species and wildlife habitat and conserve open space landscape values within the Monument.

While the Upper Snake/South Fork landscape is a priority, there were only a few small transactions that were in progress for FY 2015, with no definite commitments for the majority of the funds. At the time of the reprogramming in August 2015, the Upper Snake/South Fork landscape had accumulated an unobligated balance of \$2,895,000 with both FY 2012 and FY 2015 funds. These funds have been extremely difficult to spend down, mostly due to the expectation of willing sellers of higher appraised values. As new willing sellers become available we will proceed with additional transactions in this important area.

**Calvert Q26:** BLM classified the reprogramming as an “internal reprogramming”. Please describe in detail what constitutes an “internal reprogramming” and when and why they are used.

**Answer:** Pursuant to the reprogramming guidelines in the Statement of the Managers accompanying Division F of the FY 2015 Omnibus Appropriations Act (P.L. 113-235), reprogramming actions less than \$1,000,000 or 10 percent of the funding of affected programs, projects, or activities are referred to as “internal reprogrammings,” and do not require advance Congressional approval. However, all reprogrammings are reported to the Committees within 60 days of the end of each quarter.

Reprogrammings are only used when an unforeseen situation arises, and then only if waiting for the appropriations cycle to fund the project or the activity until the next appropriation year would result in actual loss or damage.

## **Questions from Mr. Simpson**

### **Aquifer Recharge in Idaho**

My home state of Idaho is working vigorously to address its water supply issues in the Snake River Basin. The Eastern Snake Plain Aquifer, which is hydraulically connected to the Snake River, is Idaho's largest and most strategic aquifer resource. For the past six decades, the ground water levels in this aquifer have been declining, which has impacted surface flows in the Snake River.

The surface water users and the ground water users in the Snake River Basin above Milner Dam have entered into an historic agreement that seeks to stabilize the ground water level in the Eastern Snake Plain Aquifer. Under the agreement, ground water users have volunteered to reduce their consumptive use of water from the aquifer by 240,000 acre-feet or roughly 12 percent. The State of Idaho is also committing to funding a managed recharge program that seeks to recharge 250,000 acre-feet to the aquifer on an average annual basis.

**Simpson Q1:** I understand that as part of the State's plan, some non-federal canals that currently have easements over BLM land may require some flexibility or modification. But first I'd like to ask if you could please describe the extent to which BLM has been involved in aquifer recharge efforts in Idaho generally and with the recent settlement specifically? Is there anything that BLM could do to provide access across federal lands for recharge projects and to cooperate on placement of recharge projects on federal lands?

**Answer:** The BLM has been, and is currently involved in groundwater augmentation occurring on BLM administered lands in the upper Snake River basin in Eastern Idaho. Specifically, this effort has been conducted in the Idaho Falls and Twin Falls Districts. As for the recent settlement, the BLM looks forward to facilitating the augmentation of groundwater recharge in the capacity where vested water rights are demonstrated and coordinated through the existing managers of the surface water conveyance systems.

Since the management of the public land is conducted for multiple use and sustained yield, the BLM sees support of sustainable groundwater resource as a core responsibility of the organization. As to the specific actions related to providing access across, and the siting of, recharge projects on BLM administered lands, these actions would have to be addressed on a case-by-case basis and be subject to standard processing requirements such as the National Environmental Policy Act and the National Historic Preservation Act.

**Simpson Q2:** Director Kornze, I recognize that specific plans and details are still being worked out in the State, so I won't ask you to endorse specific actions today. I would, however, like to ask for your commitment that you and your staff will continue to work closely with me, my staff, and the State of Idaho to ensure appropriate and timely assistance on the part of the BLM. Will you commit to that?

**Answer:** The BLM is committed to working closely with the State of Idaho, you, and your staff on issues concerning water resources in the Snake River Basin. We look forward to continuing our collaborative efforts in this region.

### **Sage-Grouse Management Plans**

Can you take me through how each of the tiers of management areas impact grazing?

**Simpson Q3:** How do the focal areas impact grazing?

**Answer:** The plans do not set different habitat standards or processes for permit renewal or monitoring in Sagebrush Focal Areas (SFAs), Priority Habitat Management Areas (PHMAs), or General Habitat Management Areas (GHMAs). The plans do not close these areas to grazing or require a one-size-fits-all approach to allotments. Instead, the plans require BLM to prioritize its limited resources on permit processing, monitoring and field checks in SFAs and then PHMAs (and then Important Habitat Management Areas in Idaho) in an effort to ensure that any improper grazing practices are identified and corrected first in the habitat areas most important for sage grouse conservation.

In addition, when doing NEPA analysis as part of grazing authorizations that include lands within SFAs and PHMAs, the BLM will also analyze at least one alternative with thresholds/responses based on habitat objectives, land health standards and ecological site potential, and one or more defined responses in order to allow BLM to work with permittees to address any rangeland health concerns more quickly. The BLM will focus on incorporating these adaptive management thresholds and responses into grazing permits where land health standards are not being met and current livestock grazing is a causal factor or there is a change in management that may affect the ability to achieve land health standards.

Whether in SFAs, PHMAs, or GHMAs, allotments will be assessed according to the same factors, which include both the science describing the habitat conditions in which sage grouse thrive and the ecological site conditions of what any particular allotment can provide.

**Simpson Q4:** How do Priority Habitat Management Areas impact grazing?

**Answer:** Priority Habitat Management Areas (PHMAs) outside of Sagebrush Focal Areas (SFAs) are the second priority for processing grazing permits, conducting monitoring, and incorporating adaptive management thresholds/responses into grazing permits and leases.

**Simpson Q5:** How do General Management Areas impact grazing?

**Answer:** Generally, the last priority for reviewing and processing grazing authorizations will be on allotments in General Habitat Management Areas (GHMAs).

## **Questions from Mr. Stewart**

### **Resource Management Plan Changes**

The proposed rule would eliminate references to “Field Manager” and “State Director”, and replace them with “responsible official” and “deciding official,” respectively. BLM says that this change is because planning areas may extend beyond traditional BLM administrative units. I am concerned this could erode the relationships the State has developed with certain field office managers and the state director.

**Stewart Q1:** How will the BLM ensure that decisions affecting Utah are still made by local BLM officials who are most familiar with Utah issues?

**Answer:** The proposed rule would foster increased coordination between local BLM officials and counties, States, and other important stakeholders by giving additional opportunities within the process for those organizations to provide input. The proposed rule would also provide more clarity to State and local officials about the coordination process, and make it easier for State officials to track BLM planning efforts. Consistent with FLPMA, the BLM will continue to coordinate with all relevant State and local governmental entities, and will strive for consistency with State and local planning efforts. Under the proposed rule, the way that BLM makes on-the-ground implementation decisions would not change. For example, decision-making authority regarding livestock grazing permits, oil and gas leasing, and special recreation permits would continue to reside with the local BLM field or district managers.

**Stewart Q2:** The proposed rule states that “The proposed rule would add new public involvement opportunities” and “would require the BLM to identify public views in relation to resource, environmental, ecological, social, or economic conditions.”

How will the BLM ensure that the public views of the local public (those who are most effected by the BLM’s decisions) will receive the greatest consideration from the BLM?

**Answer:** The new public involvement opportunities included in the proposed rule are meant to enable an ongoing conversation with interested members of the public through the planning process. By hosting public meetings in local communities within the planning area, the BLM will help ensure that the local public can share their views. The BLM has heard from State and local officials about their desire to be more involved in the early stages of the planning process. The proposed rule would achieve this by providing earlier opportunities for coordination and for public involvement during the planning assessment and the preliminary alternatives review. While the proposed rule would require the BLM to consider views from a variety of public sources, the rule would also continue to underscore the importance of the BLM’s unique State, local, and tribal land use plan consistency requirements under FLPMA.

**Stewart Q3:** Goal #1 of the Planning 2.0 Initiative is to “Improve the BLM’s ability to respond to social and environmental changes in a timely manner.”

Will response to social changes include responding to economic hardship induced by BLM land management? Will response to environmental changes include responding to positive environmental changes, such as restoring suspended AUMs to livestock grazers after a wet winter?

**Answer:** One of the ways that the proposed rule allows the BLM to be more responsive to social and environmental changes is by requiring that Resource Management Plans develop an adaptive management framework. The proposed rule would also require that the BLM set standards and intervals for monitoring key indicators for those resources to ensure that we can readily determine whether or not we are meeting resource objectives. By coupling these two provisions, the BLM hopes that we can have more flexibility in making implementation decisions on the ground that can be responsive to changing circumstances.

While suspended AUM decisions are implementation level decisions not made at the larger-scale land use planning level of a Resource Management Plan, we do believe that having more data-informed decisions on the larger scale will make it easier to provide timely responses at the implementation level.

**Stewart Q4:** The proposed rule “would eliminate some Federal Register notice requirements and shorten the minimum requirement for the length of public comment periods for draft resource management plans and draft EIS-level amendments...”

How will the BLM facilitate detailed review by cooperating agencies and government partners during shorter comment periods?

**Answer:** The proposed rule would add two additional opportunities for cooperators and government partners to engage in the planning process. These opportunities include the planning assessment phase, to be completed before initiating scoping, and a public review of preliminary alternatives, to be completed before issuing a draft resource management plan (RMP). Cooperating agencies would have the opportunity to inform and review related documents at both of these steps. This iterative approach to building the baseline report and preliminary alternatives should make the review of the draft RMP quicker to complete for both cooperating agencies and the public at large, since most of this information will have been available for their input and review during earlier development phases of the draft RMP. The timelines set in the proposed rule are required minimums; the BLM would retain the ability to extend comment periods as appropriate.

**Stewart Q5:** The proposed rule would “Replace the requirement that the BLM identify a single preferred alternative in a draft resource management plan and draft EIS with a new requirement that the BLM identify “one or more” preferred alternatives for more consistency with DOI NEPA implementation regulations that apply to draft EISs.”

How should cooperating agencies respond when there could be multiple preferred alternatives in a draft RMP/draft EIS?

**Answer:** In many instances, the preferred alternative reflects the single best alternative, from the BLM’s perspective, to meet the purpose and need for the RMP. In other instances, however,

there may be more than one alternative that could best meet the purpose and need of the RMP. In these cases, encouraging the public and partners to provide feedback on multiple alternatives would ensure that the BLM's selection of a final alternative in the proposed RMP benefits from robust public input on a range of approaches and ideas. Under the current framework, which allows for the identification of just one preferred alternative, the public and partners often limit their analysis to the merits of the single preferred alternative. The identification of multiple preferred alternatives, when appropriate, would help cooperating agencies and the public know that multiple alternatives provide potential viable options for the proposed RMP and help expand their comments on all of those alternatives.



**From:** Moran, Jill  
**To:** [Pearce, Sarah \(Portman\)](#)  
**Subject:** Re: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest  
**Date:** Monday, May 02, 2016 11:41:20 AM

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Hi Sarah,

I am working with our Eastern States office to determine who best can discuss the status. I know you requested to have the call this week, but due to staff availability the week of May 9 may work better on this end. Would that work for you all?

Thanks,  
Jill

On Fri, Apr 29, 2016 at 2:58 PM, Pearce, Sarah (Portman)  
<[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)> wrote:

Hi Jill,

Thanks for the quick reply. Look forward to hearing from you about next week.

Sarah

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Friday, April 29, 2016 2:55 PM  
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**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]

**Sent:** Thursday, April 28, 2016 3:22 PM

**Subject:** FYI: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest

Please see attached.

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Jill Moran

Bureau of Land Management

Legislative Affairs Specialist

202.912.7411

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**To:** ["Moran, Jill"](#)  
**Subject:** RE: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest  
**Date:** Monday, May 02, 2016 11:57:34 AM

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**To:** [Pearce, Sarah \(Portman\)](#)  
**Subject:** Re: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest  
**Date:** Monday, May 02, 2016 2:17:21 PM

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Hi Sarah- How about May 10, 9:00 am?

On Mon, May 2, 2016 at 11:57 AM, Pearce, Sarah (Portman)  
<[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)> wrote:

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**From:** Welch, Ruth  
**To:** [Whitney, John \(Bennet\)](#)  
**Subject:** Re: Herald letter  
**Date:** Monday, May 02, 2016 4:12:10 PM

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Thank you, John.

The protest letter from La Plata is currently at the Solicitor's office. We expect to have responses to our protesters by the end of the week or early next week. We are a little behind on this because of the extension we gave to folks to provide input.

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Thanks -

Ruth

Ruth Welch  
State Director, Colorado  
Bureau of Land Management  
Office - 303-239-3700  
Cell - 703-946-5814

On Mon, May 2, 2016 at 9:20 AM, Whitney, John (Bennet)  
<[John\\_Whitney@bennet.senate.gov](mailto:John_Whitney@bennet.senate.gov)> wrote:

<http://www.durangoherald.com/article/20160410/OPINION03/160419971/0/opinion03/Drilling-HDs-a-slap-in-Utes%E2%80%99-faces>

## Drilling HDs a slap in Utes' faces

**T**he public discussion of oil and gas leases in the northern HD Mountains

seems, so far, to have proceeded in a certain vacuum, with the main affected party strangely absent. So, just to set the record straight: The northern part of the HD Mountains was stolen from the Southern Ute reservation and later turned over to the BLM/Forest Service. It still falls within the external boundary of the reservation, sticking out like a sore thumb.

The entire HD range, but especially the northern heights, has always been sacred to the Southern Ute people. First, according to elders no longer with us, the Ute Bear Dance originated in the HDs, where two wandering Ute brothers met a she-bear who taught them the ceremony, designed to celebrate the awakening of the Earth in the spring (late April). The traditional Ute name for the HDs is kwiya-gha-tu--paa-tu-: "place of the bear."

The HD Mountains were also where Ute warriors used to go on their spiritual vision-quests and fast – the precursor to the Ute Sundance. When the Sundance was revived in the mid-1950s, the Sundance ground was moved to its present location near the river. This was not done by accident or whim. The Ute Sundance corral opens to the east, directly facing the northern HDs. When the dancers chant the four sunrise prayer songs, three mornings in a row during the July Sundance, the sun bursts out directly above the rim of the northern HDs, traditionally designated as tava-mawisivee-tu-: "place where the sun rises."

Violating the HDs with oil and gas rigs is not only tampering with Mother Earth and despoiling our environment; it is also grave sacrilege, trashing a sacred ground, akin to despoiling a church. It is also, lastly, a slap in the face of the Ute people.

Pearl Casias, former Southern Ute Indian Tribal Council chairwoman

Ignacio

**From:** Pearce, Sarah (Portman)  
**To:** ["Moran, Jill"](#)  
**Subject:** RE: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest  
**Date:** Monday, May 02, 2016 4:41:47 PM

---

Hi Jill,

9am on the 10th works well for both myself and Rep. Johnson's office. Thanks for scheduling.

Do you have a conference line? If not, I am happy to send one out.

Thanks,  
Sarah

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Monday, May 02, 2016 2:17 PM  
**To:** Pearce, Sarah (Portman) <[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)>  
**Subject:** Re: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest

Hi Sarah- How about May 10, 9:00 am?

On Mon, May 2, 2016 at 11:57 AM, Pearce, Sarah (Portman) <[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)> wrote:

Hi Jill,

The week of May 9 would work as well. Right now, I am free Monday or Tuesday before 2pm.

Thanks,  
Sarah

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Monday, May 02, 2016 11:41 AM  
**To:** Pearce, Sarah (Portman) <[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)>  
**Subject:** Re: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest

Hi Sarah,

I am working with our Eastern States office to determine who best can discuss the status. I know you requested to have the call this week, but due to staff availability the week of May 9 may work better on this end. Would that work for you all?

Thanks,  
Jill

On Fri, Apr 29, 2016 at 2:58 PM, Pearce, Sarah (Portman)

<[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)> wrote:

Hi Jill,

Thanks for the quick reply. Look forward to hearing from you about next week.

Sarah

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]

**Sent:** Friday, April 29, 2016 2:55 PM

**To:** Pearce, Sarah (Portman) <[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)>

**Subject:** Re: Bureau of Land Management Seeks Comment on Draft Environmental Assessment for Oil and Gas Leasing on Wayne National Forest

Hi Sarah,

Absolutely. I'll check with the Eastern States Office on their availability and be back in touch.

Thanks,

Jill

On Fri, Apr 29, 2016 at 2:49 PM, Pearce, Sarah (Portman)

<[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)> wrote:

Hi Jill,

Thanks for sending this along.

Would you and your team be available for a call sometime next week with myself and staff from Rep. Johnson's office? Just looking for a status update and timeline for leasing.

Thanks,

Sarah

Sarah Pearce

Office of Senator Rob Portman

(202) 224-3353

448 Russell Senate Office Building

Washington, DC 20510

[Sarah\\_Pearce@portman.senate.gov](mailto:Sarah_Pearce@portman.senate.gov)

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]

**Sent:** Thursday, April 28, 2016 3:22 PM

**Subject:** FYI: Bureau of Land Management Seeks Comment on Draft Environmental

Assessment for Oil and Gas Leasing on Wayne National Forest

Please see attached.

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

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202.912.7411

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Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

**From:** Whitney, John (Bennet)  
**To:** [Welch, Ruth](#)  
**Subject:** RE: Herald letter  
**Date:** Monday, May 02, 2016 10:38:30 PM

---

Thanks Ruth, good news on Dominguez. Love to hear more details on that when it's appropriate.

John

**From:** Welch, Ruth [mailto:rwelch@blm.gov]  
**Sent:** Monday, May 02, 2016 2:12 PM  
**To:** Whitney, John (Bennet)  
**Subject:** Re: Herald letter

Thank you, John.

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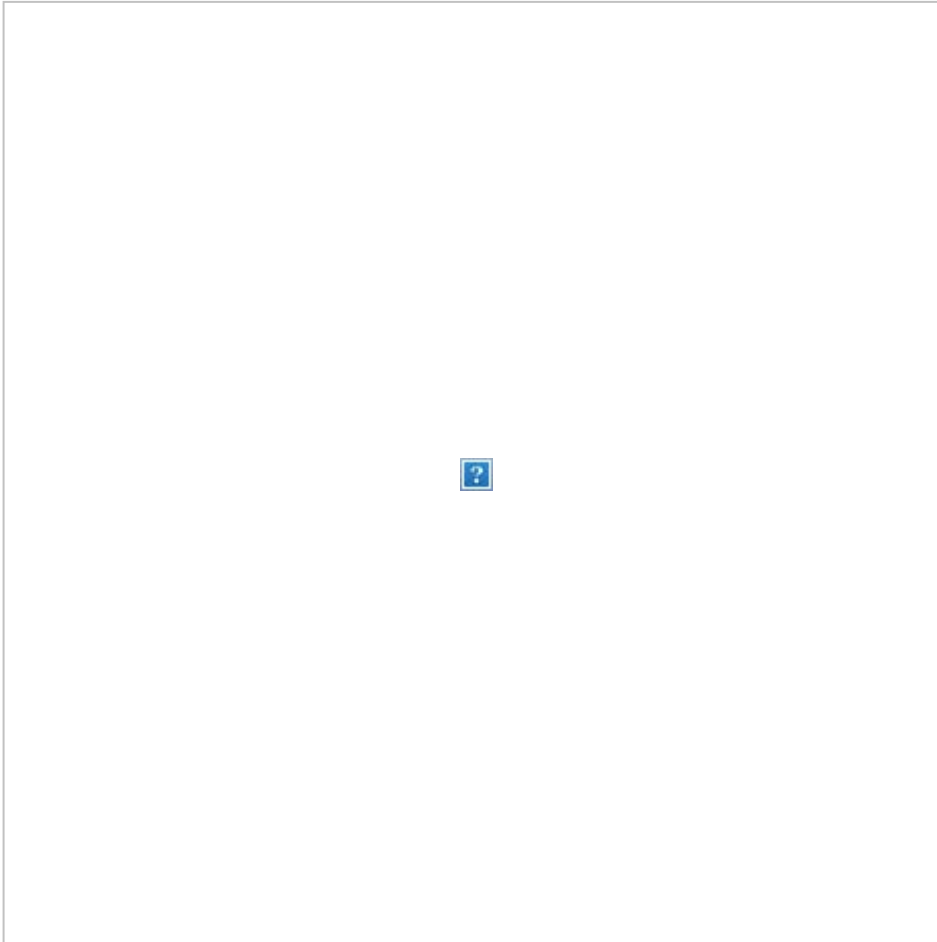
Ignacio

**From:** Senator Jeff Merkley  
**To:** [t1coble@blm.gov](mailto:t1coble@blm.gov)  
**Subject:** Why I'm fighting for clean energy  
**Date:** Tuesday, May 03, 2016 4:54:06 PM

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[Click here to open this e-mail in its own browser window](#) [Click here to open a plain text version of this email](#)

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Dear Teresa,

Every year, I hold a town hall in each of Oregon's 36 counties. Travelling around our great state to meet with Oregonians, I see some of the towering white wind turbines that dot our landscape helping to power our homes, schools and businesses. Earlier this year, the numbers came in:

**[According to the U.S. Energy Information Administration, in 2015, wind energy supplied over 11% of the total electricity generated in Oregon -- and there's no sign of slowing down.](#)**

Wind energy has tremendous potential to power our communities and create jobs throughout rural America. According to a recent report from the Department of Energy, wind energy could supply as much as 35% of America's electricity demand by 2050.

In order to achieve this goal, Congress needs to support critical investments in research and development for this type of clean energy technology.

Recently, the Senate took a big step forward towards this milestone.

[Last week, the Senate passed a bipartisan amendment I offered with Senator Chuck Grassley \(R-IA\) to restore funding for critical wind energy research and development under the 2017 Energy and Water Appropriations bill.](#) Earlier versions of this bill dealt serious cuts to America's wind energy program -- cuts that would've set us back years. That's why I fought so hard to restore this critical funding.

Boosting investments in clean, renewable wind energy is a victory for enhancing American energy independence, reducing carbon pollution, and creating good-paying American jobs all at the same time.

Programs like the Department of Energy's Wind Energy Program provide a critical platform to maintain the pace of innovation in wind energy. [By investing in critical research and development, these innovations help reduce the costs of wind energy, get more clean energy onto our electric grid, and facilitate the rapid growth in renewable energy across the country.](#)

Whether we're investing in innovative clean energy technology or taking historic steps to reduce the impact of dirty fossil fuels on our environment, Oregon is a leader in renewable energy and I've fought every day in the Senate to ensure America leads the world in clean energy innovation and jobs.

I look forward to promoting even more red, white and blue American-made renewable energy and working to create jobs in Oregon and across America.

All my best,

Jeff



**This email was sent to [t1coble@blm.gov](mailto:t1coble@blm.gov)**  
[Visit merkley.senate.gov](http://merkley.senate.gov) | [Contact Jeff](#) | [Unsubscribe](#)

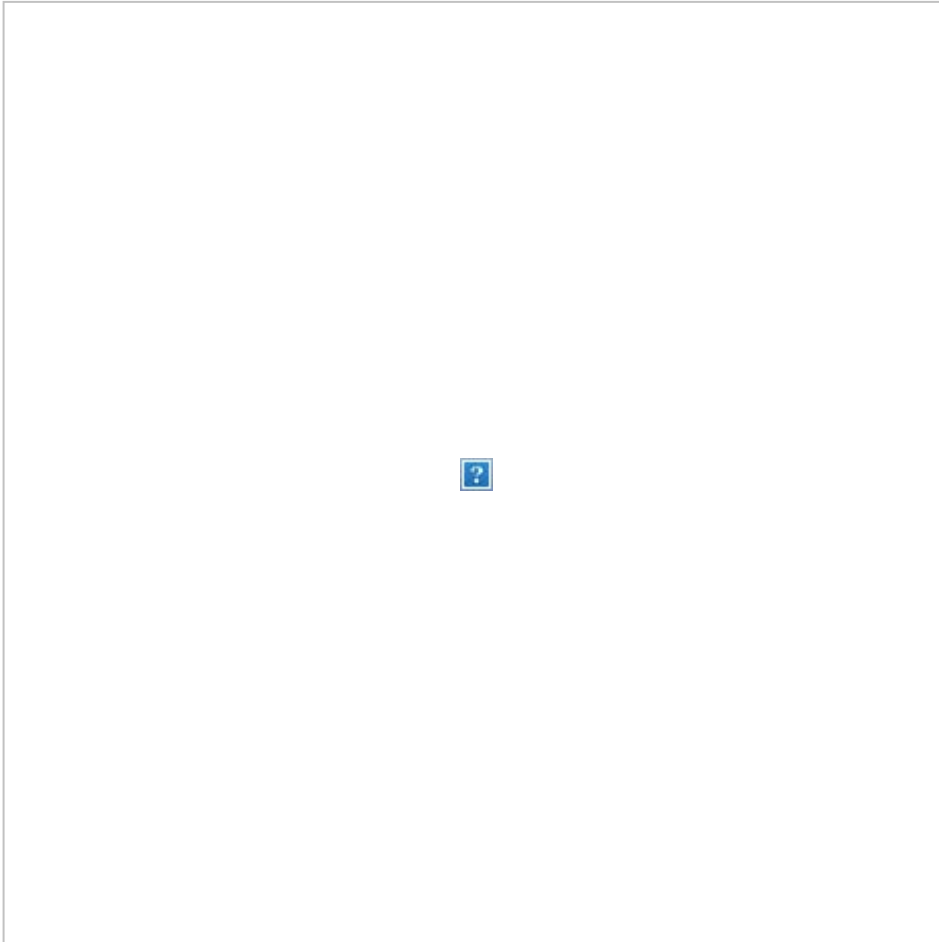
Please note that any reply to this email address will be sent to an unmonitored email address.

**From:** Senator Jeff Merkley  
**To:** [sally\\_ovey@blm.gov](mailto:sally_ovey@blm.gov)  
**Subject:** Why I'm fighting for clean energy  
**Date:** Tuesday, May 03, 2016 5:12:27 PM

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[Click here to open this e-mail in its own browser window](#) [Click here to open a plain text version of this email](#)

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All my best,

Jeff



**This email was sent to [sally\\_sovey@blm.gov](mailto:sally_sovey@blm.gov)**  
[Visit merkley.senate.gov](http://merkley.senate.gov) | [Contact Jeff](#) | [Unsubscribe](#)

Please note that any reply to this email address will be sent to an unmonitored email address.

**From:** Gautreaux, Mary (Wyden)  
**To:** [Campbell, Michael](#)  
**Subject:** FW: Coos and Cow Creek bills - BLM concerns  
**Date:** Wednesday, May 04, 2016 3:06:56 PM  
**Importance:** High

---

### Just so you know the questions that have been presented....

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**From:** Fauerbach, Erin (Wyden)  
**Sent:** Tuesday, November 10, 2015 5:56 PM  
**To:** Gautreaux, Mary (Wyden)  
**Subject:** Coos and Cow Creek bills - BLM concerns

BLM issues with Cow Creek bill:

- Access
  - Is there a precedent for doing an MOU?
  - Would they have to do an MOU with all the private landowners?
  - Recreation access – was negotiated extensively in Sealaska
- Critical habitat management
  - 14,000 out of the 17,000 acres are critical habitat
  - How would that land be managed under the National Indian Forest Resource Management Act?
- Why doesn't the Cow Creek bill include the relinquishment of FLPMA like the Coos bill does?
- What about utility rights?
- Jurisdiction for criminal and civil issues?
- What does it mean to take the lands into trust w/o it being part of a reservation, as far as management of the lands and jurisdiction?
- What about water rights?
- Usually these bills codify an agreement, but there are no agreements here, or a bill wouldn't become effective until all agreements take effect.
- Questions about the land reclassification:
  - There are insufficient acres of Public Domain lands nearby to convert to O&C, so they'd have to look in a different county (but the bill requires that the lands be in the same vicinity)
  - Can that land generate similar receipts? If receipts are less, then the counties lose money.
  - It's an issue of value not of acreage
  - If the lands aren't replaced, or if the lands aren't as valuable, it will affect the allowable sale quantity on NWFP lands.
- Management
  - Are the tribes required to manage the land under the NWFP land use allocations?
- BLM RMP's – BLM would have to modify the plans to adjust to take into account the land transfers to the tribe.
  - Would this be a significant disruption?
  - Would have to be a plan amendment or supplemental.

BLM issues with Coos bill:

- Critical habitat:
  - Spotted owl and marbled murrelet
  - What are the requirements of the tribe to manage the lands for critical habitat under NIFRMA?
    - NIFRMA – primary requirement – can't be any commercial harvesting until a NIFRMA plan is adopted under the BIA, forest plan
    - BIA has an elaborate manual for implementation – plan has to be consistent with ESA, NEPA, and CWA.



- History?
  - Is there a general agreement that these lands be given to the tribe?
  - How was this land and acreage chosen?
  - Other tribes have been required to sign agreements before the land was transferred – will this happen?
- Can the boundaries be reshuffled?
- O&C Replacement lands
  - Comparable condition – there are insufficient acres of Public Domain lands nearby to convert to O&C.
  - Can the replacement lands generate similar receipts?
  - May have to look in a different county – bill requires they be in the same vicinity
  - Could change the receipts received – value issue rather than acreage issue
  - Would effect allowable sale quantity if the lands aren't replaced – could reduce ASQ's on the NWFP lands
  - Tribal perspective – they don't care what the provision says about replacement – they could say equivalent economic value if we wanted or be located wherever – the key thing is that the finding of replacement lands not be a condition that has to be completed before the tribe gets it's land.
- Land Management:
  - Are the tribes required to manage land under land use allocations of NWFP?
- Access
  - Lose access to recreation trails and Hold Reservoir recreation – will be land-locked
  - Umpqua Eden parcel – LWCF lands
    - Value of LWCF lands? - \$70k, purchased by private party, first approached the tribe but the tribe didn't have the money; archaeology organization put the money up and bought the land, then transferred to the BLM. The access piece can be worked out. The public access is subject to the protection of the sites, and they can work it out. 30 acres of land purchased with LWCF money.
    - When purchased?
  - Why is

**From:** Jonkey, Ashley (Heller)  
**To:** [Hanefeld, Chris](mailto:Hanefeld.Chris)  
**Subject:** RE: Mojave-Southern Great Basin RAC Planning and Recreation Subcommittees to Meet  
**Date:** Thursday, May 05, 2016 12:28:38 PM

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Hi Chris – Would you mind adding one of our new employees to your distribution list? He does not cover the eastern part of the state, but I'd like him to be on all of the BLM lists. He will be taking care of resources and public lands issues.

[Gratton\\_Miller@heller.senate.gov](mailto:Gratton_Miller@heller.senate.gov)

Thank you!

Ashley Jonkey  
State Director  
US Senator Dean Heller

**From:** Hanefeld, Chris [mailto:chanefel@blm.gov]  
**Sent:** Wednesday, May 04, 2016 4:09 PM  
**To:** Adriana Arévalo (b) (6) @entravision.com>; barb@bjellestad.com; blm\_nv\_mediaothernvandca@blm.gov; blm\_nv\_mediarenoarea@blm.gov; blm\_nv\_mediasonv@blm.gov; contact.lcrecord@gmail.com; editorial@elmundo.net; (b) (6) @yahoo.com; Garrett Estrada <elytimes.garrett@gmail.com>; Jmendez@univision.net; (b) (6) @sbcglobal.net; Ken Kliewer (b) (6) @gmail.com>; (b) (6) @yahoo.com; Bobby Roberts <broberts@tonopahtimes.com>; Doug Puppel <doug@knpr.org>; Howard Copeland <advocate@cut.net>; Lorraine Clark (b) (6) @sbcglobal.net>; Mikkimarie Mason <Mikkimedsales@gmail.com>; Oscar Campos (b) (6) @entravision.com>; Rgj Outdoors <bspillman@rgj.com>; Thomas Mitchell (b) (6) @gmail.com>; Wyatt Cox <whitepinenews@gmail.com>  
**Subject:** Mojave-Southern Great Basin RAC Planning and Recreation Subcommittees to Meet

### **Mojave-Southern Great Basin RAC Planning and Recreation Subcommittees to Meet**

ELY – The Mojave-Southern Great Basin Resource Advisory Council's (RAC's) Planning and Recreation subcommittees will meet Wednesday, May 18, in the Midway conference room at Henderson City Hall, 240 Water Street, in Henderson, Nevada. The Planning Subcommittee will meet at 3 p.m. The Recreation Subcommittee will meet at 4:10 p.m.

The subcommittees, through the Mojave-Southern Great Basin RAC, advise and make recommendations to the Bureau of Land Management (BLM) on planning and recreation. Discussion items will include establishing goals and drafting agenda topics for 2016. The meetings are open to the public and provide the public an opportunity to make comments. Public comment periods are scheduled at 3:45 p.m., and 4:40 p.m., respectively. The public is encouraged to attend and provide comment. Written comments can also be submitted to the RAC Coordinator, Chris Hanefeld at the Ely District Office, 702 North Industrial Way, Ely, NV 89301. The agendas are available online at <http://bit.ly/MOSORAC>.

The Federal Land Policy and Management Act directs the Secretary of the Interior to involve

the public in planning and discussion of issues related to management of BLM-administered public lands. The Mojave-Southern Great Basin RAC is one of three such councils in Nevada that accommodate this community participation directive. Represented on the council are commercial and non-commercial users including environmental, livestock, mining, Native American, and wild horse and burro interests and elected officials and state agencies.

For more information, contact Chris Hanefeld, BLM Ely District Office public affairs specialist, at (775) 289-1842 or [chanefel@blm.gov](mailto:chanefel@blm.gov).

--

**Chris Hanefeld**  
**Public Affairs Specialist**  
775-289-1842/[chanefel@blm.gov](mailto:chanefel@blm.gov)



**From:** Helfrich, Devin  
**To:** ["p2wilkin@blm.gov"](mailto:p2wilkin@blm.gov); [Jill Ralston](#); [Anderson, James](#); [Blom, Benjamin](#); [Fuge, Dylan](#)  
**Cc:** [Feldgus, Steve](#)  
**Subject:** BLM hybrid foundation Act - additional technical assistance request  
**Date:** Thursday, May 05, 2016 12:37:06 PM  
**Attachments:** [BLM Foundation bill w track changes \(May 5, 2016\).docx](#)

---

Hi guys,

We've made a little more progress on the "BLM Hybrid Foundation Act" –

Steve and I met with Majority staff and we have a new draft (attached) that we would like to ask for technical assistance on again.

Please see the track changes and comments.

Thank you

**Devin Helfrich**

Legislative Director | Congressman Alan Lowenthal (CA-47)  
108 Cannon House Office Building, Washington, DC 20515  
Office: (202) 225-7924 | Fax: (202) 225-7926

114TH CONGRESS  
2D SESSION

# H. R. 4507

To establish the Bureau of Land Management Foundation as a charitable, nonprofit corporation, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 9, 2016

Mr. LOWENTHAL (for himself and Ms. MCCOLLUM) introduced the following bill; which was referred to the Committee on Natural Resources

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## A BILL

To establish the Bureau of Land Management Foundation as a charitable, nonprofit corporation, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

### SECTION 1. SHORT TITLE.

This Act may be cited as the “Bureau of Land Management Foundation Act”.

### SEC. 2. DEFINITIONS.

For the purposes of this Act, the following definitions apply:

- (1) BOARD.—The term “Board” means the Board or Directors of the Foundation.
- (2) CHAIRMAN.—The term “Chairman” refers to the Chairman of the Board.
- (3) DIRECTOR.—The term “Director” refers to individual members of the Board.
- (4) FOUNDATION.—The term “Foundation” means the Bureau of Land Management Foundation established by this Act.

(5) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

(6) NATIONAL CONSERVATION LANDS.—The term “National Conservation Lands” means the system of lands established by 16 U.S.C. § 7202.

(7) WILD HORSES AND BURROS.—The term “Wild Horses and Burros” has the same meaning as Section 2(b) of the The Wild Free-Roaming Horses And Burros Act Of 1971, 16 U.S.C § 1332(b).

(8) ORPHANED OIL AND GAS WELL SITES.— The term “orphaned oil and gas well sites” means all oil and gas wells in the United States that have no responsible or liable parties and that either:

~~(A) are located on Bureau of Land Management (BLM) managed lands;~~

~~(B) are located on lands that were managed by the BLM at the time oil and gas operations were initiated; or~~

~~(C) adversely and substantially impact the health or productivity of BLM managed lands.~~

(A) are located on federal lands;

(B) are located on lands that were once federal mineral estate; or

(C) adversely and substantially impact the health or productivity of federal lands

(9) ABANDONED MINE LANDS.—The term “abandoned mine lands” means all hardrock mines in the United States that were abandoned before January 1, 1981, and all coal mines in the United States that were abandoned before August 3, 1977, and that either:

~~(A) are located on BLM managed lands;~~

~~(B) are located on lands that were managed by the BLM at the time mining operations were initiated; or~~

~~(C) adversely and substantially impact the health or productivity of BLM managed lands.~~

(A) are located on federal lands;

(B) are located on lands that were once federal mineral estate; or

**Commented [DH1]:** The intent is to broaden the scope of lands covered by the Foundation. We'd like to make sure to cover the entire Western U.S... this is really just placeholder language that we're seeking technical assistance with. Going with current BLM lands or current BLM minerals or creates impacts to federal lands or federal minerals... something broad but workable and keeping some sort of BLM nexus.

(C) adversely and substantially impact the health or productivity of federal lands

Commented [FS2]: Same issue as the oil and gas wells.

### SEC. 3. ESTABLISHMENT AND PURPOSES.

(a) ESTABLISHMENT.—There is established the Bureau of Land Management Foundation as a charitable and nonprofit corporation that shall not be considered an agency or establishment of the United States.

(b) PURPOSES.—The purposes of the Foundation are to—

(1) encourage, accept, obtain, administer, and use private gifts of money, devises, and bequests of real and personal property for the benefit of, or in connection with the activities and services of the BLM;

(2) undertake, conduct, and encourage programs and activities that support the mission of the BLM as set forth in 43 U.S.C. 1701, *et seq.*, including:

(A) educational, technical, scientific, and other assistance or activities that support the management of BLM lands in regard to:

(i) wild horses and burros;

~~(ii) fish and wildlife and their habitats; and~~

(ii) fish and wildlife and their habitats; and

Commented [DH3]: Keep

(iii) National Conservation Lands;

(iv) recreation resources; and,

(v) cultural and historic resources.

(B) activities that support the reclamation and remediation ~~of the public lands~~, including, but not limited to, ~~the reclamation and remediation of:~~

(i) abandoned mine lands; and

(ii) orphaned oil and gas well sites.

Such reclamation activities should include, but not be limited to, the remediation of soil and water contamination and the restoration of wildlife habitat in order to restore the natural, scenic, historic, cultural

and ecological values of such areas; or to promote the economic potential of such areas.

(c) ACTIVITIES OF THE FOUNDATION AND THE BUREAU OF LAND MANAGEMENT. – The activities of the Foundation authorized under the provisions of this Act shall be supplemental to and shall not preempt any authority or responsibility of the BLM under any other provision of law.

(d) PROPORTIONAL DIVERSITY OF FOUNDATION ACTIVITIES – The activities and grants made by the Foundation, and not subject to the limitations in Sec. 5(d)(4), shall be undertaken in relative proportion, as much as practicable, to the seven enumerated Purposes of this subsection.

#### SEC. 4. BOARD OF DIRECTORS.

(a) ESTABLISHMENT AND MEMBERSHIP.—

(1) IN GENERAL.—The Foundation shall have a governing Board of Directors, which shall consist of no more than 9 members, each of whom shall be a United States citizen.

(2) REQUIREMENTS OF MEMBERS.—

(A) At least four of the members of the Board shall have education or experience in: natural, cultural, conservation, or other resource management, law, research, or advocacy; and

~~(A) natural, cultural, conservation, or other resource management, law, research, or advocacy;~~

(B) At least four of the members of the Board shall have education or experience in energy and minerals development, reclamation or remediation; and

~~(C) state and local government partnerships.~~

(3) REPRESENTATION OF DIVERSE VIEWS AND AREAS OF EXPERTISE. - To the extent practicable, members of the Board shall represent diverse points of view and areas of expertise.

(4) EX-OFFICIO MEMBER.—The Director of the Bureau of Land Management, or a designee, shall be an ex-officio non-voting member of the Board.

(b) APPOINTMENT AND TERMS.—

**Commented [DH4]:** Intent: to ensure that the Purposes found in (B) will receive substantial attention and funding by the Foundation

**Commented [FS5]:** Looking for good language to ensure that all the non-designated donations don't get used for one specific purpose. We don't want to set hard minimums or maximums, but would like to ensure that the activities of the Foundation are diverse.

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(1) INITIAL APPOINTMENT.—Not later than one year after the date of the enactment of this Act, the Secretary shall appoint the members of the Board who, except as otherwise provided in paragraph (2), shall be appointed for terms of 6 years.

(2) STAGGERED APPOINTMENTS.—The Secretary shall stagger the initial appointments to the Board, as determined to be appropriate by the Secretary, so that—

(A) one-third of the members serve a term of 2 years;

(B) one-third of the members serve a term of 4 years; and

(C) one-third of the members serve a term of 6 years.

(3) VACANCY.—A vacancy on the Board shall be—

(A) filled not later than 60 days after vacancy occurs in the manner of which the original appointment was made; and

(B) for the balance of the term of the individual who was replaced.

(4) REMOVAL.—A Director may be removed from the Board by a majority vote of the Board if the individual misses 3 consecutive regularly scheduled meetings and the vacancy shall be filled in accordance with paragraph (3).

(5) TERM LIMIT.—In no case shall an individual serve more than 12 consecutive years on the Board.

(6) APPOINTMENT CONSULTATION – All Board appointments shall be made in consultation with –

(A) the Interstate Mining Compact Commission

(B) the Interstate Oil and Gas Compact Commission

(C) XXX

(D) YYY

(c) CHAIRMAN.—The Chairman—

(1) shall be elected by the Board from its members for a 2-year term; and

(2) may be re-elected to the post while serving as a Director.

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Commented [DH6]: Who can we add to even this out?

Commented [FS7]: Also possible that we only want IMCC/IOGCC/(& State Abandoned Mine Lands Programs? Or others?) to weigh in on the appointments under (a)(2)(B), and then we have conservation groups or state DEPs weigh in on the appointments under (a)(2)(A). Could also be more general just to say that there should be consultation with appropriate interstate groups if there's good language for that.

(d) QUORUM.—A majority of the current voting membership of the Board shall constitute a quorum for the transaction of business.

(e) MEETINGS.—The Board shall meet at the call of the Chairman at least once a year.

(f) REIMBURSEMENT OF EXPENSES.—Serving as a Director shall not constitute employment by the United States Government for any purpose. Members shall serve without pay other than reimbursement for the actual and necessary traveling and subsistence expenses incurred in the performance of their duties for the Foundation in accordance with section 5703 of title 5, United States Code.

(g) GENERAL POWERS.—The Board may complete the organization of the Foundation by appointing offices and employees, adopting a constitution and bylaws consistent with the purposes of the Foundation and this Act, and undertaking other such acts as may be necessary to function and to carry out the provisions of this title.

(h) OFFICERS AND EMPLOYEES.—Officers and employees of the Foundation may not be appointed until the Foundation has sufficient funds to pay them for their service. Appointment as an officer or employee of the Foundation shall not constitute employment by the United States.

(i) LIMITATION AND CONFLICTS OF INTEREST.—

(1) PROHIBITION ON POLITICAL CAMPAIGN ACTIVITY.—The Foundation shall not participate or intervene in a political campaign on behalf of any candidate for public office.

(2) CONFLICT OF INTEREST.—No Director, officer, or employee of the Foundation shall participate, directly or indirectly, in the consideration or determination of any particular matter before the Foundation affecting—

(A) the financial interests of that Director, officer, employee, or an immediate family member of such Director, officer, or employee; or

(B) the interests of any corporation partnership, entity, or organization in which such Director, officer, employee, or an immediate family member of such Director, officer, or employee—

(i) is an officer, director, or trustee; or

(ii) has any direct financial interest.

(3) LIMITATION ON ADMINISTRATIVE EXPENDITURE.— Starting in the fifth fiscal year after enactment, of the amounts available to the Foundation for expenditure each fiscal year, not more than 15 percent may be used for administrative expenses.

## SEC. 5. POWERS AND OBLIGATIONS.

(a) IN GENERAL.—The Foundation—

(1) shall have perpetual succession; and

(2) may conduct business throughout the several States, territories, and possessions of the United States.

(b) NOTICE AND SERVICE OF PROCESS.—The Foundation shall at all times maintain a designated agent in the District of Columbia authorized to accept service of process for the Foundation. The serving of notice to, or service of process upon, the agent required under this subsection, or mailed to the business address of such agent, shall be deemed as service upon or notice to the Foundation.

(c) SEAL.—The Foundation shall have an official seal selected by the Board which shall be judicially noticed.

(d) POWERS.—In addition to powers otherwise authorized under this Act, to carry out its purposes, the Foundation shall have the usual powers of a not-for-profit corporation in the District of Columbia, including the power to—

(1) accept, receive, solicit, hold, administer, and use any gift, devise, or bequest, either absolutely or in trust, of real or personal property or any income therefrom or other interest therein;

(2) acquire by donation, gift, devise, purchase or exchange, and dispose of any real or personal property or interest therein;

(3) sell, donate, lease, invest, reinvest, retain or otherwise dispose of any property or income therefrom unless limited by the instrument of transfer;

(4) accept, receive, solicit, hold, administer, and use any gift, devise, or bequest, at the request of the donor thereof, strictly and exclusively for any purpose set forth in section 3(b). The expenditure of funds under any such restricted bequests may include reasonable administrative expenses related to actions covered by such bequests;

(5) borrow money and issue bonds, debentures, or other debt instruments;

(6) sue and be sued, and complain and defend itself in any court of competent jurisdiction, except that the Directors of the Board shall not be personally liable, except for gross negligence;

(7) enter into contracts or other arrangements with public agencies, private organizations, and persons and to make such payments as may be necessary to carry out the purposes thereof; and

(8) do any and all acts necessary and proper to carry out the purposes of the Foundation.

(e) PROPERTY.— (1) ACCEPTANCE OF PROPERTY.—A gift, devise, or bequest of real property may be accepted by the Foundation even though it is encumbered, restricted, or subject to beneficial interests of private persons if any current or future interest therein is for the benefit of the Foundation.

(2) REFUSAL OF PROPERTY.—The Foundation may, in its discretion, decline any gift, devise, or bequest of real or personal property.

(3) TITLE AND INTEREST IN REAL PROPERTY.—For the purposes of this Act, an interest in real property shall be treated as including mineral and water rights, rights of way, and easements, appurtenant or in gross.

(4) CONDEMNATION OF REAL PROPERTY PROHIBITED.—No lands or waters, or interests therein, that are owned by the Foundation shall be subject to condemnation by any State or political subdivision, or any agent of instrumentality thereof.

~~(5) PROHIBITION OF REAL PROPERTY – The Foundation shall not use any funds to purchase real property.~~

**Commented [DH8]:** Will this get in the way of acquiring land for offices/facilities? I suppose the Foundation can be limited to leasing office space.  
(This was also added by Majority)

## SEC. 6. ADMINISTRATIVE SERVICES AND SUPPORT.

(a) ESTABLISHMENT SUPPORT.—For the purposes of assisting the Foundation in establishing an office and meeting initial administrative, project, and other expenses, the Secretary is authorized to provide to the Foundation \$3,000,000 for fiscal year 2016, \$2,000,000 for fiscal years 2017, 2018, and 2019, and \$1,000,000 for fiscal year 2020. Such funds shall remain available to the Foundation until they are expended for authorized purposes.

(b) ADMINISTRATIVE EXPENSES.—The Secretary may provide personnel, facilities, equipment, and other administrative services to the Foundation with such limitations and on such terms and conditions as the Secretary shall establish. The Foundation may reimburse the Secretary for any support provided under this subsection, in whole or in part, and any reimbursement received by the Secretary under this subsection shall be deposited into the Treasury to the credit of the appropriations then current and chargeable for the cost of providing the services.

## SEC. 7. VOLUNTEERS.

The Secretary may accept, without regard to the civil service classification laws, rules, and regulations, the services of the Foundation, the Board, and the offices or employees or agents of

the Foundation, without compensation from the Department of the Interior, as volunteers for the performance of the functions under section 307(d) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1737(d)).

#### SEC. 8. AUDITS AND REPORTS REQUIREMENTS.

(a) AUDITS.—For Purposes of the act entitled “An Act for audit of accounts of private corporations established under Federal law”, approved August 30, 1964 (36 U.S.C. 1101 through 1103), the Foundation shall be treated as a private corporation established under Federal law.

(b) ANNUAL REPORT.—The Foundation shall transmit at the end of each fiscal year a report to Congress of its proceedings and activities during that year, including: –

(1) a full and complete statement of its receipts, expenditures, and investments;

(2) a description of all acquisition and disposal of real property by the Foundation;

(3) a detailed statement of the recipient, amount, and purpose of each grant made by the Foundation; and

(4) a copy of any audit prepared for the Foundation in the previous fiscal year.

#### SEC. 9. UNITED STATES RELEASE FROM LIABILITY.

The United States shall not be liable for any debts, defaults, acts, or omissions of the Foundation, nor shall the full faith and credit of the United States extend to any obligations of the Foundation.

#### SEC. 10. RELIEF WITH RESPECT TO CERTAIN FOUNDATION ACTS OR FAILURE TO ACT.

The Attorney General may petition in the United States District Court for the District of Columbia for such equitable relief as may be necessary or appropriate if the Foundation engages in any act, practice, or policy that is inconsistent with this Act or the bylaws of the Foundation.

#### SEC. 11. LIMITATION ON AUTHORITY.

Nothing in this Act authorizes the Foundation to perform any function the authority for which is exclusively provided to the BLM under any other provision of law.

#### SEC. 12. LIMITATION ON USE OF FUNDS.

Amounts provided as a grant by the Foundation shall not be used for—

(1) any expense related to litigation; ~~or~~

(2) any activity the purpose of which is to influence legislation pending before Congress; or

(3) the purchase of real property.

Commented [DH9]: Ibid

**From:** Hanefeld, Chris  
**To:** [Jonkey, Ashley \(Heller\)](#)  
**Subject:** Re: Mojave-Southern Great Basin RAC Planning and Recreation Subcommittees to Meet  
**Date:** Thursday, May 05, 2016 12:41:12 PM

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Ashley,

He's on.

Thanks,

Chris

On Thu, May 5, 2016 at 9:28 AM, Jonkey, Ashley (Heller)  
<[Ashley\\_Jonkey@heller.senate.gov](mailto:Ashley_Jonkey@heller.senate.gov)> wrote:

Hi Chris – Would you mind adding one of our new employees to your distribution list? He does not cover the eastern part of the state, but I'd like him to be on all of the BLM lists. He will be taking care of resources and public lands issues.

[Gratton\\_Miller@heller.senate.gov](mailto:Gratton_Miller@heller.senate.gov)

Thank you!

Ashley Jonkey

State Director  
US Senator Dean Heller

**From:** Hanefeld, Chris [mailto:[chanefel@blm.gov](mailto:chanefel@blm.gov)]  
**Sent:** Wednesday, May 04, 2016 4:09 PM  
**To:** Adriana Arévalo <(b) (6)@entravision.com>; [barb@bjellestad.com](mailto:barb@bjellestad.com);  
[blm\\_nv\\_mediaoathernvandca@blm.gov](mailto:blm_nv_mediaoathernvandca@blm.gov); [blm\\_nv\\_mediarenoarea@blm.gov](mailto:blm_nv_mediarenoarea@blm.gov);  
[blm\\_nv\\_mediasonv@blm.gov](mailto:blm_nv_mediasonv@blm.gov); [contact.lcrecord@gmail.com](mailto:contact.lcrecord@gmail.com); [editorial@elmundo.net](mailto:editorial@elmundo.net);  
(b) (6)@yahoo.com; Garrett Estrada <[elytimes.garrett@gmail.com](mailto:elytimes.garrett@gmail.com)>; [Jmendez@univision.net](mailto:Jmendez@univision.net);  
(b) (6)@sbcglobal.net; Ken Kliewer <(b) (6)@gmail.com>; (b) (6)@yahoo.com; Bobby  
Roberts <[broberts@tonopahtimes.com](mailto:broberts@tonopahtimes.com)>; Doug Puppel <[doug@knpr.org](mailto:doug@knpr.org)>; Howard Copeland  
<[advocate@cut.net](mailto:advocate@cut.net)>; Lorraine Clark <(b) (6)@sbcglobal.net>; Mikkimarie Mason  
<[Mikkimedsales@gmail.com](mailto:Mikkimedsales@gmail.com)>; Oscar Campos <(b) (6)@entravision.com>; Rgj Outdoors  
<[bspillman@rgj.com](mailto:bspillman@rgj.com)>; Thomas Mitchell <(b) (6)@gmail.com>; Wyatt Cox  
<[whitepinenews@gmail.com](mailto:whitepinenews@gmail.com)>

**Subject:** Mojave-Southern Great Basin RAC Planning and Recreation Subcommittees to Meet

**Mojave-Southern Great Basin RAC Planning and Recreation Subcommittees to Meet**

ELY – The Mojave-Southern Great Basin Resource Advisory Council’s (RAC’s) Planning and Recreation subcommittees will meet Wednesday, May 18, in the Midway conference room at Henderson City Hall, 240 Water Street, in Henderson, Nevada. The Planning Subcommittee will meet at 3 p.m. The Recreation Subcommittee will meet at 4:10 p.m.

The subcommittees, through the Mojave-Southern Great Basin RAC, advise and make recommendations to the Bureau of Land Management (BLM) on planning and recreation. Discussion items will include establishing goals and drafting agenda topics for 2016. The meetings are open to the public and provide the public an opportunity to make comments. Public comment periods are scheduled at 3:45 p.m., and 4:40 p.m., respectively. The public is encouraged to attend and provide comment. Written comments can also be submitted to the RAC Coordinator, Chris Hanefeld at the Ely District Office, 702 North Industrial Way, Ely, NV 89301. The agendas are available online at <http://bit.ly/MOSORAC>.

The Federal Land Policy and Management Act directs the Secretary of the Interior to involve the public in planning and discussion of issues related to management of BLM-administered public lands. The Mojave-Southern Great Basin RAC is one of three such councils in Nevada that accommodate this community participation directive. Represented on the council are commercial and non-commercial users including environmental, livestock, mining, Native American, and wild horse and burro interests and elected officials and state agencies.

For more information, contact Chris Hanefeld, BLM Ely District Office public affairs specialist, at (775) 289-1842 or [chanefel@blm.gov](mailto:chanefel@blm.gov).

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**Chris Hanefeld**

**Public Affairs Specialist**

775-289-1842/[chanefel@blm.gov](mailto:chanefel@blm.gov)





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**Chris Hanefeld**

**Public Affairs Specialist**

775-289-1842/[chanefel@blm.gov](mailto:chanefel@blm.gov)



**From:** Sheridan, Blaise (Franken)  
**To:** [p2wilkin@blm.gov](mailto:p2wilkin@blm.gov)  
**Cc:** [Schiff, Adam \(Franken\)](#)  
**Subject:** Technical Assistance Request -- Tribal Forestry Participation & Protection Act  
**Date:** Thursday, May 05, 2016 5:43:30 PM  
**Attachments:** [Tribal Forestry Participation and Protection Act.pdf](#)

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Patrick,

I would like to request technical assistance from BLM regarding the attached legislation, the Tribal Forestry Participation and Protection Act.

Many thanks,  
Blaise

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**Blaise Sheridan**

Senator Al Franken

Energy, Environment & Agriculture Legislative Assistant



**From:** Evenson, Ronald (Rudy)  
**To:** [Paris, Martin](#); [Sheldon Mudd](#)  
**Cc:** [Joseph \(Gene\) Seidlitz](#); [John Ruhs](#); [Marci Todd](#); [Stephen Clutter](#); [Jill Ralston](#)  
**Subject:** BLM Nevada Updates on Mineral and Renewable Energy Development Projects  
**Date:** Friday, May 06, 2016 12:33:45 PM  
**Attachments:** [April 2015 BLM NV GEOT Update.xlsx](#)  
[April 2015 BLM NV Mining EIS Update.xlsx](#)  
[April 2015 BLM NV Oil Gas Lease Update.xlsx](#)  
[April 2015 BLM NV Oil Gas Update.xlsx](#)  
[April 2015 BLM NV Solar and Wind.xlsx](#)  
[April 2015 Mining EA Update.xlsx](#)

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Hi Martin and Sheldon,

Please find attached this month's updates for the Congressman and the Governor. Feel free to call or email with any questions.

Rudy Evenson  
Deputy Chief of Communications  
Bureau of Land Management - Nevada  
Office: 775-861-6411 Cell: 775-223-3158  
[revenson@blm.gov](mailto:revenson@blm.gov) | [www.blm.gov/nv](http://www.blm.gov/nv)  
*[Connect with the BLM on social media](#)*

## Geothermal Exploration (43 CFR 3250)/Resource Confirmation (43 CFR 3260) Projects - BLM Status

Company	Project Name	District Office	Field Office	Issue Date for EA DR/FONSI	Status	Project Area (Acres)	Potential MW
U.S. Geothermal Inc.	San Emidio and Gerlach	Winnemucca	Black Rock	11/02/10	At <b>San Emidio</b> , a Notice of Intent to Conduct Geothermal Resource Exploration Operations was approved by a Categorical Exclusion on April 29, 2015. It includes drilling up to five (5) Temperature Gradient Wells (TGWs) to 1,000 ft. deep. Drilling started on July 27, 2015, and all five (5) TGWs were completed by September 15, 2015. On September 18, 2015, two (2) Geothermal Drilling Permits (GDPs) were submitted to drill two (2) of these TGWs deeper and convert them to Observation wells. A Determination of NEPA Adequacy was completed on March 29, 2016, and the GDPs will be approved once the proponent has completed a sensitive plant survey and a migratory bird survey. At <b>Gerlach</b> , Sundry Notices to extend the expiration dates of six (6) GDPs were approved October 24, 2014. Drilling commenced on one (1) of the wells on October 29, 2014, and was completed on November 17, 2014.	21,904	Info Not Available
Ormat	North Valley	Winnemucca	Humboldt River	No NEPA actions in process yet.	Proponent has several parcels nominated for the tentatively scheduled multi-state geothermal lease sale for October 26, 2016, in Sacramento. The company is still working on their land position over the project area. On February 26, 2016, BLM received a proposal to designate a unit, and that is under review.		
Ormat	Baltazor Hot Springs	Winnemucca	Humboldt River	4/30/14 *	This project was put on hold by the proponent on July 22, 2014. <u>On March 14, 2016, the proponent submitted a Sundry Notice (SN) to deepen well 21-13, which has not yet been drilled. The SN was approved April 15, 2016, and is expected to be spudded in early May, 2016.</u> Prior to being put on hold, a Notice of Intent (NOI) to Conduct Geothermal Resource Exploration Operations was approved by a Categorical Exclusion on April 30, 2014. The NOI identifies the locations for nine (9) TGWs. Only three (3) of the nine (9) locations will actually be drilled. The project area has been analyzed by the USFWS, and TGW locations have been chosen to avoid the Bleached Sandhill Skipper Butterfly. A unit area has been designated, and a unit agreement was submitted on January 23, 2014. Comments necessitating additions/revisions to the unit agreement were provided to the proponent on June 9, 2014.	10,021	Info Not Available

**Legend:**

- = Milestone Completed
- = Awaiting BLM action
- = Awaiting Operator action

~~Strikethrough~~ = Text to be removed after this version

**Notes:** \* Project permitted with CX instead of EA.





Updated: 4/19/18

## Geothermal Projects with NEPA for Utilization (43 CFR 3270) - BLM Status

Company	Project Name	District Office	Field Office	Issue Date for EA DR/FONSI	Status	MW	MWh/yr (95% efficiency)
Ormat	Tungsten Mountain	Carson City	Stillwater	3/25/16	Proponent submitted revised Utilization Plan (UP) in April 2015. An initial Draft EA was provided to the Stillwater Field Office on September 18, 2015. Project is in Greater Sage-grouse Other Habitat Management Area (OHMA), and associated analysis with Required Design Features included in the EA. The EA was released for a 30 day public comment period on December 22, 2015, that closed on January 21, 2016. The Decision Record and Finding of No Significant Impact was signed on March 25, 2016. A Geothermal Drilling Permit (GDP) for well 45A-22 was approved on December 15, 2015, spudded January 28, 2016, and reached Total Depth (TD) on March 3, 2016. A GDP for well 45B(66)-22 was received February 8, 2016, and approved March 2, 2016. A GDP for Well 84A-22 was received January 6, 2016, approved January 21, 2016, spudded March 15, 2016, and is currently in drilling status. A GDP for well 84B-22 was received April 6, 2016, and approved May 2, 2016. A GDP for well 56A-22 was received April 22, 2016.	Up to 2 plants 24 MW ea.	399,456
Ormat	Dixie Meadows	Carson City	Stillwater		UP was determined to be complete on May 21, 2015. NEPA kick-off meeting held May 26, 2015. The Preliminary Draft EA was received from the contractor on February 2, 2016. Comments from the BLM Inter-Disciplinary Team (IDT) were due February 26, 2016. Contractor has BLM IDT comments and plans to return draft to BLM by April 22, 2016. A GDP for well 23A-8 was approved October 21, 2015. Well 24-8 was spudded on November 17, 2015, and reached TD on December 17, 2015. A GDP for well 86A-7 was submitted on December 7, 2015, and was approved January 21, 2016. Well 23A(22)-8, which the GDP was approved October 21, 2015, was spudded on January 14, 2016, and reached TD on February 28, 2016. A GDP for well 24A-8 was received March 15, 2016, approved March 24, 2016, spudded April 8, 2016, and reached TD on April 19, 2016. A GDP for well 17(87-7)-8 was received April 15, 2016.	Up to 2 plants 30 MW ea.	499,320
Terragen	New York Canyon	Winnemucca	Humboldt River	6/3/13	No activity since EA approved. No exploration or resource confirmation wells drilled for this project.	62	515,964
Terragen	Coyote Canyon	Carson City	Stillwater	3/7/11	Resource area appears to be further south of the area analyzed by approved Development EA. A FONSI/DR was issued on 12/18/12 for an Exploration EA for a related project called Coyote Canyon South. Two other nearby projects and a proposed transmission line may require EIS for development. No recent activity.	62	515,964
Gradient Resources	Salt Wells *	Carson City	Stillwater	9/28/11	ROD issued on 9/28/11. No recent activity.	120	998,640

Ormat	Carson Lake *	Carson City	Stillwater	9/28/11	ROD issued on 9/28/11. A portion of the project area is included in one (1) of five (5) proposed sites nationally for Phase 1 of the <b>Department of Energy's Frontier Observatory for the Research in Geothermal Energy (FORGE)</b> . Sandia National Laboratories is the team lead for this site. Kickoff meeting held October 20, 2015. <u>A meeting was held April 12, 2016, to update BLM and discuss BLM related topics, including the status of the leases and permitting.</u> Outside of FORGE project area, a GDP for well 81(86-6)-7 was received April 25, 2016.	40	332,880
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**Legend:**

-  = Milestone Completed
-  = NEPA Document Available for Public Comment
-  = Awaiting BLM action
-  = Awaiting Operator action

Updates since the last version are indicated with underline.

**Notes:** \* Project permitted with EIS instead of EA.

Updated: 4/19/18

## Operating Geothermal Power Plants with Federal Interest in Nevada

Plant Name	Company	District Office	Operating Since	Capacity MW
Beowawe	Terra-Gen Power	Battle Mtn.	January 1986	16.6
Blue Mountain	NGP	Winnemucca	October 2009	49.5
Brady Hot Springs	Ormat Technologies	Winnemucca	June 1992	26
Desert Peak	Ormat Technologies	Winnemucca	January 1986	23
Dixie Valley	Terra-Gen Power	Carson City	June 1988	67
Don A. Campbell 1	Ormat Technologies	Carson City	November 2013	20
Don A. Campbell 2	Ormat Technologies	Carson City	September 2015	20
Galena 2	Ormat Technologies	Carson City	April 2007	15
Jersey Valley	Ormat Technologies	Battle Mtn.	December 2010	22.5
McGinness Hills	Ormat Technologies	Battle Mtn.	June 2012	48
McGinness Hills II	Ormat Technologies	Battle Mtn.	February 2015	48
Patua I	Gradient Resources	Carson City	October 2013	30
Salt Wells	Enel North America	Carson City	April 2009	18.06
San Emidio	U.S. Geothermal	Winnemucca	January 1988	12.7
Soda Lake 1	Alterra Power	Carson City	December 1987	5
Soda Lake 2	Alterra Power	Carson City	September 1990	18
Steamboat Hills	Ormat Technologies	Carson City	January 1988	13.2
Stillwater	Enel North America	Carson City	August 1991	47.3

Total            499.86

Updated:        4/19/18

## EIS Nevada Mining Projects - BLM Status

4/29/2016

Company	Project	BLM District	Plan of Operations Submitted	Plan of Operations Complete	Notice of Intent to Prepare EIS Published	Notice of Availability for Draft EIS Published	Notice of Availability for Final EIS Published	Record of Decision	Permitting Status	Project Timeline Since Last Month's Report	Employment Growth
Barrick	Bald Mountain (expansion)	Ely	10/5/2011	11/7/2011	4/16/2012	8/14/2015	3/11/16 <sup>(4)</sup> Apr 2016 <sup>(6)</sup>		FEIS complete. NOA package in WO.	NOA package in WO, @ Solicitor (lands), since 4/13/16.	Extend Operations 12-14 Years
Newmont	Greater Phoenix (expansion)	Battle Mountain	10/20/2014	12/18/2014	9/29/2015	May 2016 <sup>(1)</sup>			Draft EIS being developed	Working with NDEP to reconcile closure design and costs.	Extend Operations 23 Years
Allied Nevada	Hycroft (expansion)	Winnemucca	4/30/2014	7/3/2014	12/30/2014				Baseline data being developed	Waiting on operator to provide baseline studies & reports. EIS still moving, chapters 1&2 being drafted. NDOW has determined no viable GRS habitat in project area.	Extend Operations 10 Years
Coeur-Rochester	Coeur- Rochester (expansion)	Winnemucca	6/7/2013	9/12/2013	6/27/2014	8/21/2015	2/16/2016 <sup>(4)</sup>		FEIS Printed/complete, NOA in WO.	NOA at ASLM since 4/20/16.	Extend Operations 5-7 Years
Marigold Mining	Marigold (expansion)	Winnemucca	7/27/2015	9/3/2015	3/4/2016				Evaluating issues identified during scoping.	FO continuing with EIS preparations.	Extend Operations 10 Years
Waterton/Gemfield Resources	Gemfield (new)	Battle Mountain	7/10/2013	9/16/2013	12/24/2013	May 2017 <sup>(1)</sup>			Baseline data being developed	Waiting on operator to provide water modeling and Ecological Risk Assessment reports	150 New Employees
American Vanadium	Gibellini (new)	Battle Mountain	12/21/2012	2/4/2013	4/22/2013				Operator has placed project on hold while revising PoO.	Waiting on operator to provide revised plan of operations	90 New Employees
Haliburton	Rossi Barite (expansion)	Elko	3/17/2014	10/27/2014	9/9/2015	Apr 2016 <sup>(1)</sup>			Priliminary DEIS being reviewed.	Possible delay: Waiting on HAF analysis and NDOW for GRS data.	Extend Operations 20 Years
McEwen Mining	Gold Bar (new)	Battle Mountain	12/23/2013	4/7/2014	9/11/2015	Nov 2016 <sup>(1)</sup>			Draft EIS being developed	Ensuring compliance with Greater Sage Grouse Land Use Plan Amendment	160 New Employees
Midway Gold US Inc.	Gold Rock (new)	Ely	3/21/2013	3/29/2013	3/28/2014	2/13/2015	Jul 2016 <sup>(1)</sup>		Operator has temporarily suspended NEPA contractor's document preparation.	Operator has temporarily suspended NEPA contractor's document preparation.	100 New Employees
Barrick	Cortez Gold Deep South APoO (expansion of underground)	Battle Mountain	1st qtr, 2016 <sup>(2)</sup>						Beginning NEPA contractor selection process	Working with the proponent to develop RFP for solcitations from contractors.	

	= Milestone Completed		=on track
	= Awaiting BLM action		=delayed waiting on BLM action
	= Awaiting Operator action		=delayed awaiting on operator acton

- Notes:
- (1) Projected date to be received in Nevada State Office
  - (2) Projected date for plan to be received in Field Office
  - (3) Date received in Nevada State Office
  - (4) Date received in Washington Office
  - (5) Date received in Field Office
  - (6) Date expected to publish in the Federal Register.



**BLM, Nevada - Oil and Gas Lease Sale Information****4/19/2018**

Nevada - Total Statewide						
Dates	Total Acres Adjudicated	Total Acres Deferred, Sage Grouse	Total Acres Deferred, Other <sup>3</sup>	Total Acres Deferred	Total Acreage Offered on Sale	Total Acreage of Leases Issued <sup>6</sup>
Combined 2012 & 2013	1,873,610	805,265	311,433	1,116,698	756,912	300,636
2014 Sales	4,181,833	2,945,677	749,644	3,695,321	486,512	56,557
2015 Sales	2,497,175	1,812,064	302,950.81	2,115,015	286,478	40,018
2016 Sales						

Battle Mountain						
Dates	Total Acres Adjudicated	Total Acres Deferred, Sage Grouse	Total Acres Deferred, Other <sup>3</sup>	Total Acres Deferred	Total Acreage Offered on Sale	Total Acreage of Leases Issued <sup>6</sup>
Combined 2012 & 2013	384,730	267,294	42,293	309,587	75,143	53,924
2014 Sale Date: 7/17/2014	495,219	252,010	69,217	321,227	173,992	38,071
2015 Sale Date: 6/9/2015	916,161	504,085	155,121	659,206	256,955	12,611
2016 Sale Date: 6/14/2016	155,516	17,792	70,948	88,470	74,662	

Carson City						
Dates	Total Acres Adjudicated	Total Acres Deferred, Sage Grouse	Total Acres Deferred, Other <sup>3</sup>	Total Acres Deferred	Total Acreage Offered on Sale	Total Acreage of Leases Issued <sup>6</sup>
Combined 2012 & 2013	117,662	8,005	2,556	10,561	107,101	0
2014 Sale Date: <sup>4</sup> 9/9/2014	161,085	0 <sup>1</sup>	123,208	123,208	37,877	0
2015 Sale Date: 09/15/2015	postponed	postponed	postponed	postponed	postponed	postponed
2016 Sale Date: 9/13/2016	postponed	postponed	postponed	postponed	postponed	postponed

Ely						
Dates	Total Acres Adjudicated	Total Acres Deferred, Sage Grouse	Total Acres Deferred, Other <sup>3</sup>	Total Acres Deferred	Total Acreage Offered on Sale	Total Acreage of Leases Issued <sup>6</sup>
Combined 2012 & 2013	873,023	261,808	154,254	416,062	456,961	138,677
2014 Sale Date: <sup>4</sup> 12/9/2014	1,734,274	1,327,620 <sup>1</sup>	212,293	1,539,913	194,361	3,010
2015 Sale Date: 12/8/2015	230,266	77,490	147,735	225,225	3,641	3,641
2016 Sale Date: 12/13/2016	82,122					

Elko						
Dates	Total Acres Adjudicated	Total Acres Deferred, Sage Grouse	Total Acres Deferred, Other <sup>3</sup>	Total Acres Deferred	Total Acreage Offered on Sale	Total Acreage of Leases Issued <sup>6</sup>
Combined 2012 & 2013	498,195	268,158	112,330	380,488	117,707	108,035
2014 Sale Date: 9/9/2014	1,700,010	1,366,047	269,513	1,635,560	64,450	2,046
2015 Sale Date: 3/10/2015	1,350,748	1,230,489	94,377	1,324,866	25,882	23,766
2016 Sale Date: 3/8/2016	274,073	187,565	35,753	223,318	50,416	0.00

Southern Nevada						
Dates	Total Acres Adjudicated	Total Acres Deferred, Sage Grouse	Total Acres Deferred, Other <sup>3</sup>	Total Acres Deferred	Total Acreage Offered on Sale	Total Acreage of Leases Issued <sup>6</sup>
Combined 2012 & 2013	0	0	0	0	0	0
2014 Sale Date: 9/9/2014	35,111	0	35,111	35,111	0	0
2015 Sale Date: 3/10/2015	0	0	0	0	0	0
2016 Sale Date: 3/8/2016	0	0	0	0	0	0

Winnemucca						
Dates	Total Acres Adjudicated	Total Acres Deferred, Sage Grouse	Total Acres Deferred, Other <sup>3</sup>	Total Acres Deferred	Total Acreage Offered on Sale	Total Acreage of Leases Issued <sup>6</sup>
Combined 2012 & 2013	0	0	0	0	0	0
2014 Sale Date: <sup>4</sup> 9/9/2014	56,135	0 <sup>1</sup>	40,303 <sup>1</sup>	40,303	15,832	13,430
2015 Sale Date: 9/15/2015	postponed	postponed	postponed	postponed	postponed	postponed
2016 Sale Date: 9/13/2015	postponed	postponed	postponed	postponed	postponed	postponed

1) BLM State Office Adjudication has deferred acreage for Sage Grouse and other reasons. The Field Offices are in the process of on-the-ground truthing which may result in additional acreage being deferred.

2) Data represents calendar years 2012, 2013, and 2014.

3) "Total Acres Deferred, Other" includes lands deferred by the State Office or the Field Offices for reasons other than Sage Grouse habitat, such as Cultural Resource concerns, water resource concerns, proposed Resource Management revisions, etc.

4) Field Office deferrals are pending for the Carson City, Ely, and Winnemucca District 2014 Oil and Gas sales.

5) Note, if any parcels are not sold at auction, the public has an option to purchase the parcels within two years.

6) Acreage of Leases Issued is the total of acreage issued for competitive leases and noncompetitive leases issued the day after. Industry can submit offers to lease off of a sale list for up to 2 years.

**BLM, Nevada - Oil and Gas Lease Sale Information**  
**4/19/2018**

Data needed for 2015

Data needed for 2015

Data needed for 2015

Data needed for 2015

Data needed for 2015

22912.12	17217.24
22927.31	17965.75
8362.9	5120.78
1932.8	0
<b>56135.13</b>	<b>40303.77</b>
22978.3	17886.83
23031.61	12915.74
16550.56	3478.84
16606.36	3191.28
8238.43	4409.67
23028.29	16237.07
1438.6	1438.6
3200	3200
22990.37	22990.37
23022.64	23022.64
<b>161085.2</b>	<b>108771</b>

1343.76	1932.8
1789.72	2401.56
2363.13	2560
1600	1962.12
1280	1280
960	1896.72
2393.11	1258.4
1451.23	2539.76
1913.33	
2484.82	
1120	
1915.4	
1280	
2559.24	
2560	
1267.96	
255.16	
2560	
1920	
1280	

1343.76	
1789.72	
2363.13	
1600	
1280	1932.8
960	2401.56
2393.11	2560
1451.23	1962.12
1913.33	1280
2484.82	1896.72
1120	1258.4
1915.4	2539.76
1280	
2559.24	
2560	
1267.96	
2555.16	
2560	
1280	
1920	
1280	

## Oil and Gas APD Exploration in Nevada - FY14/15/16

Company	APD Permit	Field Office	Date APD Received*	Notes	Date Approved	Drilled	Status	Specific Comments
EFT NEVADA, LLC	CEDAR RIDGE 1	Tuscarora	10/23/2013	Pending Reviews and NEPA			Waiting On NEPA	The delay in approval of this well has been the uncertainty of sage Grouse requirements.
ENVY ENERGY LLC	BLACK POINT EAST 1	Egan	2/11/2015	Pending NEPA Review			Waiting On Nepa	No response from the Ely District concerning this APD
NEVADA WILDCAT LLC	ROBBERS ROOST 1	Egan	7/15/2015	Pending NEPA Review			Requested Suspension of Operation	Suspension of Operation and Production (SOP) was granted pending approval of APD. This SOP was granted as a result of Sage Grouse Policies
WESCO OPERATING, INC	NEPTUNE FEDERAL #33-30	Tuscarora	9/29/2015	Pending				No information from Elko concerning this APD
MAKOIL INC	SODA SPRINGS 1-22	Tonopah	11/18/2015	Pending NEPA Review			Requested Suspension of Operation	Suspension of Operation and Production was granted pending approval of APD. This SOP was granted as a result of BLM's workload delay in
GRANT CANYON LLC.	BLACKBURN FEDERAL #22	Tuscarora	9/15/2015	Completed	4/14/2016			
MAKOIL INC	MURPHY GAP 14-23	Caliente	7/7/2014	Completed	3/23/2016			
NOBLE ENERGY, INC	HUNTINGTON K1L-2D	Tuscarora	12/19/2013	Completed	7/18/2015			
MAKOIL INC	MUNSON RANCH 12-23X	Tonopah	2/18/2014	Completed	6/9/2015			
MAKOIL INC	MUNSON RANCH 13-34	Tonopah	2/18/2015	Completed	6/9/2015			
NOBLE ENERGY, INC	HUNTINGTON K1L-1V	Tuscarora	12/19/2013	Completed	7/18/2014	Yes	Shut-in Producer	
Bright Sky Energy & Minerals, LLC	BSEM Federal # 1-35	Egan	4/5/2012	Completed	9/11/2012	Yes Spudded 8/15/2015 Completed	Plugged and currently Temporary Abandoned.	Waiting on Ely DO to approve Sundry Notice to Hydraulic Fracture the well.

**Legend:**

\* Pending Approval - Application for Permit to Drill (APD)

Approved - Applications for Permit to Drill

Spudded - Applications for Permit to Drill

updated - 5/1/2016

As of: 5/2/2016

	<b>BLM Serial Number</b>	<b>Field Office Name</b>	<b>Casetype</b>	<b>Acres</b>
1	NVN-080357	Ely, NV	Wind Testing (Robinson Summit)	5,000
2	NVN-084148	Ely, NV	Wind energy production	8,600
3	N-82729	Las Vegas , NV	Wind Testing (Oak Creek, NVB001371)	34,456.34
4	N-84626	Las Vegas , NV	Wind Testing (Searchlight, NVB001954)	18,949.48
5	N-85077	Las Vegas , NV	Solar (Silver State North, NVB001517)	618.63
6	N-85801	Las Vegas , NV	Solar (Silver State South, NVB001803)	2,861.90
7	N-89219	Las Vegas , NV	Wind Testing (Pioneer Green, NVB001634)	20,336.78
8	N-89751	Las Vegas , NV	Wind Testing (Table Mountain, NVB001580)	7,025.00
9	NVN-092243	Stillwater FO, NV	Solar Energy Development (Luning Solar)	560
10	N-86292	Tonopah, NV	Solar (Crescent Dunes)	3,057

Approved Facilities	Facilities installed on the ground
1 Meteorological tower	1 Meteorological tower
150 MW, 75 wind energy turbines	150 MW, 63 wind energy turbines
5 Meteorological Towers	4 Meteorological Towers
5 Meteorological Towers	3 Meteorological Towers
50 MW Solar Site	50 MW Solar Site
250 MW Solar Site	250 MW Solar Site
4 Meteorological Towers	4 Meteorological Towers
12 Meteorological Towers	7 Meteorological Towers
50 MW PV, gen-tie line	None. Notice to Proceed has been issued but construction has not started.
10,000 mirrors, three tanks, one 650' tower, Facilities, 230Kv 4 mile power line	10,000 mirrors, three tanks, one 650' tower, Facilities, 230Kv 4 mile power line



# EA Nevada Mining Projects - BLM Status

4/29/2016

Company	Project	BLM District	Plan of Operations Submitted	Plan of Operations Complete	EA Issued for Public Comment	EA Approved	Permitting Status	Project Timeline Since Last Month's Report	Employment Growth
Isabella Pearl LLC	Isabella Pearl (new)	Carson City	2/23/2008	1/28/2011			Baseline data being developed	waiting on operator to provide water modeling reports	125 New Employees
Barrick	HC/CUEP Portal and Twin Declines	Battle Mountain		4/1/2016			3rd-party PEA being prepared	BLM reviewing chapters 1 & 2.	Employment: 124 years 1-4 188 year 5
Pershing Gold Corp.	Relief Canyon	Winnemucca	3/26/2015	7/13/2015	May 2016 <sup>(3)</sup>		3rd-party PEA being prepared	Operator, NEPA contractor and BLM working on chapters 1-5.	Extend Operations 3 Years
Sterling Gold Mining Corp	Sterling Mine (expansion)	Southern Nevada	12/4/2012	6/17/2014	3/8/2016		BLM considering comments received	BLM preparing EA revisions and FONSI/DR	13 New Employees

= Milestone Completed  
 = Awaiting BLM action  
 = Awaiting Operator action

=on track  
 =delayed waiting on BLM action  
 =delayed waiting on operator action

**Notes:**

- (1) Projected date to be received in Field Office
- (2) Date received in Field Office
- (3) Projected date to be available to public

**Note:** The Environmental Assessment (EA) process differs from the more lengthy EIS process in that there is no requirement to post a Notice of Intent or Notice of Availability in the Federal Register, and typically consists of the BLM determining the Plan of Operations and baseline studies are complete prior to preparing the EA, releasing it for public comment, incorporating substantive comments, and producing the EA with Finding of No Significant Impact (FONSI).

**From:** Brooks, David (Energy)  
**To:** [Pool, Jamie](#)  
**Subject:** FW: More on Land Exchange  
**Date:** Friday, May 06, 2016 4:10:36 PM  
**Attachments:** [Memo on SITLA-UTTR-ARRWA Conflicts.docx](#)  
[Little Sage Valley Route - Photo 1.pdf](#)  
[Little Sage Valley Route - Photo 2.pdf](#)

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**From:** Jen Ujifusa <[jen@suwa.org](mailto:jen@suwa.org)>  
**Date:** Friday, May 6, 2016 at 9:09 AM  
**To:** David Brooks <[david\\_brooks@energy.senate.gov](mailto:david_brooks@energy.senate.gov)>  
**Subject:** More on Land Exchange

Hi David,

I attempted to send you a number of documents last night, but this morning see I have gotten a bounceback due to file size. So I'm going to send you a series of emails. I hope they are not too late.

First, a memo is attached outlining why some of the arguments SITLA is making are misleading, along with photos of the areas in question.

The next email will have maps.

Thanks,

Jen

--

Jen Beasley Ujifusa  
Legislative Director  
Southern Utah Wilderness Alliance  
[202.266.0473](tel:202.266.0473) (office)  
[801.791.2598](tel:801.791.2598) (cell)  
[www.suwa.org](http://www.suwa.org)

## **SITLA's Proposed UTTR Land Exchange and Conflicts with America's Red Rock Wilderness Act**

The Utah School and Institutional Trust Lands Administration (SITLA) is proposing a land exchange in conjunction with the potential expansion of the Utah Test and Training Range (UTTR). This proposed land exchange, unfortunately, includes current public lands around the Drum Mountains and Cricket Mountains that would be designated wilderness in America's Red Rock Wilderness Act (H.R. 2430/S. 1375). Wilderness-quality public lands should not be traded away to SITLA. The offending parcels should be removed from the proposed exchange.

Conflicts between the proposed land exchange and wilderness in America's Red Rock Wilderness Act are outlined in red on the attached maps (see "UTTR Land Exchange – Drum Mtns" and "UTTR Land Exchange – Cricket Mtns").

### **BLM Inventories**

SITLA now incorrectly argues that BLM does not think any of these lands are wilderness caliber.

In the late 1970s and early 1980s, under the direction of the Federal Land Policy and Management Act, the BLM inventoried lands in and around the Drum Mountains and Cricket Mountains. At the time, the BLM did not find any wilderness characteristics in either range.

However, these initial inventories were deeply flawed. At the end of the BLM's original wilderness inventory, the agency found only approximately 3.2 million acres of wilderness-quality land in Utah. Since then, the agency has conducted numerous inventories, revisiting places it initially passed over, and has found more than 4.2 million acres of additional wilderness-quality lands that it missed the first time.

The lands in and around the Drum Mountains were re-inventoried by the BLM in preparation for a 2008 geothermal lease sale. The BLM now agrees that nearly all of the lands in conflict in this area are wilderness-caliber (see "UTTR Land Exchange – Drum Mtns," BLM wilderness-character findings shown in yellow cross-hatch).

The lands in and around the Cricket Mountains have not yet been re-inventoried by the BLM.

SITLA has incorrectly stated that the BLM found both areas lacked wilderness characteristics in its 1999 statewide wilderness re-inventory. However, as shown on the accompanying maps, neither area was re-inventoried at the time (see BLM “BLM 1999 Wilderness Re-inventory and Cricket Mtns” and “BLM 1999 Wilderness Re-inventory and Drum Mtns”).

### **Wilderness-Quality Lands**

SITLA mistakenly argues that the areas at conflict here are riddled with roads and mining claims and are not wilderness-caliber lands.

SITLA’s contention that these areas lack wilderness values because there are existing, undeveloped mining claims is a red herring. Whether or not there may be undeveloped mining claims in these areas, the mere existence of an undeveloped mining claim does not disqualify an area from wilderness designation or consideration (see, e.g., [BLM Manual 6310.06.C.3.d](#)).

The lands at conflict here are not riddled with roads and are wilderness-caliber. The attached photo depicts one portion of the area at conflict (“Photo of Drum Mountains Proposed Wilderness SITLA Wants to Acquire”).

As explained above, the BLM agrees with SUWA that nearly all of the lands at issue around the Drum Mountains are wilderness-quality lands (see “UTTR Land Exchange – Drum Mtns” showing that of all the conflict areas—those outlined with a red border—only a small parcel of land in the proposed Crater Bench unit was not found to possess wilderness character by the BLM).

These lands are not riddled with roads (see “UTTR Land Exchange – Drum Mtns” and “UTTR Land Exchange – Cricket Mtns”). Of all the lands at conflict here, there is only one claimed county/state “route” inside of the lands SITLA hopes to acquire in areas proposed for wilderness designation in America’s Red Rock Wilderness Act. This single conflict is found in the Cricket Mountains in the proposed Little Sage Valley wilderness. This “route”, however, is in places virtually non-existent (see “Little Sage Valley Route – Photo 1”) and in other areas nothing more than an unused, faint two-track (see “Little Sage Valley Route – Photo 2”) that does not detract from the naturalness of this landscape.

SITLA’s criticisms do not hold water. It should not receive public lands proposed for wilderness designation in America’s Red Rock Wilderness Act.



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126781

**From:** Helfrich, Devin  
**To:** "[p2wilkin@blm.gov](mailto:p2wilkin@blm.gov)"; "[Jill Ralston](#)"; "[Anderson, James](#)"; "[Blom, Benjamin](#)"; "[Fuge, Dylan](#)"  
**Cc:** [Feldgus, Steve](#)  
**Subject:** RE: BLM hybrid foundation Act - additional technical assistance request  
**Date:** Tuesday, May 10, 2016 1:14:14 PM  
**Attachments:** [BLM Foundation bill w track changes \(May 5, 2016\).docx](#)

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Hi guys, I just wanted to make sure that you all received this, thanks

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**From:** Helfrich, Devin  
**Sent:** Thursday, May 05, 2016 12:37 PM  
**To:** 'p2wilkin@blm.gov'; Jill Ralston; Anderson, James; Blom, Benjamin; Fuge, Dylan  
**Cc:** Feldgus, Steve  
**Subject:** BLM hybrid foundation Act - additional technical assistance request

Hi guys,

We've made a little more progress on the "BLM Hybrid Foundation Act" –

Steve and I met with Majority staff and we have a new draft (attached) that we would like to ask for technical assistance on again.

Please see the track changes and comments.

Thank you

**Devin Helfrich**

Legislative Director | Congressman Alan Lowenthal (CA-47)  
108 Cannon House Office Building, Washington, DC 20515  
Office: (202) 225-7924 | Fax: (202) 225-7926

114TH CONGRESS  
2D SESSION

# H. R. 4507

To establish the Bureau of Land Management Foundation as a charitable, nonprofit corporation, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 9, 2016

Mr. LOWENTHAL (for himself and Ms. MCCOLLUM) introduced the following bill; which was referred to the Committee on Natural Resources

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## A BILL

To establish the Bureau of Land Management Foundation as a charitable, nonprofit corporation, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

### SECTION 1. SHORT TITLE.

This Act may be cited as the “Bureau of Land Management Foundation Act”.

### SEC. 2. DEFINITIONS.

For the purposes of this Act, the following definitions apply:

- (1) BOARD.—The term “Board” means the Board or Directors of the Foundation.
- (2) CHAIRMAN.—The term “Chairman” refers to the Chairman of the Board.
- (3) DIRECTOR.—The term “Director” refers to individual members of the Board.
- (4) FOUNDATION.—The term “Foundation” means the Bureau of Land Management Foundation established by this Act.



(5) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

(6) NATIONAL CONSERVATION LANDS.—The term “National Conservation Lands” means the system of lands established by 16 U.S.C. § 7202.

(7) WILD HORSES AND BURROS.—The term “Wild Horses and Burros” has the same meaning as Section 2(b) of the The Wild Free-Roaming Horses And Burros Act Of 1971, 16 U.S.C § 1332(b).

(8) ORPHANED OIL AND GAS WELL SITES.— The term “orphaned oil and gas well sites” means all oil and gas wells in the United States that have no responsible or liable parties and that either:

~~(A) are located on Bureau of Land Management (BLM) managed lands;~~

~~(B) are located on lands that were managed by the BLM at the time oil and gas operations were initiated; or~~

~~(C) adversely and substantially impact the health or productivity of BLM managed lands.~~

(A) are located on federal lands;

(B) are located on lands that were once federal mineral estate; or

(C) adversely and substantially impact the health or productivity of federal lands

(9) ABANDONED MINE LANDS.—The term “abandoned mine lands” means all hardrock mines in the United States that were abandoned before January 1, 1981, and all coal mines in the United States that were abandoned before August 3, 1977, and that either:

~~(A) are located on BLM managed lands;~~

~~(B) are located on lands that were managed by the BLM at the time mining operations were initiated; or~~

~~(C) adversely and substantially impact the health or productivity of BLM managed lands.~~

(A) are located on federal lands;

(B) are located on lands that were once federal mineral estate; or

**Commented [DH1]:** The intent is to broaden the scope of lands covered by the Foundation. We'd like to make sure to cover the entire Western U.S... this is really just placeholder language that we're seeking technical assistance with. Going with current BLM lands or current BLM minerals or creates impacts to federal lands or federal minerals... something broad but workable and keeping some sort of BLM nexus.

(C) adversely and substantially impact the health or productivity of federal lands

Commented [FS2]: Same issue as the oil and gas wells.

### SEC. 3. ESTABLISHMENT AND PURPOSES.

(a) ESTABLISHMENT.—There is established the Bureau of Land Management Foundation as a charitable and nonprofit corporation that shall not be considered an agency or establishment of the United States.

(b) PURPOSES.—The purposes of the Foundation are to—

(1) encourage, accept, obtain, administer, and use private gifts of money, devises, and bequests of real and personal property for the benefit of, or in connection with the activities and services of the BLM;

(2) undertake, conduct, and encourage programs and activities that support the mission of the BLM as set forth in 43 U.S.C. 1701, *et seq.*, including:

(A) educational, technical, scientific, and other assistance or activities that support the management of BLM lands in regard to:

(i) wild horses and burros;

~~(ii) fish and wildlife and their habitats; and~~

(ii) fish and wildlife and their habitats; and

Commented [DH3]: Keep

(iii) National Conservation Lands;

(iv) recreation resources; and,

(v) cultural and historic resources.

(B) activities that support the reclamation and remediation ~~of the public lands~~, including, but not limited to, ~~the reclamation and remediation of:~~

(i) abandoned mine lands; and

(ii) orphaned oil and gas well sites.

Such reclamation activities should include, but not be limited to, the remediation of soil and water contamination and the restoration of wildlife habitat in order to restore the natural, scenic, historic, cultural

and ecological values of such areas, or to promote the economic potential of such areas.

(c) ACTIVITIES OF THE FOUNDATION AND THE BUREAU OF LAND MANAGEMENT. – The activities of the Foundation authorized under the provisions of this Act shall be supplemental to and shall not preempt any authority or responsibility of the BLM under any other provision of law.

(d) PROPORTIONAL DIVERSITY OF FOUNDATION ACTIVITIES – The activities and grants made by the Foundation, and not subject to the limitations in Sec. 5(d)(4), shall be undertaken in relative proportion, as much as practicable, to the seven enumerated Purposes of this subsection.

#### SEC. 4. BOARD OF DIRECTORS.

(a) ESTABLISHMENT AND MEMBERSHIP.—

(1) IN GENERAL.—The Foundation shall have a governing Board of Directors, which shall consist of no more than 9 members, each of whom shall be a United States citizen.

(2) REQUIREMENTS OF MEMBERS.—

(A) At least four of the members of the Board shall have education or experience in: natural, cultural, conservation, or other resource management, law, research, or advocacy; and

~~(A) natural, cultural, conservation, or other resource management, law, research, or advocacy;~~

(B) At least four of the members of the Board shall have education or experience in energy and minerals development, reclamation or remediation, and

~~(C) state and local government partnerships.~~

(3) REPRESENTATION OF DIVERSE VIEWS AND AREAS OF EXPERTISE. - To the extent practicable, members of the Board shall represent diverse points of view and areas of expertise.

(4) EX-OFFICIO MEMBER.—The Director of the Bureau of Land Management, or a designee, shall be an ex-officio non-voting member of the Board.

(b) APPOINTMENT AND TERMS.—

**Commented [DH4]:** Intent: to ensure that the Purposes found in (B) will receive substantial attention and funding by the Foundation

**Commented [FS5]:** Looking for good language to ensure that all the non-designated donations don't get used for one specific purpose. We don't want to set hard minimums or maximums, but would like to ensure that the activities of the Foundation are diverse.

**Formatted:** Indent: Left: 1.56"

(1) INITIAL APPOINTMENT.—Not later than one year after the date of the enactment of this Act, the Secretary shall appoint the members of the Board who, except as otherwise provided in paragraph (2), shall be appointed for terms of 6 years.

(2) STAGGERED APPOINTMENTS.—The Secretary shall stagger the initial appointments to the Board, as determined to be appropriate by the Secretary, so that—

(A) one-third of the members serve a term of 2 years;

(B) one-third of the members serve a term of 4 years; and

(C) one-third of the members serve a term of 6 years.

(3) VACANCY.—A vacancy on the Board shall be—

(A) filled not later than 60 days after vacancy occurs in the manner of which the original appointment was made; and

(B) for the balance of the term of the individual who was replaced.

(4) REMOVAL.—A Director may be removed from the Board by a majority vote of the Board if the individual misses 3 consecutive regularly scheduled meetings and the vacancy shall be filled in accordance with paragraph (3).

(5) TERM LIMIT.—In no case shall an individual serve more than 12 consecutive years on the Board.

(6) APPOINTMENT CONSULTATION – All Board appointments shall be made in consultation with –

(A) the Interstate Mining Compact Commission

(B) the Interstate Oil and Gas Compact Commission

(C) XXX

(D) YYY

(c) CHAIRMAN.—The Chairman—

(1) shall be elected by the Board from its members for a 2-year term; and

(2) may be re-elected to the post while serving as a Director.

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Commented [DH6]: Who can we add to even this out?

Commented [FS7]: Also possible that we only want IMCC/IOGCC/(& State Abandoned Mine Lands Programs? Or others?) to weigh in on the appointments under (a)(2)(B), and then we have conservation groups or state DEPs weigh in on the appointments under (a)(2)(A). Could also be more general just to say that there should be consultation with appropriate interstate groups if there's good language for that.

(d) QUORUM.—A majority of the current voting membership of the Board shall constitute a quorum for the transaction of business.

(e) MEETINGS.—The Board shall meet at the call of the Chairman at least once a year.

(f) REIMBURSEMENT OF EXPENSES.—Serving as a Director shall not constitute employment by the United States Government for any purpose. Members shall serve without pay other than reimbursement for the actual and necessary traveling and subsistence expenses incurred in the performance of their duties for the Foundation in accordance with section 5703 of title 5, United States Code.

(g) GENERAL POWERS.—The Board may complete the organization of the Foundation by appointing offices and employees, adopting a constitution and bylaws consistent with the purposes of the Foundation and this Act, and undertaking other such acts as may be necessary to function and to carry out the provisions of this title.

(h) OFFICERS AND EMPLOYEES.—Officers and employees of the Foundation may not be appointed until the Foundation has sufficient funds to pay them for their service. Appointment as an officer or employee of the Foundation shall not constitute employment by the United States.

(i) LIMITATION AND CONFLICTS OF INTEREST.—

(1) PROHIBITION ON POLITICAL CAMPAIGN ACTIVITY.—The Foundation shall not participate or intervene in a political campaign on behalf of any candidate for public office.

(2) CONFLICT OF INTEREST.—No Director, officer, or employee of the Foundation shall participate, directly or indirectly, in the consideration or determination of any particular matter before the Foundation affecting—

(A) the financial interests of that Director, officer, employee, or an immediate family member of such Director, officer, or employee; or

(B) the interests of any corporation partnership, entity, or organization in which such Director, officer, employee, or an immediate family member of such Director, officer, or employee—

(i) is an officer, director, or trustee; or

(ii) has any direct financial interest.

(3) LIMITATION ON ADMINISTRATIVE EXPENDITURE.— Starting in the fifth fiscal year after enactment, of the amounts available to the Foundation for expenditure each fiscal year, not more than 15 percent may be used for administrative expenses.

## SEC. 5. POWERS AND OBLIGATIONS.

(a) IN GENERAL.—The Foundation—

(1) shall have perpetual succession; and

(2) may conduct business throughout the several States, territories, and possessions of the United States.

(b) NOTICE AND SERVICE OF PROCESS.—The Foundation shall at all times maintain a designated agent in the District of Columbia authorized to accept service of process for the Foundation. The serving of notice to, or service of process upon, the agent required under this subsection, or mailed to the business address of such agent, shall be deemed as service upon or notice to the Foundation.

(c) SEAL.—The Foundation shall have an official seal selected by the Board which shall be judicially noticed.

(d) POWERS.—In addition to powers otherwise authorized under this Act, to carry out its purposes, the Foundation shall have the usual powers of a not-for-profit corporation in the District of Columbia, including the power to—

(1) accept, receive, solicit, hold, administer, and use any gift, devise, or bequest, either absolutely or in trust, of real or personal property or any income therefrom or other interest therein;

(2) acquire by donation, gift, devise, purchase or exchange, and dispose of any real or personal property or interest therein;

(3) sell, donate, lease, invest, reinvest, retain or otherwise dispose of any property or income therefrom unless limited by the instrument of transfer;

(4) accept, receive, solicit, hold, administer, and use any gift, devise, or bequest, at the request of the donor thereof, strictly and exclusively for any purpose set forth in section 3(b). The expenditure of funds under any such restricted bequests may include reasonable administrative expenses related to actions covered by such bequests;

(5) borrow money and issue bonds, debentures, or other debt instruments;

(6) sue and be sued, and complain and defend itself in any court of competent jurisdiction, except that the Directors of the Board shall not be personally liable, except for gross negligence;

(7) enter into contracts or other arrangements with public agencies, private organizations, and persons and to make such payments as may be necessary to carry out the purposes thereof; and

(8) do any and all acts necessary and proper to carry out the purposes of the Foundation.

(e) PROPERTY.— (1) ACCEPTANCE OF PROPERTY.—A gift, devise, or bequest of real property may be accepted by the Foundation even though it is encumbered, restricted, or subject to beneficial interests of private persons if any current or future interest therein is for the benefit of the Foundation.

(2) REFUSAL OF PROPERTY.—The Foundation may, in its discretion, decline any gift, devise, or bequest of real or personal property.

(3) TITLE AND INTEREST IN REAL PROPERTY.—For the purposes of this Act, an interest in real property shall be treated as including mineral and water rights, rights of way, and easements, appurtenant or in gross.

(4) CONDEMNATION OF REAL PROPERTY PROHIBITED.—No lands or waters, or interests therein, that are owned by the Foundation shall be subject to condemnation by any State or political subdivision, or any agent of instrumentality thereof.

**(5) PROHIBITION OF REAL PROPERTY – The Foundation shall not use any funds to purchase real property.**

**Commented [DH8]:** Will this get in the way of acquiring land for offices/facilities? I suppose the Foundation can be limited to leasing office space.  
(This was also added by Majority)

## SEC. 6. ADMINISTRATIVE SERVICES AND SUPPORT.

(a) ESTABLISHMENT SUPPORT.—For the purposes of assisting the Foundation in establishing an office and meeting initial administrative, project, and other expenses, the Secretary is authorized to provide to the Foundation \$3,000,000 for fiscal year 2016, \$2,000,000 for fiscal years 2017, 2018, and 2019, and \$1,000,000 for fiscal year 2020. Such funds shall remain available to the Foundation until they are expended for authorized purposes.

(b) ADMINISTRATIVE EXPENSES.—The Secretary may provide personnel, facilities, equipment, and other administrative services to the Foundation with such limitations and on such terms and conditions as the Secretary shall establish. The Foundation may reimburse the Secretary for any support provided under this subsection, in whole or in part, and any reimbursement received by the Secretary under this subsection shall be deposited into the Treasury to the credit of the appropriations then current and chargeable for the cost of providing the services.

## SEC. 7. VOLUNTEERS.

The Secretary may accept, without regard to the civil service classification laws, rules, and regulations, the services of the Foundation, the Board, and the offices or employees or agents of

the Foundation, without compensation from the Department of the Interior, as volunteers for the performance of the functions under section 307(d) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1737(d)).

#### SEC. 8. AUDITS AND REPORTS REQUIREMENTS.

(a) AUDITS.—For Purposes of the act entitled “An Act for audit of accounts of private corporations established under Federal law”, approved August 30, 1964 (36 U.S.C. 1101 through 1103), the Foundation shall be treated as a private corporation established under Federal law.

(b) ANNUAL REPORT.—The Foundation shall transmit at the end of each fiscal year a report to Congress of its proceedings and activities during that year, including: –

(1) a full and complete statement of its receipts, expenditures, and investments;

(2) a description of all acquisition and disposal of real property by the Foundation;

(3) a detailed statement of the recipient, amount, and purpose of each grant made by the Foundation; and

(4) a copy of any audit prepared for the Foundation in the previous fiscal year.

#### SEC. 9. UNITED STATES RELEASE FROM LIABILITY.

The United States shall not be liable for any debts, defaults, acts, or omissions of the Foundation, nor shall the full faith and credit of the United States extend to any obligations of the Foundation.

#### SEC. 10. RELIEF WITH RESPECT TO CERTAIN FOUNDATION ACTS OR FAILURE TO ACT.

The Attorney General may petition in the United States District Court for the District of Columbia for such equitable relief as may be necessary or appropriate if the Foundation engages in any act, practice, or policy that is inconsistent with this Act or the bylaws of the Foundation.

#### SEC. 11. LIMITATION ON AUTHORITY.

Nothing in this Act authorizes the Foundation to perform any function the authority for which is exclusively provided to the BLM under any other provision of law.

#### SEC. 12. LIMITATION ON USE OF FUNDS.

Amounts provided as a grant by the Foundation shall not be used for—

(1) any expense related to litigation; ~~or~~



(2) any activity the purpose of which is to influence legislation pending before Congress; or

(3) the purchase of real property.

Commented [DH9]: Ibid

**From:** Keeler, Sarah  
**To:** [rgillcash@blm.gov](mailto:rgillcash@blm.gov)  
**Subject:** BLM Question  
**Date:** Tuesday, May 10, 2016 2:33:59 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)

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Hi Bob,

Do you guys handle this? See below email from constituent.

Who has the authority to inspect electric service on an oil and gas lease? AEP, DNR, State fire marshal, do not have any jurisdiction have also contacted several county agencies with no help.  
Thanks Cecil Schneider

Thanks,

Sarah Keeler  
District Director  
Congressman Bill Johnson OH-6  
P: 330-337-6951  
F: 330-337-7125



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**From:** Frye, Judith  
**To:** [andrew.renteria@mail.house.gov](mailto:andrew.renteria@mail.house.gov)  
**Cc:** [Erica St Michel](#)  
**Subject:** Bureau of Land Management, California, Issues for Meeting with Congressman Valadao  
**Date:** Tuesday, May 10, 2016 2:40:31 PM

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Andrew, as you requested, following are suggested topics the Congressman might be interested in discussing. State Director Perez will, of course, discuss any issue which interests Congressman Valadao.

Clear Creek  
Oil and Gas Program, Lease Sales  
Grazing  
San Joaquin Desert Hills Plan Amendment  
Tremblors  
San Joaquin River Gorge

Best regards,

Judy Frye  
Executive Assistant to the State Director



**From:** Keeler, Sarah  
**To:** [Gillcash, Robert](#)  
**Subject:** Non Wayne BLM Question  
**Date:** Tuesday, May 10, 2016 5:46:02 PM  
**Attachments:** [image001.png](#)  
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[image003.png](#)  
[image004.png](#)  
[image005.png](#)

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Hi Bob,

Do you guys handle this? See below email from constituent.

Who has the authority to inspect electric service on an oil and gas lease? AEP, DNR, State fire marshal, do not have any jurisdiction have also contacted several county agencies with no help.  
Thanks Cecil Schneider

Thanks,

Sarah Keeler  
District Director  
Congressman Bill Johnson OH-6  
P: 330-337-6951  
F: 330-337-7125



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**From:** Reid, Lisa  
**To:** [ecarter@wendoverfun.com](mailto:ecarter@wendoverfun.com); (b) (6) @yahoo.com; [wbitner@tooeleco.org](mailto:wbitner@tooeleco.org); [jharding@utah.gov](mailto:jharding@utah.gov); [mikemower@utah.gov](mailto:mikemower@utah.gov); [kathleenclarke@utah.gov](mailto:kathleenclarke@utah.gov); [johnbaza@utah.gov](mailto:johnbaza@utah.gov); [fredhayes@utah.gov](mailto:fredhayes@utah.gov); [David Ure](#); [Kim Christy](#); [eric.rogers@intrepidpotash.com](mailto:eric.rogers@intrepidpotash.com); [rick.york@intrepidpotash.com](mailto:rick.york@intrepidpotash.com); [Brenda Bowen](#); [louise@landspeedproductions.biz](mailto:louise@landspeedproductions.biz); [reyres@san.rr.com](mailto:reyres@san.rr.com); [usfra@saltflats.com](mailto:usfra@saltflats.com); (b) (6) @sbcglobal.net; [delvene@bonneville-speedtrials.com](mailto:delvene@bonneville-speedtrials.com); (b) (6) @gmail.com; (b) (6) @yahoo.com; [StuartG@sema.org](mailto:StuartG@sema.org); [peter.jenks@mail.house.gov](mailto:peter.jenks@mail.house.gov); [gary.webster@mail.house.gov](mailto:gary.webster@mail.house.gov); [Laurel.Price@mail.house.gov](mailto:Laurel.Price@mail.house.gov); [derek\\_brown@lee.senate.gov](mailto:derek_brown@lee.senate.gov); [stacy.parobek@mail.house.gov](mailto:stacy.parobek@mail.house.gov); [robert.gastonguay@mail.house.gov](mailto:robert.gastonguay@mail.house.gov); [ashley\\_jonkey@heller.senate.gov](mailto:ashley_jonkey@heller.senate.gov); [Katie\\_pace@heller.senate.gov](mailto:Katie_pace@heller.senate.gov); [lucas\\_ingvoldstad@reid.senate.gov](mailto:lucas_ingvoldstad@reid.senate.gov); [Jenna Whitlock](#); [Kevin Oliver](#); [Michael Nelson](#); [Kent Hoffman](#); [Shelley Smith](#); [Stephen Allen](#); [Roxanne Tea](#); [larry@rockymountainracedeck.com](mailto:larry@rockymountainracedeck.com); [tomb@peterseninc.com](mailto:tomb@peterseninc.com); [mpreston@blm.gov](mailto:mpreston@blm.gov); [Penny Mabie](#); [mbateman@tooeleco.org](mailto:mbateman@tooeleco.org); [SMilne.TooeleCounty@gmail.com](mailto:SMilne.TooeleCounty@gmail.com); [Skye.Sieber](mailto:Skye.Sieber); [mbateman@tooeleco.com](mailto:mbateman@tooeleco.com); [Paul Baker](#); [ron\\_dean@hatch.senate.gov](mailto:ron_dean@hatch.senate.gov); [nathan\\_jackson@hatch.senate.gov](mailto:nathan_jackson@hatch.senate.gov); [sally\\_mero@lee.senate.gov](mailto:sally_mero@lee.senate.gov); [gratton\\_miller@heller.senate.gov](mailto:gratton_miller@heller.senate.gov); [Aaron Curtis](#); [Kimberly Finch](#)  
**Subject:** Bonneville Salt Flats Summit  
**Date:** Tuesday, May 10, 2016 6:45:13 PM  
**Attachments:** [Attendee List 16\\_05.pdf](#)  
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Hello all -

We are getting ready for the upcoming Bonneville Salt Flats Summit on May 17th 8:30 am - 4:30 pm MDT in the Swaner Forum at the Natural History Museum, University of Utah. Please find attached materials that will be discussed at the summit. If you have any questions regarding the summit or the materials, contact Penny Mabie, [pmabie@enviroissues.com](mailto:pmabie@enviroissues.com) or 206-922-6268.

If you have not RSVP'd and you plan to attend, please let me know so we can make sure that enough lunches are ordered.

We look forward to seeing you on May 17th.

Thanks,

*Lisa Reid*

Public Affairs Specialist  
Bureau of Land Management  
95 East 500 North  
Fillmore, Utah 84631  
office: 435-743-3128  
cell: 435.979.2838  
fax: 435.743.3135  
[www.ut.blm.gov](http://www.ut.blm.gov)

| "What you get is a living, what you give is a life."

## 2016 Bonneville Salt Flats Summit

<u>Yes</u>	<u>No</u>	<u>Entity</u>	<u>Title/Name</u>
X		City of East Wendover (NV)	Mayor Emily Carter
X		City of East Wendover (UT)	Mayor Mike Crawford
X		Tooele County	Wade Bitner/Chairman
			Myron Bateman
			Shawn Milne
		State of Utah/Gov Office	Justin Harding/Chief of Staff
			Mike Mower/Deputy Chief of Staff
X		State of Utah/PLPCO	Kathleen Clarke/Director
	X	State of Utah/UDOGM	John Gaza
X			Paul Baker
		State of Utah/State Parks	Fred Hayes
X		SITLA	David Ure/Director
X			Kim Christy/Deputy Director
X		Intrepid Potash	Eric Rogers/Wendover Plant Mgr
X			Rick York/General Manager - Utah
X		University of Utah	Dr. Brenda Bowen
X			Evan/ Grad Student
X		Utah Alliance/Save the Salt	Louise Noeth, Media Contact PIO
		Racing Community	Russ Eyres
X			Tom Burkland
X			Larry Volk
X		UT Salt Flats Racking Asso (USFRA)	Dennis Sullivan, President
		Cook Motorsports	Mike Cook, President
		Bonneville Motorcycle Speed Trails	Delvene Manning, President
X		Southern CA Timing Asso (SCTA)	Bill Latin, President
		Bonneville Nationals (BNI)	Pat McDowell, Chairman



X		Specialty Equipment Manufacturers Asso (SEMA)	Stuart Gosswein, Sr Director
		<u>Utah Delegation Reps</u>	
		Cong Bishop	Peter Jenks, District Director
X			Casey Snider
		Cong Stewart	Gary Webster, District Director
		Cong Love	Laurel Price
		Sen Hatch	Ron Dean, Central, Eastern Coor
X			Nathan Jackson, Constituent Serv
		Sen Lee	Derek Brown, State Director
			Sally Mero, staff scheduling
		<u>NV Delegation Reps</u>	
		Cong Amodei	Stacy Parobek, District Dir
	X		Robert Gastonguay, Constituent Rep
		Sen Heller	Ashley Jonkey, State Dir
			Katie Pace
			Gratton Miller
		Sen Reid	Luke Ingvoldstad
	X	BLM	Neil Kornze, Director
X		BLM	Jenna Whitlock, State Dir
X		BLM	Kevin Oliver, District Manager
X			Skye Sieber, UTSO Planning
X		BLM	Matt Preston, Salt Lake Field Mger
X		BLM	Mike Nelson, SLFO Asst Field Mgr
		BLM	Kent Hoffman. DSD Non Renew
X		BLM	Steve Allen, SLFO Geologist
X		BLM	Roxanne Tea, SLFO Outdoor Rec
X		BLM	Aaron Curtis, UTSO Outdoor Rec



## MEETING AGENDA

### MEETING TIME AND LOCATION

Tuesday, May 17, 8:30 a.m. – 4:30 p.m.,  
Mountain DST

Swaner Forum  
Natural History Museum  
University of Utah  
301 Wakara Way  
Salt Lake City, Utah 84108



### OBJECTIVES

- Share current status of the Salt Flats
- Share current science and future plans
- Share proposals for actions
- Develop framework for working together on proposals
- Develop plan for ongoing communications

### MEETING AGENDA

Time	Topic	Objective	Purpose	Lead
8:30 a.m.	<b>Coffee &amp; Settling In</b>		<ul style="list-style-type: none"> <li>• Networking</li> </ul>	
8:45 a.m.	<b>Welcome &amp; Introductions</b>	<i>Setting the stage</i>	<ul style="list-style-type: none"> <li>• Welcome</li> <li>• Introductions</li> <li>• Ground rules</li> <li>• Review agenda and meeting objectives</li> </ul>	Jenna Whitlock, BLM Penny Mabie, Facilitator
9:00 a.m.	<b>Meeting expectations</b>	<i>Develop shared understanding of what is expected &amp; what can be accomplished</i>	<ul style="list-style-type: none"> <li>• Share expectations</li> <li>• Review &amp; calibrate</li> </ul>	Penny Mabie
9:30 a.m.	<b>Information Sharing</b>	<i>Ensure common understanding of status quo, constraints &amp; processes</i>	<ul style="list-style-type: none"> <li>• BLM – land management</li> <li>• Intrepid Potash – salt brine pumping</li> <li>• Utah Alliance – historical perspective</li> </ul>	Kevin Oliver, BLM Eric Rogers, Intrepid Louise Noeth, Save The Salt
10:30 a.m.	<b>BREAK</b>			

Time	Topic	Objective	Purpose	Lead
10:45 a.m.	State of the Science	<i>Learn about current and future scientific activities</i>	<ul style="list-style-type: none"> <li>• Research update – what we know and what we don't know</li> <li>• Salt crust study</li> <li>• Core drilling plans</li> <li>• Future research announcement</li> <li>• Discussion and clarification</li> </ul>	Dr. Brenda Bowen
Noon	Working lunch	<i>Gather lunch, regroup</i>		All
12:15 p.m.	Proposed Actions	<i>Share and understand all proposed actions</i>	<ul style="list-style-type: none"> <li>• Raring community proposed actions</li> <li>• Other proposed actions</li> <li>• BLM proposed actions</li> <li>• Discussion and clarification</li> </ul>	Tom Burkland or Dennis Sullivan, USFRA Kevin Oliver, BLM
1:15 p.m.	Proposal Dialog and Framework Development	<i>Develop framework for working together on proposals</i>	<ul style="list-style-type: none"> <li>• Identify opportunities, challenges and constraints for proposed actions</li> <li>• Identify priorities</li> <li>• Develop action framework</li> </ul>	All
3:00 p.m.	Proposal Framework	<i>Gain agreement on path forward</i>	<ul style="list-style-type: none"> <li>• Recap framework</li> <li>• Develop commitment to actions</li> </ul>	All
3:15 p.m.	Break			
3:30 p.m.	Communications	<i>Gain agreement on communications methodologies and commitments</i>	<ul style="list-style-type: none"> <li>• Identify desires</li> <li>• Identify constraints</li> <li>• Develop proposed means / topics / participants / schedule</li> <li>• Develop commitment to plan</li> </ul>	All
4:15 p.m.	Next steps and commitments	<i>Review assignments</i>	<ul style="list-style-type: none"> <li>• Recap meeting outcomes</li> <li>• Review commitments</li> </ul>	All
4:30 p.m.	Adjourn			

# MINERAL WITHDRAWAL, SOLID MINERAL LEASING CLOSURE, AND LEASES BONNEVILLE SALT FLATS

R 19 W

R 18 W

R 17 W

R 16 W

R 15 W

T 3 N

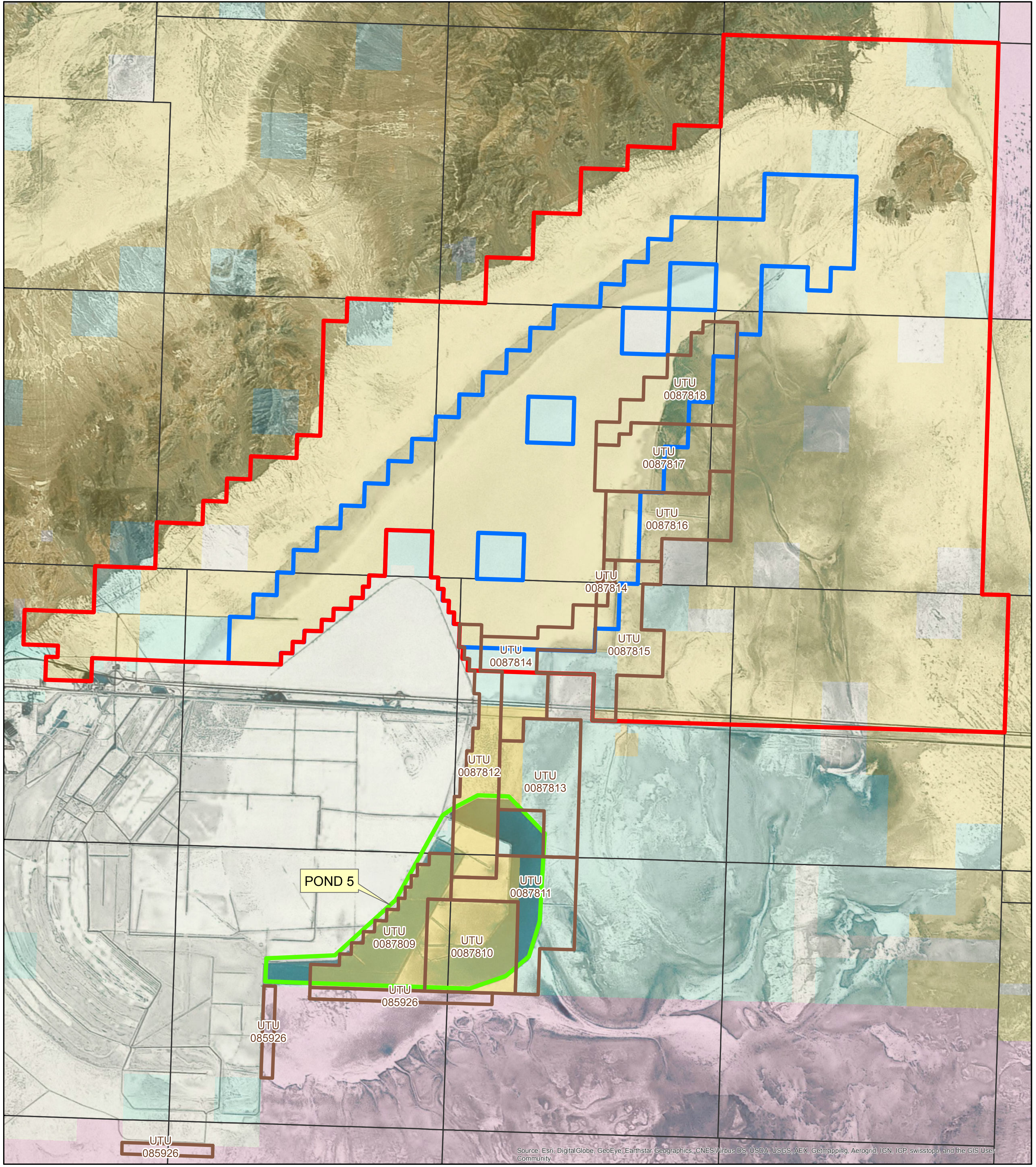
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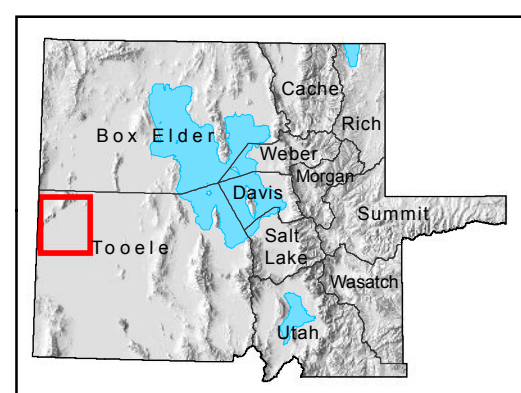
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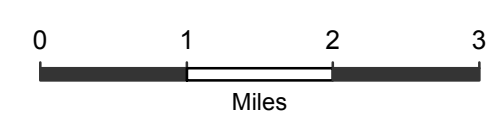
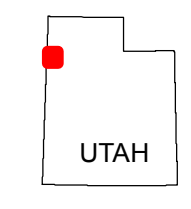


Source: Esri, DigitalGlobe, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Solid Mineral Leasing Closure
- Mineral Withdrawal and ACEC Boundary
- Primary Pond 5

- Land Status**
- Bureau of Land Management (BLM)
  - Military Reservations and Corps of Engineers
  - Private
  - State
  - State Parks and Recreation



April 28, 2016

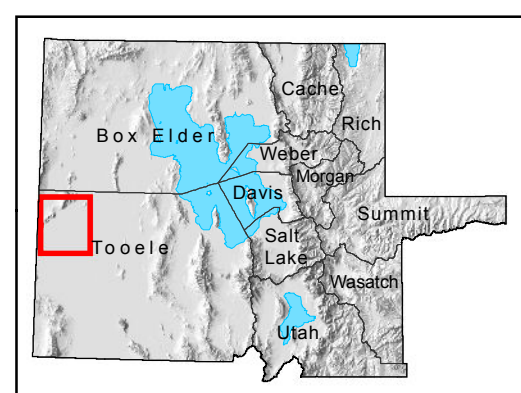
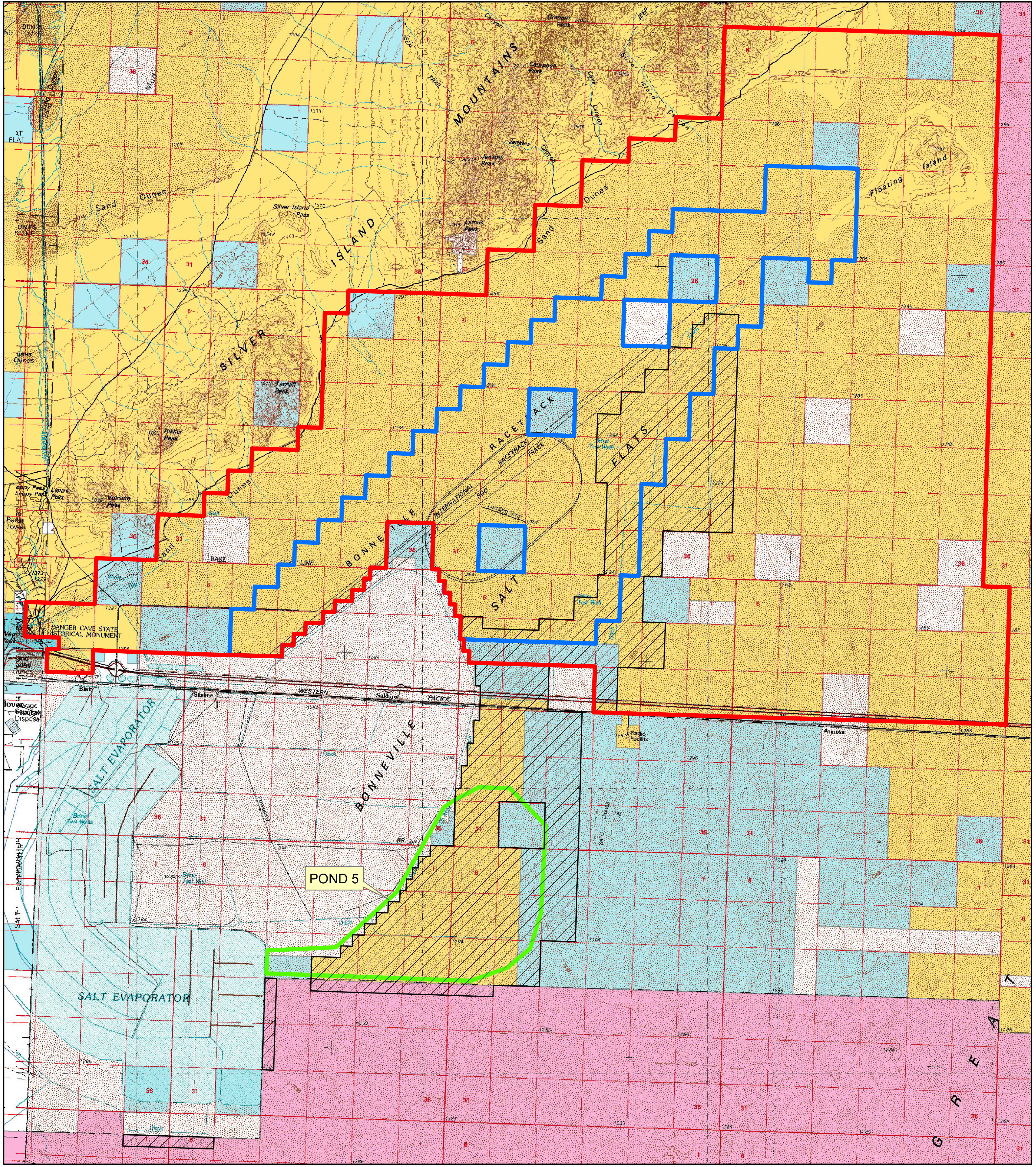
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.



# MINERAL WITHDRAWAL AND SOLID MINERAL LEASING CLOSURE BONNEVILLE SALT FLATS

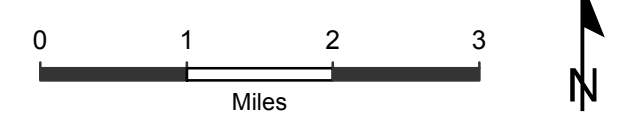
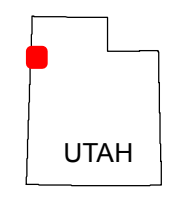
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- Solid Mineral Leasing Closure
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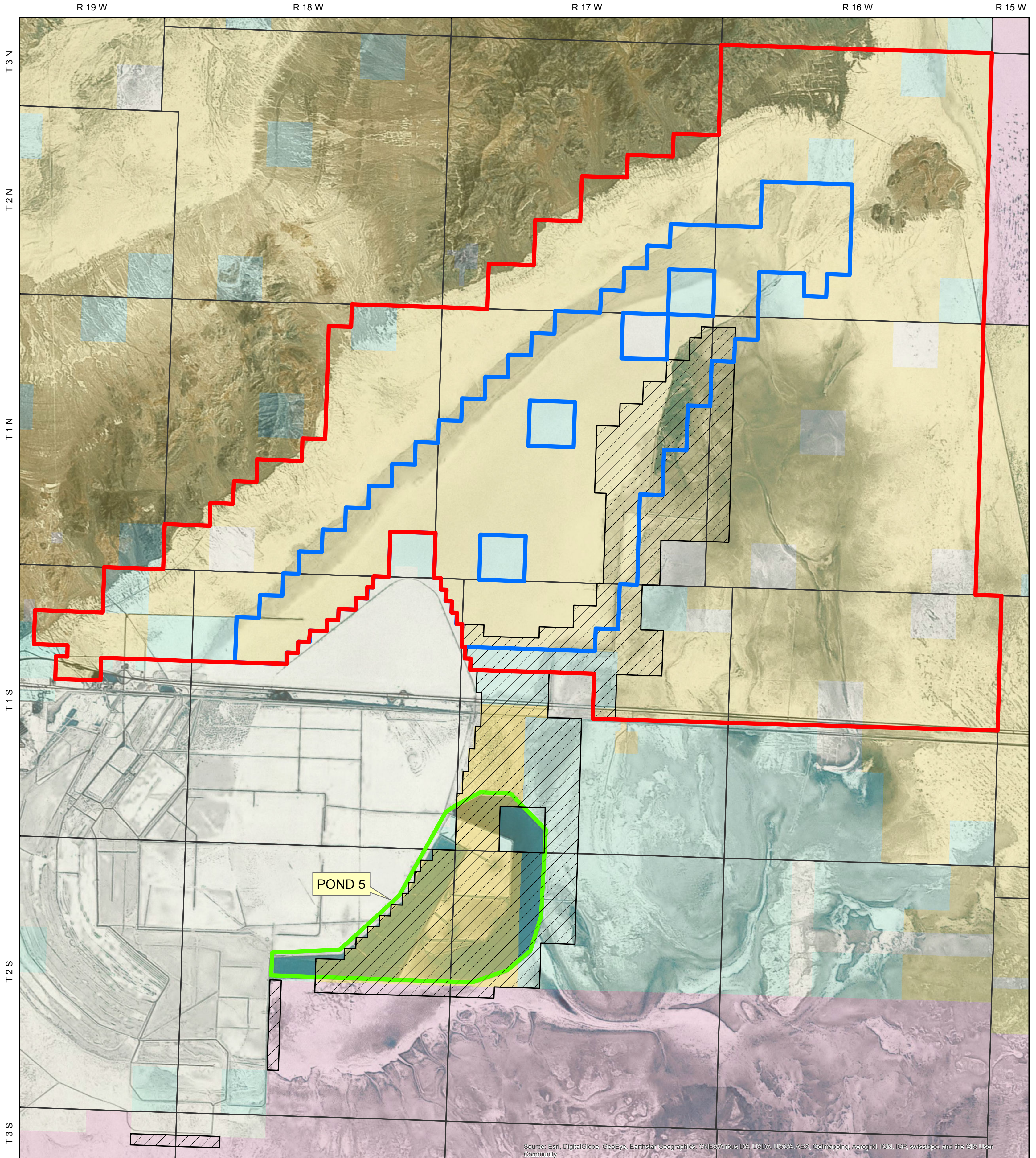


April 28, 2016

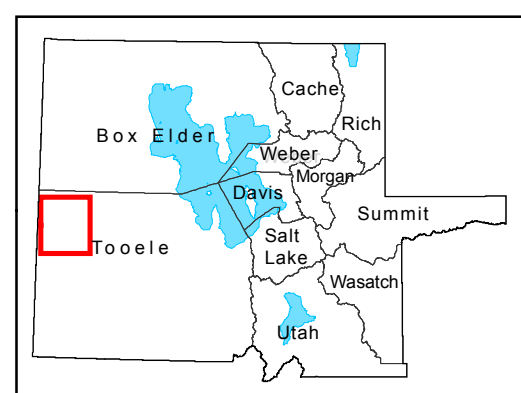
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.



# MINERAL WITHDRAWAL AND SOLID MINERAL LEASING CLOSURE BONNEVILLE SALT FLATS

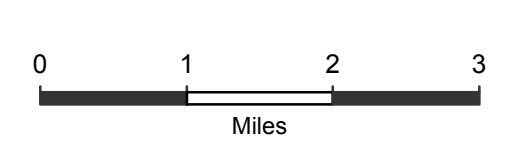
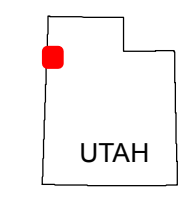


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Solid Mineral Leasing Closure
- Mineral Withdrawal and ACEC Boundary
- Intrepid Leases
- Primary Pond 5

- Land Status**
- Bureau of Land Management (BLM)
  - Military Reservations and Corps of Engineers
  - Private
  - State
  - State Parks and Recreation

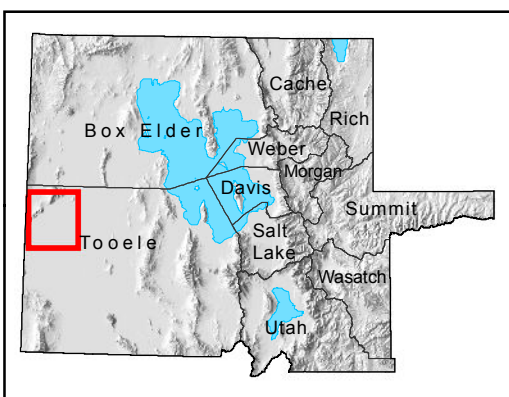
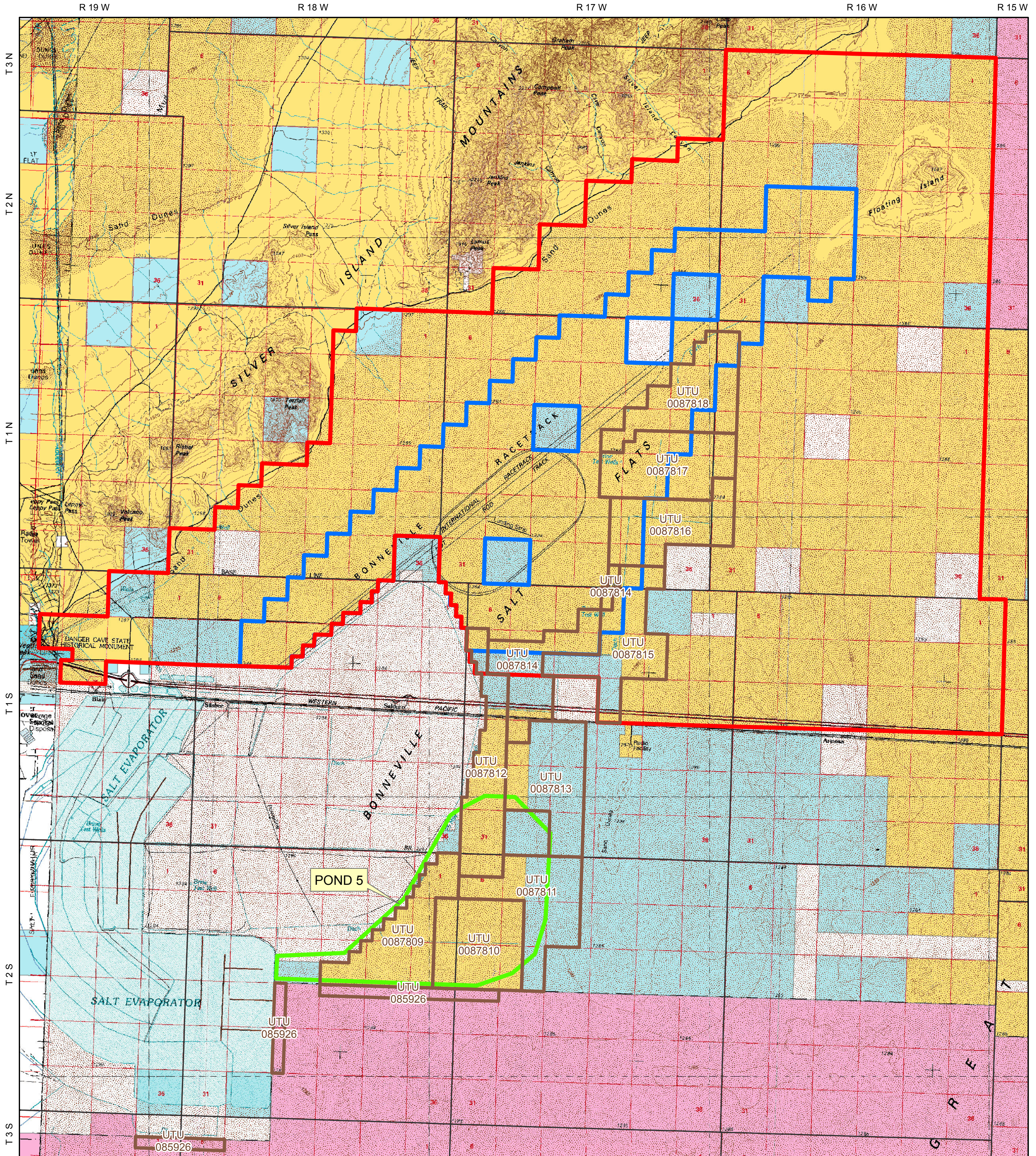


April 28, 2016

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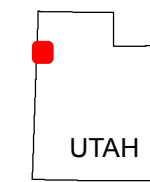


# MINERAL WITHDRAWAL, SOLID MINERAL LEASING CLOSURE, AND LEASES BONNEVILLE SALT FLATS



- Solid Mineral Leasing Closure
- Mineral Withdrawal and ACEC Boundary
- Primary Pond 5

- Land Status**
- Bureau of Land Management (BLM)
  - Military Reservations and Corps of Engineers
  - Private
  - State
  - State Parks and Recreation



April 28, 2016

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.





# BRIEFING PAPER FOR STATUS OF THE BONNEVILLE SALT FLATS MINERAL CLOSURES

## I. BACKGROUND

There are two minerals management issues on the public lands within and surrounding the Bonneville Salt Flats (BSF), mining location and mineral leasing. This paper provides both historical context and current status of the public lands in and around the BSF as it relates to mining under the 1873 mining law and mineral leasing under the mineral leasing act (as amended).

### A. Withdrawals –

1. A portion of the Bonneville Salt Flats , representing the historic oval track, was originally withdrawn from mining location by Public Land Order (PLO) 852 on July 7, 1952. This action was taken in the early days of BLM and was likely done in response to the increasing national reputation and use of BSF as an ideal place to attempt and set automobile speed records. There was no plan decision associated with this action. (expired)
2. Public Land Order 6941 was issued July 30 1992, withdrawing 30,203.06 acres of public land within the BSF ACEC from settlement, sale, location, or entry under the general land laws, including the United States mining laws (30 U.S.S. Ch. 2 (1988), but not from leasing under the mineral leasing laws , to protect the Bonneville Salt Flats. (expired, renewed see PLO 7794)
3. Public Land Order No. 7794 issued August 6, 2012, extended of Public Land Order No. 6941; for an additional 20 years. The extension is necessary to continue the protection of the unique geologic, recreational, and visual resources of the Bonneville Salt Flats. **(CURRENT)**

### B. Planning Decisions

#### **SKULL VALLEY – LAKESIDE – SALT FLATS MANAGEMENT FRAMEWORK PLAN-1973 (Superseded – Historic context only)**

The earliest plan that addressed the BSF was the Skull Valley - Lakeside - Salt Flats Management Framework Plan (MFP) which was approved in 1973. The decisions from that plan relative to the mineral estate of the BSF were as follows:

Minerals Decision (un-numbered) – *Allow no new leases of salines in the vicinity of the Bonneville Raceway until the completions of a study to determine the effects of extraction of salines.*

*Allow continued oil and gas leasing with the following restrictions and stipulations (2) No surface occupancy leasing allowed with no vertical drilling: (a) 1-80 buffer, (b) White Rocks, (c) Simpson Springs and (d) Stansbury Island. (3) No leasing areas: (a) Simpson Springs, (b) north tip of Stansbury Island, (c) Bonneville Speedway.*

Recreation Decision (un-numbered) – *Manage the area to protect the open space values and to provide dispersed recreation. Provide buffer zones for the proposed Utah State Racing museum, Danger Cave Archeological site and for the Simpson Springs recreation complex.*

Watershed (un-numbered) – *Manage the Salt Flats watershed to maintain the recreational aspects of the Salt Flats. There will be no new leasing of the brine allowed until after the trend is determined on the deterioration of brine extraction in the raceway.*

## **TOOELE MANAGEMENT FRAMEWORK PLAN-1984 (Superceded – Historic Context only)**

The next plan that had significant decisions relative to the BSF was the Tooele MFP, which was approved in 1984. The decisions related to the minerals of the BSF are as follows:

Land Tenure Decision 1-7 – *The BSF RA shall be designated an Area of Critical Environmental Concern (ACEC). Additional designations may be made if appropriate, such as designations as a National Natural Landmark.*

*An ACEC management plan shall be developed. It is to be an update of the present Recreation Management Plan. It shall incorporate all decisions about the area made in this plan. It may provide for the construction of facilities if a thorough activity planning process shows them to be desirable.*

*No ROWs or other authorizations shall be granted in the BSF ACEC unless they clearly conform to the ACEC and VRM Class II designations. The ROWs needed through the area will be granted south of the freeway.*

Minerals Decision 2-1b – *30,203 acres of public land in the vicinity of the BSF (see legal description and Overlay MFP3-2A) shall be withdrawn from further locations under the 1872 Mining Law. No action will be taken on this decision until such time as pending acquisitions of non-federal land within the BSF R/A-private land owned by Kaiser Aluminum and Chemical Corp. via private exchange and Stat of Utah via Project Bold or other – are completed to their logical conclusion. All lands which are acquired with mineral rights will be included in this withdrawal. (See attached legal descriptions and Overlay MFP3-2A). It is possible that an additional 16,047 acres of acquired public land could be included in the withdrawal for a total of 46,729 acres.*

Minerals Decision 2-2a – *40,137 acres (2%) of Federal mineral estate within the Tooele Planning Area shall be placed in Category 4 – No Leasing for Oil and Gas. Specific areas included in this decision are as follows:*

### *Bonneville Salt Flats*

*18,529 acres of public land within the BSF RA (see following legal description and Overlay MFP3-2b) shall be closed to further leasing for oil and gas. If additional public lands including minerals are acquired within or adjacent to the perimeter of this area, they shall automatically be included in Category 4 – No Leasing.*

Minerals Decision 2-2b – *28,236 acres (1%) of Federal mineral estate within the Tooele Planning Area shall be placed in Category 3 – Leasing With No Surface Occupancy for Oil and Gas. Specific areas included in this decision are as follows:*

### Bonneville Salt Flats

*12,529 acres of public land within the BSF RA (see attached legal description and Overlay MFP3-2B) shall be open to leasing for oil and gas, but with a provision to prohibit use of the surface. These lands would have to be leased in connection with adjacent public lands in the open category. Any oil/gas activity in the area would have to be conducted from those open category lands. If additional public lands including minerals are acquired within or adjacent to the perimeter of this area and are a logical extension of the area described, they shall automatically be included in Category 3 lands.*

*Minerals Decision 2-3 – 104,816 acres (1%) of Federal mineral estate within the BSF RA (see attached legal description and Overlay MFP3-2B)) shall be closed to further mineral leasing for potash, salts and other similar salines. If additional public lands including minerals are acquired within the perimeter of this area, they shall automatically be closed for the same leasable minerals.*

*Minerals Decision 2-4a – 30,682 acres of federal mineral estate within the BSF R/A area (refer to attached description and Overlay MFP3-2B) shall be closed to leasing for geothermal resources. If additional public lands including minerals are acquired within or adjacent to the area described, they shall automatically be closed to geothermal leasing.*

### **PONY EXPRESS RESOURCE MANAGEMENT PLAN – 1990 (Current)**

The Pony Express RMP was developed a few years later to update the Tooele County MFP and to include the public lands in Utah County in a Pony Express Resource Area wide plan. This plan was approved in January 1990.

*Lands Decision 2 – A total of 411,140 acres of public lands are not available for disposal or any other transfer from Federal ownership and BLM management. These lands are identified in Table 4 and shown in Figure 2. BLM must amend the RMP before any of the areas could be disposed, transferred to another agency or exchanged.*

*A portion of this decision cannot be implemented until the protest is resolved. The protested portion of this decision includes 30,680 acres on the Bonneville Salt Flats. This additional acreage would bring the total acres unavailable for ownership adjustments to 441,820.*

*Lands Decision 5 – In the Pony Express Resource Area, BLM withdrawals will continue for public water reserves and power sites. BLM will continue to pursue withdrawal action on 30,682 acres within the Bonneville Salt Flats, and 709 acres at Simpson Springs Recreation Area (see Figure 3). If not designated wilderness by Congress, the North Deep Creek Mountains will be evaluated for possible withdrawal action.*

*A portion of this decision involving 30,680 acres on the Bonneville Salt Flats is under protest. When the protest is resolved BLM will continue to pursue withdrawal action on the 30,680 acres on the salt flats.*

*Minerals Decision 3 – **The closure of 104,814 acres of Federal mineral estate within the Bonneville Salt Flats Recreation Area will continue until further studies clearly indicate that the closure could be modified without disrupting the natural hydrologic***

*pattern of the entire basin north of I-80. Once definitive information is available, BLM will reevaluate the existing activities (including existing leases) on and adjacent to the Salt Flats. Future activities to be allowed will be based on the results of that evaluation.*

*This closure affects further mineral leasing for potash, salts, and other similar brines. This closure does not affect existing leases, including Reilly's (now Intrepid) leases, so long as they remain in effect and all lease requirements are met.*

*This entire decision is under protest and cannot be implemented until the protest is resolved.*

Recreation Decision 1 – *Manage the following areas as Special Recreation Management Areas (SRMAs): (1) Bonneville Salt Flats Special RMA, 30,203 acres*

*This portion of the decision is under protest and cannot be implemented until the protest is resolved.*

Recreation Decision 2 – *Designate all public land in the Resource Area as either open, closed, or limited for off-road vehicle use.*

Areas of Critical Environmental Concern Decision 1 – *Highest priority is to continue the Bonneville Salt Flats ACEC and to designate the Horseshoe Springs as an ACEC.*

*This decision is under protest and cannot be implemented until the protest is resolved. This decision is to continue to manage 30,203 acres on the Bonneville Salt Flats as an ACEC. The BSF were designated as an ACEC in 1985.*

*The 30,203 acre ACEC will be unavailable for ownership adjustment. The ACEC will be closed to leasing for potash, salts and other brines. The area is also proposed for a mineral withdrawal. The ACEC is in Fluid Mineral Category 3, No Surface Occupancy. The ACEC is also a SRMA. The VRM classes are II and III.*

#### **1992 OHV Plan Amendment (Current)**

*In March 1992 the 1990 Recreation Decision 2 was amended by the 1992 OHV plan amendment which designated the BSF as B-5, where motor vehicle use is limited by a seasonal closure during the spring the with salt is moist or has standing water on the surface. Closure dates may vary and will be posted by sign.*

#### **C. Resolution of Protest of Pony Express RMP**

In May 1990, a letter was sent from the BLM Director to the law firm representing Riley-Wendover Industries (Attach 3), the potash company operating the potash facility east of Wendover at the time, rejecting the protest filed by Riley-Wendover and allowing the protested decisions to stand as a final agency decision. Therefore all BLM decisions under protest in the Pony Express RMP were made effective and ready for implementation at that time.

#### **D. ACTIONS TAKEN TO DATE BASED ON PLANNING DECISIONS**

After resolution of the protest by Director's Decision the following protested decisions have been implemented:

1. Public Land Order 6941 was issued July 30 1992, withdrawing 30,203.06 acres of public land within the BSF ACEC from settlement, sale, location, or entry under the general land laws, including the United States mining laws (30 U.S.S. Ch. 2 (1988), but not from leasing under the mineral leasing laws , to protect the Bonneville Salt Flats.
2. Public Land Order No. 7794 issued August 6, 2012, extended of Public Land Order No. 6941; for an additional 20 years. The extension is necessary to continue the protection of the unique geologic, recreational, and visual resources of the Bonneville Salt Flats.
3. Minerals, Recreation, and ACEC program decisions protested in the 1990 Pony Express RMP became effective in May 1990 when BLM Director rejected the protest. This meant, among other actions, that the closure of 104,814 acres of Federal mineral estate to mineral leasing for potash, salts, and other similar brines within the Bonneville Salt Flats Recreation Area will continue until further studies clearly indicate that the closure could be modified without disrupting the natural hydrologic pattern of the entire basin north of I-80.
4. Plan maintenance sheets may be beneficial to add clarity to the planning decisions that were affected by the protest.

**Attachments:**

Map 1

Map 2

BLM Protest Resolution

**From:** Fauerbach, Erin (Wyden)  
**To:** [Brown, Mark](#)  
**Subject:** S. 814 and S. 815  
**Date:** Wednesday, May 11, 2016 12:42:50 PM  
**Attachments:** [MAP - Oregon Coastal - 3.27.13.pdf](#)  
[MAP - Canyon Mountain - 6.27.13.pdf](#)  
[Cow Creek bill updated draft.doc](#)  
[Coos bill updated draft.doc](#)  
[BLM Map - PD & O&C lands.docx](#)

---

Mark,

Attached are a few things that go along with the requests below that we talked over on the phone. Thanks for your help!

- 1) Maps – We’d like to get updated maps for S. 814 and S. 815. The old maps are attached
- 2) Access language – In the attached updated drafts you’ll see the access language is new. We discussed that the BLM has specific access needs to the Coos lands but just general access needs to the Cow Creek lands. The new language requires that the Secretary and the Tribes come up with access agreements to address the specific access needs and says this must be done within 90 days of bill passage and prior the land officially transferring to the Tribes. I think this is better than legislating the specific access needs in case those needs change in the future. We could also put something in there that says the agreements can be updated if needed in the future but have to be mutually agreed to, or something.
- 3) PD & O&C Map – The attached map is an example that I got from DeFazio’s office of what we’d like to see, except instead of identifying projects like this map does, we’d like to identify the land going to the Coos and Cow Creek, along with the PD lands and the O&C lands and the county boundaries.

Let me know if you have any questions. I’m looking forward to getting these wrapped up!

Thank you for all your help!

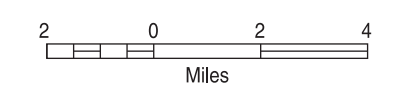
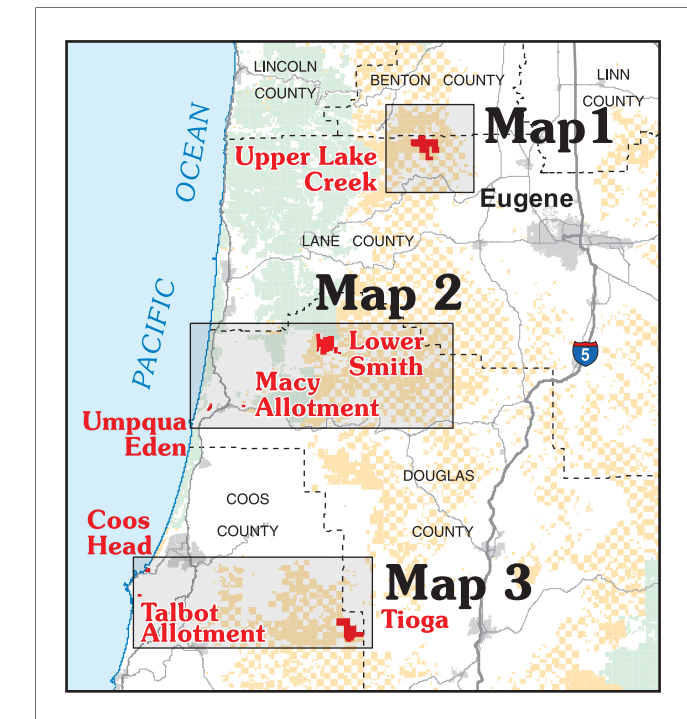
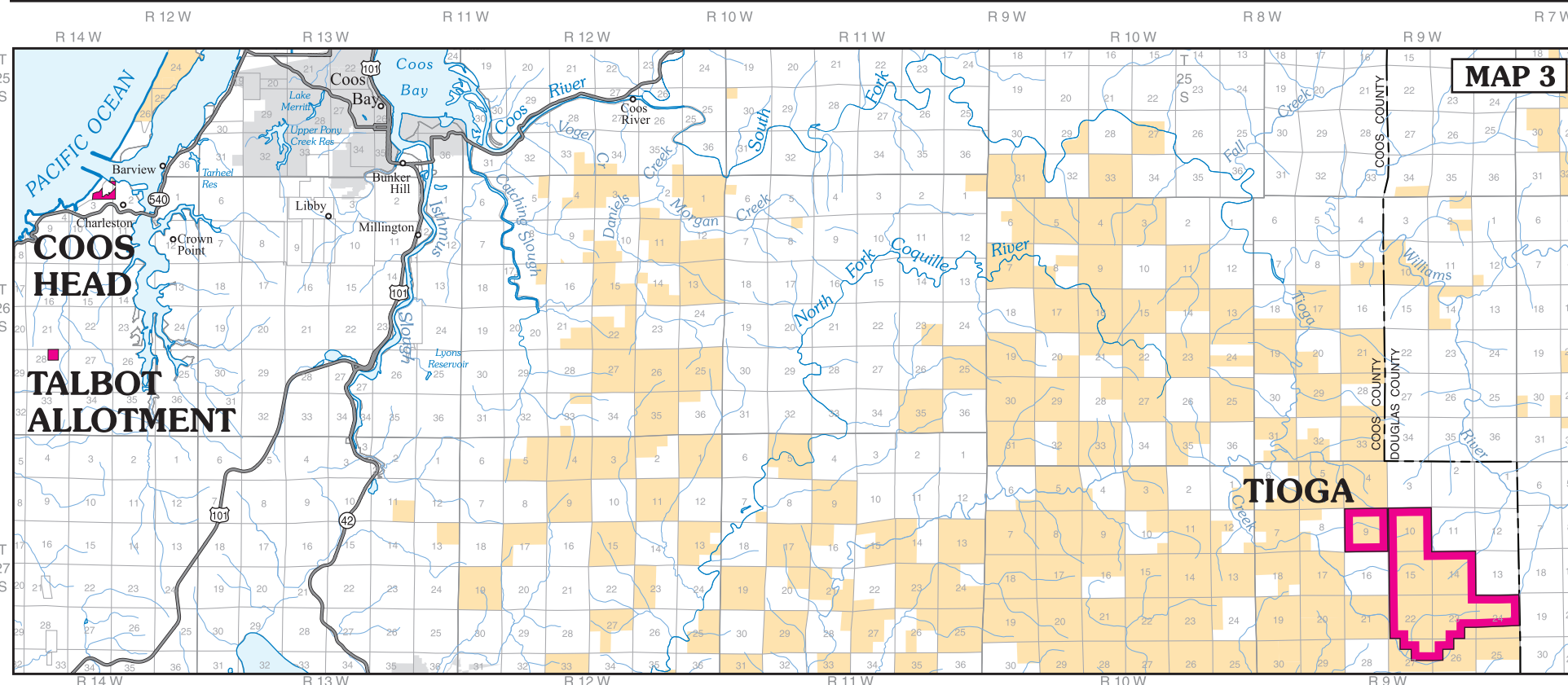
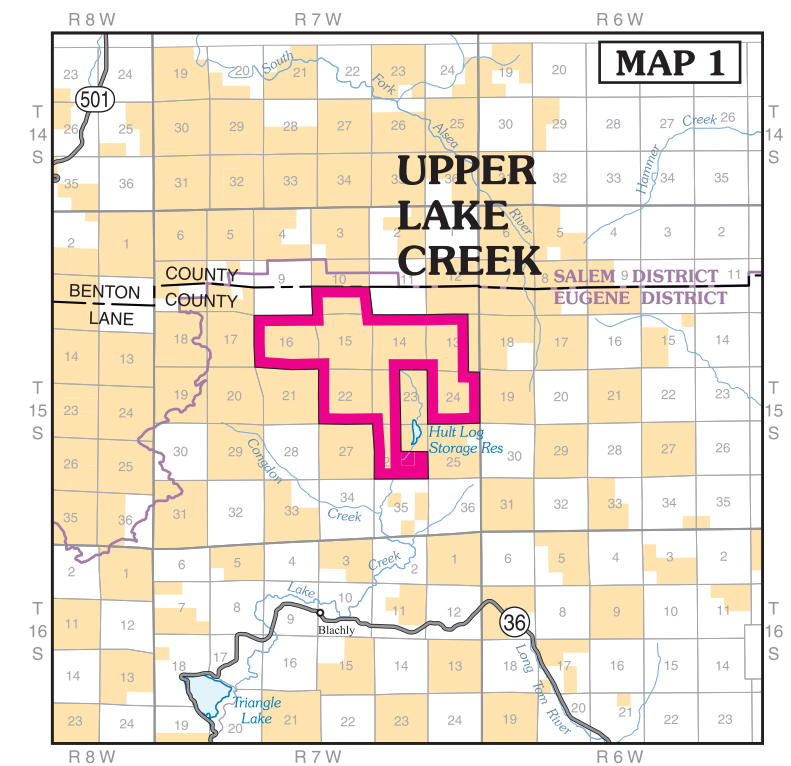
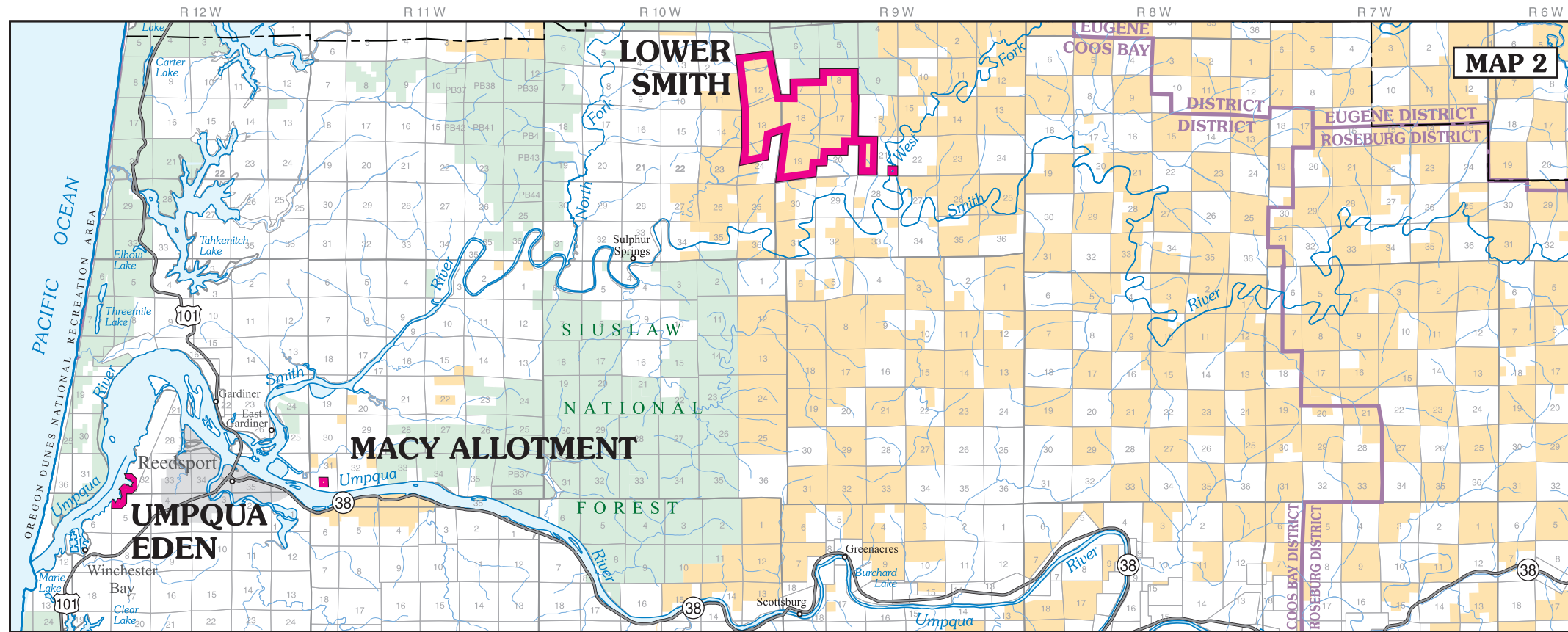
Erin



# OREGON COASTAL LAND CONVEYANCE MAP

March 27, 2013

This map prepared at the request of U.S. Senator Ron Wyden



LEGEND	
	Oregon Coastal Land Conveyance Area Of Interest
	Administered Land Bureau of Land Management
	U.S. Forest Service
	Private
	Highway

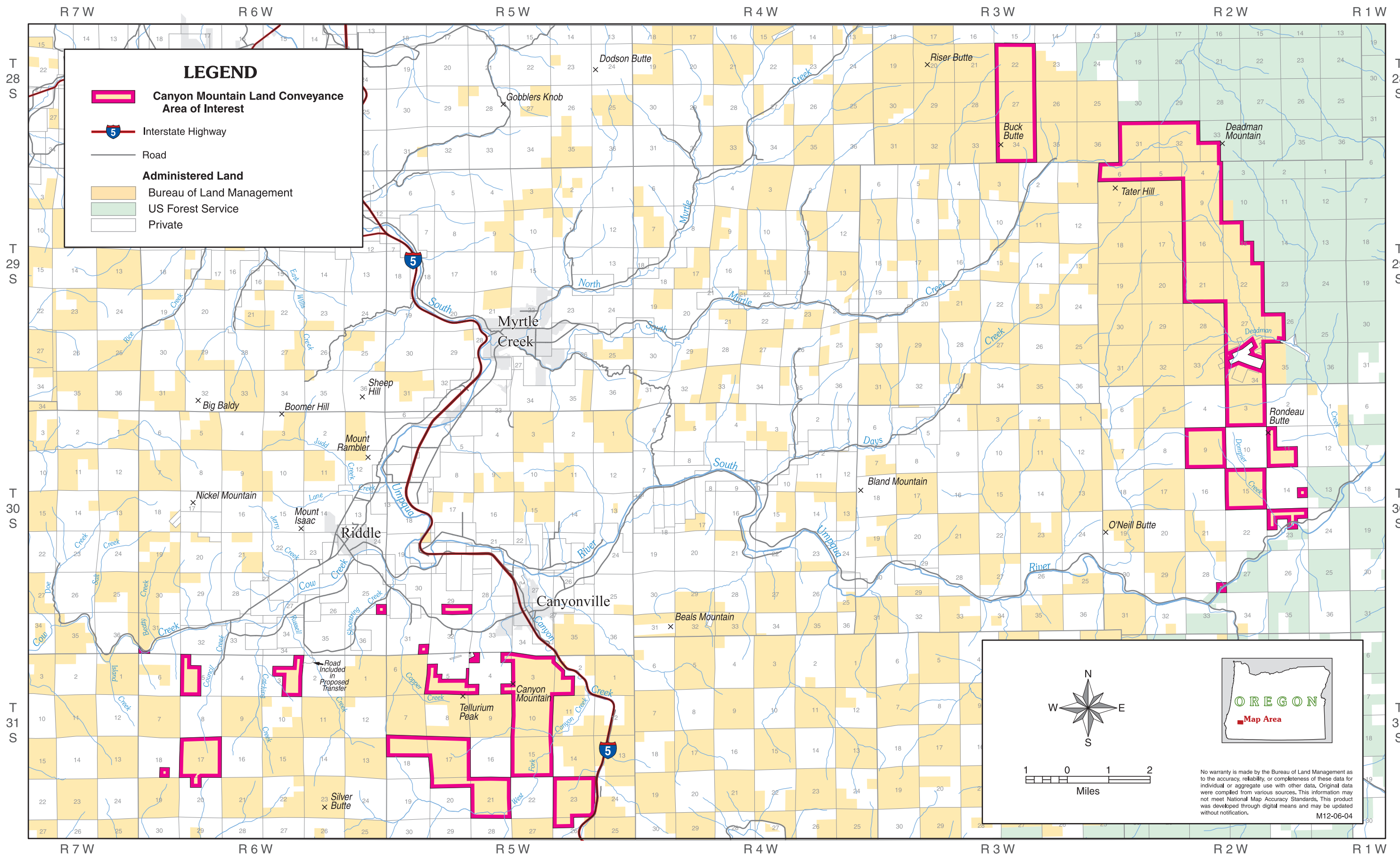
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# CANYON MOUNTAIN LAND CONVEYANCE

June 27, 2013

This map prepared at the request of U.S. Senator Ron Wyden



**LEGEND**

- Canyon Mountain Land Conveyance Area of Interest
- Interstate Highway
- Road
- Administered Land**
  - Bureau of Land Management
  - US Forest Service
  - Private

Scale: 0 to 2 Miles

OREGON  
Map Area

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1 Title: To provide for the conveyance of certain Federal land in the State of Oregon to the Cow  
2 Creek Band of Umpqua Tribe of Indians.

3  
4  
5 Be it enacted by the Senate and House of Representatives of the United States of America in  
6 Congress assembled,

## 7 SECTION 1. SHORT TITLE.

8 This Act may be cited as the “Cow Creek Umpqua Land Conveyance Act”.

## 9 SEC. 2. DEFINITIONS.

10 In this Act:

11 (1) COUNCIL CREEK LAND.—The term “Council Creek land” means the approximately  
12 17,519 acres of land, as generally depicted on the map entitled “Canyon Mountain Land  
13 Conveyance” and dated June 27, 2013.

14 (2) TRIBE.—The term “Tribe” means the Cow Creek Band of Umpqua Tribe of Indians.

15 (3) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

## 16 SEC. 3. CONVEYANCE.

17 (a) In General.—Subject to valid existing rights, including rights-of-way, all right, title, and  
18 interest of the United States in and to the Council Creek land, including any improvements  
19 located on the land, appurtenances to the land, and minerals on or in the land, including oil and  
20 gas, shall be—

21 (1) held in trust by the United States for the benefit of the Tribe; and

22 (2) part of the reservation of the Tribe.

23 (b) Survey.—Not later than ~~4~~<sup>3</sup> years after the date of enactment of this Act, the Secretary  
24 shall complete a survey of the boundary lines to establish the boundaries of the land taken into  
25 trust under subsection (a).

## 26 SEC. 4. MAP AND LEGAL DESCRIPTION.

27 (a) In General.—As soon as practicable after the date of enactment of this Act, the Secretary  
28 shall file a map and legal description of the Council Creek land with—

29 (1) the Committee on Energy and Natural Resources of the Senate; and

30 (2) the Committee on Natural Resources of the House of Representatives.

31 (b) Force and Effect.—The map and legal description filed under subsection (a) shall have the  
32 same force and effect as if included in this Act, except that the Secretary may correct any clerical  
33 or typographical errors in the map or legal description.

34 (c) Public Availability.—The map and legal description filed under subsection (a) shall be on  
35 file and available for public inspection in the Office of the Secretary.

## 1 SEC. 5. ADMINISTRATION.

2 (a) In General.—Unless expressly provided in this Act, nothing in this Act affects any right or  
3 claim of the Tribe existing on the date of enactment of this Act to any land or interest in land.

4 (b) Prohibitions.—

5 (1) EXPORTS OF UNPROCESSED LOGS.—Federal law (including regulations) relating to the  
6 export of unprocessed logs harvested from Federal land shall apply to any unprocessed logs  
7 that are harvested from the Council Creek land.

8 (2) NON-PERMISSIBLE USE OF LAND.—Any real property taken into trust under section 3  
9 shall not be eligible, or used, for any gaming activity carried out under Public Law 100–497  
10 (25 U.S.C. 2701 et seq.).

11 (c) Forest Management.—Any forest management activity that is carried out on the Council  
12 Creek land shall be managed in accordance with all applicable Federal laws.

13 (d) Agreements.—

14 (1) In General.—The Tribe shall consult with the Secretary and other parties as necessary to  
15 develop agreements to provide for access to the Council Creek Land taken into trust under  
16 section 3 that provide for—

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17 (A) honoring existing reciprocal right-of-way agreements; and

18 (B) administrative access by the Bureau of Land Management and agents and contractors  
19 acting on their behalf for such purposes including, but not limited to: forest management;  
20 timber and rock haul; road maintenance; wildland fire protection and management;  
21 cadastral surveys; wildlife, cultural and other surveys; and law enforcement activities.

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22 (2) The access agreements described in Subsection (1) shall be completed prior to the land  
23 transfer and not later than 90 days after the date of enactment of this Act.

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## 25 SEC. 6. LAND RECLASSIFICATION.

26 (a) Identification of Oregon and California Railroad Grant Land.—Not later than 180 days  
27 after the date of enactment of this Act, the Secretary of Agriculture and the Secretary shall  
28 identify any Oregon and California Railroad grant land that is held in trust by the United States  
29 for the benefit of the Tribe under section 3.

30 (b) Identification of Public Domain Land.—Not later than ~~18 months~~ 3 years after the date of  
31 enactment of this Act, the Secretary shall identify public domain land in the State of Oregon  
32 that—

33 (1) is approximately equal in acreage and condition as the Oregon and California  
34 Railroad grant land identified under subsection (a); and

35 (2) is located ~~in the vicinity of the~~ within the 18 western Oregon and California Railroad  
36 grant land counties, excluding Klamath County.

37 (c) Maps.—Not later than ~~2-4~~ 2-4 years after the date of enactment of this Act, the Secretary shall  
38 submit to Congress and publish in the Federal Register 1 or more maps depicting the land

1 identified in subsections (a) and (b).

2 (d) Reclassification.—

3 (1) IN GENERAL.—After providing an opportunity for public comment, the Secretary shall  
4 reclassify the land identified in subsection (b) as Oregon and California Railroad grant land.

5 (2) APPLICABILITY.—The Act of August 28, 1937 (43 U.S.C. 1181a et seq.), shall apply  
6 to land reclassified as Oregon and California Railroad grant land under paragraph (1).

1 Title: To provide for the conveyance of certain Federal land in the State of Oregon to the  
2 Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians.

3  
4  
5 Be it enacted by the Senate and House of Representatives of the United States of America in  
6 Congress assembled,

## 7 SECTION 1. SHORT TITLE.

8 This Act may be cited as the “Oregon Coastal Land Act”.

## 9 SEC. 2. DEFINITIONS.

10 In this Act:

11 (1) CONFEDERATED TRIBES.—The term “Confederated Tribes” means the Confederated  
12 Tribes of Coos, Lower Umpqua, and Siuslaw Indians.

13 (2) OREGON COASTAL LAND.—The term “Oregon Coastal land” means the approximately  
14 14,408 acres of land, as generally depicted on the map entitled “Oregon Coastal Land  
15 Conveyance” and dated March 27, 2013.

16 (3) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

## 17 SEC. 3. CONVEYANCE.

18 (a) In General.—Subject to valid existing rights, including rights-of-way, all right, title, and  
19 interest of the United States in and to the Oregon Coastal land, including any improvements  
20 located on the land, appurtenances to the land, and minerals on or in the land, including oil and  
21 gas, shall be—

22 (1) held in trust by the United States for the benefit of the Confederated Tribes; and

23 (2) part of the reservation of the Confederated Tribes.

24 (b) Survey.—Not later than ~~1~~3 years after the date of enactment of this Act, the Secretary  
25 shall complete a survey of the boundary lines to establish the boundaries of the land taken into  
26 trust under subsection (a).

## 27 SEC. 4. MAP AND LEGAL DESCRIPTION.

28 (a) In General.—As soon as practicable after the date of enactment of this Act, the Secretary  
29 shall file a map and legal description of the Oregon Coastal land with—

30 (1) the Committee on Energy and Natural Resources of the Senate; and

31 (2) the Committee on Natural Resources of the House of Representatives.

32 (b) Force and Effect.—The map and legal description filed under subsection (a) shall have the  
33 same force and effect as if included in this Act, except that the Secretary may correct any clerical  
34 or typographical errors in the map or legal description.

35 (c) Public Availability.—The map and legal description filed under subsection (a) shall be on  
36 file and available for public inspection in the Office of the Secretary.

## 1 SEC. 5. ADMINISTRATION.

2 (a) In General.—Unless expressly provided in this Act, nothing in this Act affects any right or  
3 claim of the Confederated Tribes existing on the date of enactment of this Act to any land or  
4 interest in land.

5 (b) Prohibitions.—

6 (1) EXPORTS OF UNPROCESSED LOGS.—Federal law (including regulations) relating to the  
7 export of unprocessed logs harvested from Federal land shall apply to any unprocessed logs  
8 that are harvested from the Oregon Coastal land taken into trust under section 3.

9 (2) NON-PERMISSIBLE USE OF LAND.—Any real property taken into trust under section 3  
10 shall not be eligible, or used, for any gaming activity carried out under Public Law 100–497  
11 (25 U.S.C. 2701 et seq.).

12 (c) Laws Applicable to Commercial Forestry Activity.—Any commercial forestry activity that  
13 is carried out on the Oregon Coastal land taken into trust under section 3 shall be managed in  
14 accordance with all applicable Federal laws.

15 (d) Agreements.—

16 (1) In General.—The Tribe shall consult with the Secretary and other parties as necessary to  
17 develop agreements to provide for access to the Council Creek Land taken into trust under  
18 section 3 that provide for—

19 (A) honoring existing reciprocal right-of-way agreements; and

20 (B) administrative access by the Bureau of Land Management and agents and contractors  
21 acting on their behalf for such purposes including, but not limited to: forest management;  
22 timber and rock haul; road maintenance; wildland fire protection and management;  
23 cadastral surveys; wildlife, cultural and other surveys; and law enforcement activities.

24 (2) The access agreements described in Subsection (1) shall be completed prior to the land  
25 transfer and not later than 90 days after the date of enactment of this Act.

26 ~~(d) Agreements.—The Confederated Tribes shall consult with the Secretary and other parties~~  
27 ~~as necessary to develop agreements to provide for access to the Oregon Coastal land taken into~~  
28 ~~trust under section 3 that provide for—~~

29  
30 (4) Access to Hult Log Storage Reservoir.—The terms of public vehicular transit across the  
31 Oregon Coastal Land to and from the Hult Log Storage Reservoir located in Township 15  
32 South, Range 7 West, as generally depicted on the map entitled “Oregon Coastal Land  
33 Conveyance” and dated March 27, 2013. If the Bureau of Land Management discontinues  
34 maintenance of the public recreation site known as the Hult Reservoir, then the terms of any  
35 then-existing agreement securing public vehicular transit to and from the lake known as the  
36 Hult Log Storage Reservoir shall be void.

37 (e) Land Use Planning Requirements.—Except as provided in subsection (c), once the Oregon  
38 Coastal land is taken into trust under section 3, the land shall not be subject to the land use  
39 planning requirements of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701

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1 et seq.) or the Act of August 28, 1937 (43 U.S.C. 1181a et seq.).

## 2 SEC. 6. LAND RECLASSIFICATION.

3 (a) Identification of Oregon and California Railroad Grant Land.—Not later than 180 days  
4 after the date of enactment of this Act, the Secretary of Agriculture and the Secretary shall  
5 identify any Oregon and California Railroad grant land that is held in trust by the United States  
6 for the benefit of the Confederated Tribes under section 3.

7 (b) Identification of Public Domain Land.—Not later than ~~18 months~~ 3 years after the date of  
8 enactment of this Act, the Secretary shall identify public domain land in the State of Oregon  
9 that—

10 (1) is approximately equal in acreage and condition as the Oregon and California  
11 Railroad grant land identified under subsection (a); and

12 (2) is located ~~in the vicinity of the~~ within the 18 western Oregon and California Railroad  
13 grant land counties, excluding Klamath County.

14 (c) Maps.—Not later than ~~2-4~~ years after the date of enactment of this Act, the Secretary shall  
15 submit to Congress and publish in the Federal Register 1 or more maps depicting the land  
16 identified in subsections (a) and (b).

17 (d) Reclassification.—

18 (1) IN GENERAL.—After providing an opportunity for public comment, the Secretary shall  
19 reclassify the land identified in subsection (b) as Oregon and California Railroad grant land.

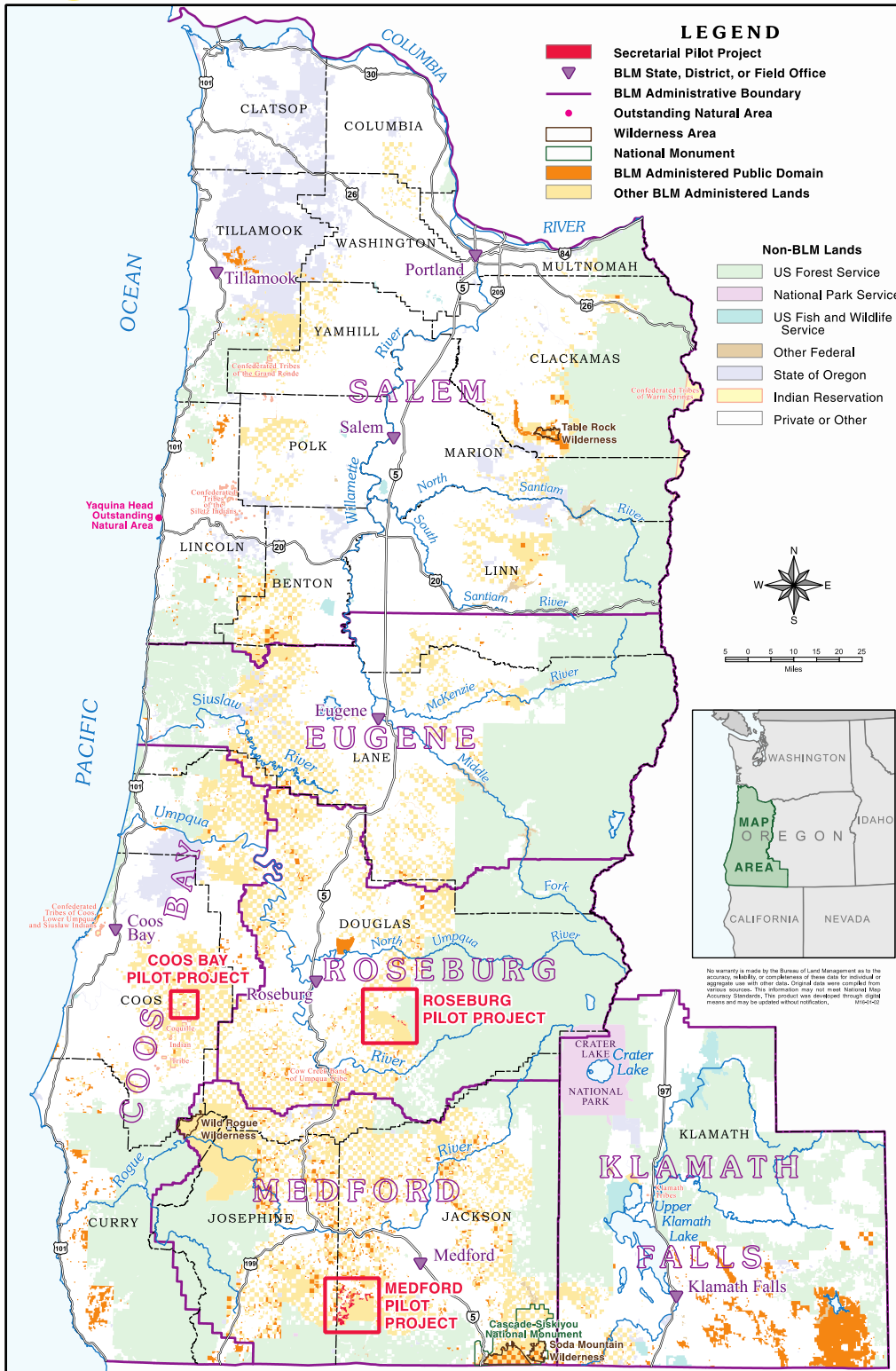
20 (2) APPLICABILITY.—The Act of August 28, 1937 (43 U.S.C. 1181a et seq.), shall apply  
21 to land reclassified as Oregon and California Railroad grant land under paragraph (1).



# Western Oregon Public Domain Lands

February 1, 2016

This map prepared at the request of Representative Peter DeFazio



**From:** Keeler, Sarah  
**To:** [wrightsmarine@gmail.com](mailto:wrightsmarine@gmail.com)  
**Cc:** [dcarnahan@blm.gov](mailto:dcarnahan@blm.gov)  
**Subject:** Electric Service  
**Date:** Wednesday, May 11, 2016 2:31:10 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)

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Mr. Schneider,

Thank you for contacting Congressman Bill Johnson regarding your questions about electric service.

Your question about who has the authority to inspect electric service on an oil and gas lease may be able to be addressed by the Bureau of Land Management. For your convenience, I have copied Davida Carnahan from the BLM on this email. She needs some further information from you, such as location of the lease, and whether it is a federal lease. I hope your issue is properly addressed.

Please don't hesitate to reach out if you have further questions.

Sarah Keeler  
District Director  
Congressman Bill Johnson OH-6  
P: 330-337-6951  
F: 330-337-7125



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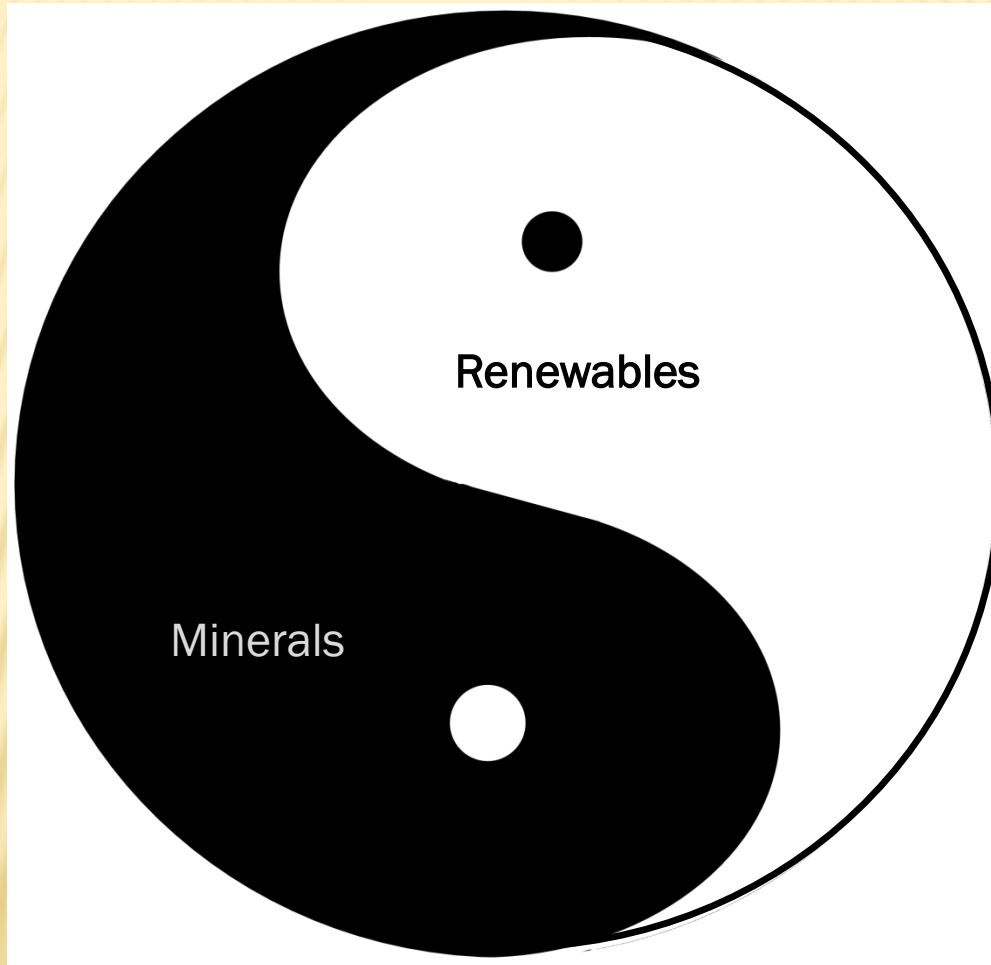
**From:** Mankiewicz, David  
**To:** [calvert\\_curley@tomudall.senate.gov](mailto:calvert_curley@tomudall.senate.gov); [Leona Begay](#)  
**Subject:** Power point  
**Date:** Wednesday, May 11, 2016 4:55:12 PM  
**Attachments:** [Farmington Field Office Fluid Minerals Overview May 10 2016.pptx](#)

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See attached.

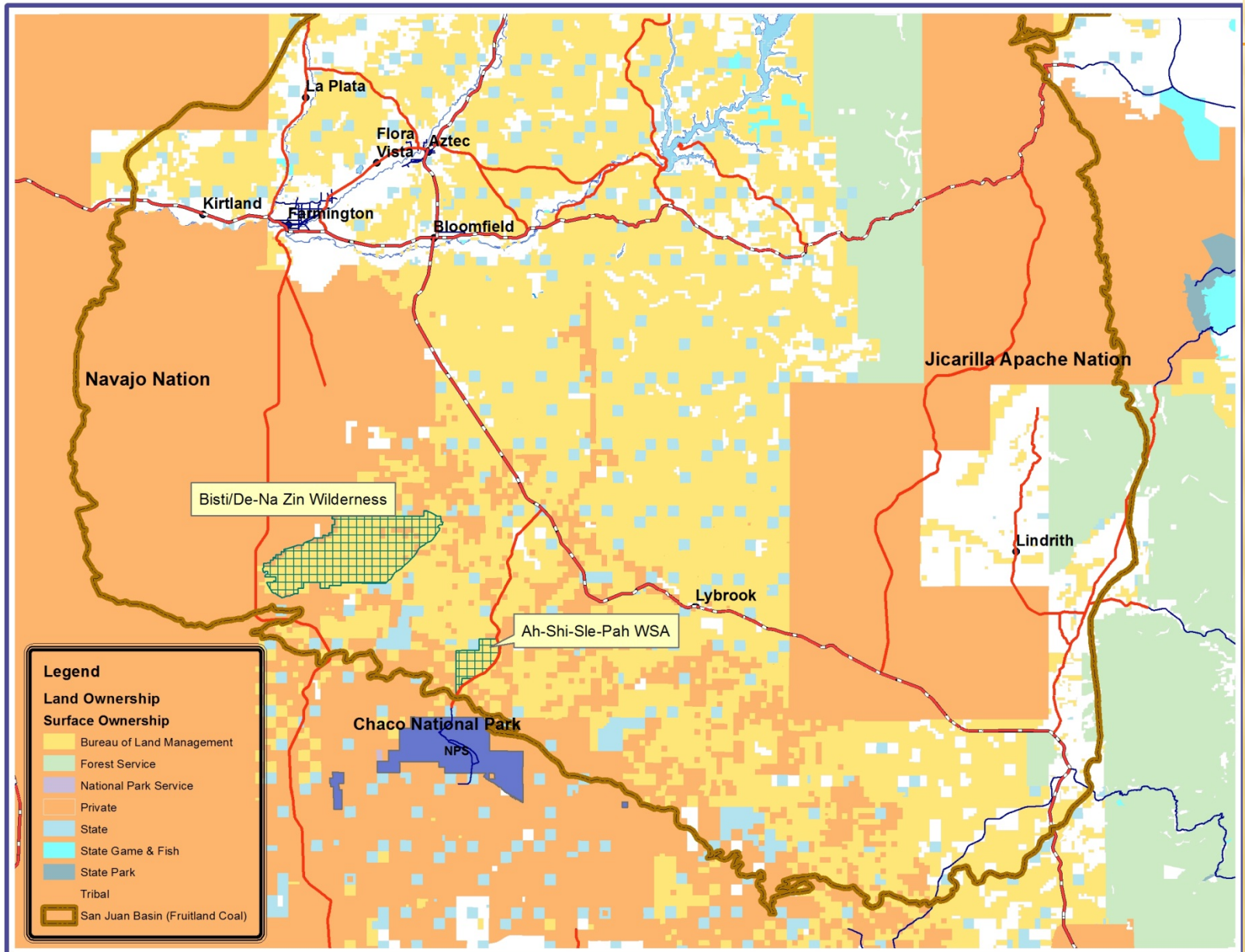
# **FARMINGTON FIELD OFFICE MINERALS OVERVIEW**

# YIN-YANG RELATIONSHIP IN THE FARMINGTON FIELD OFFICE

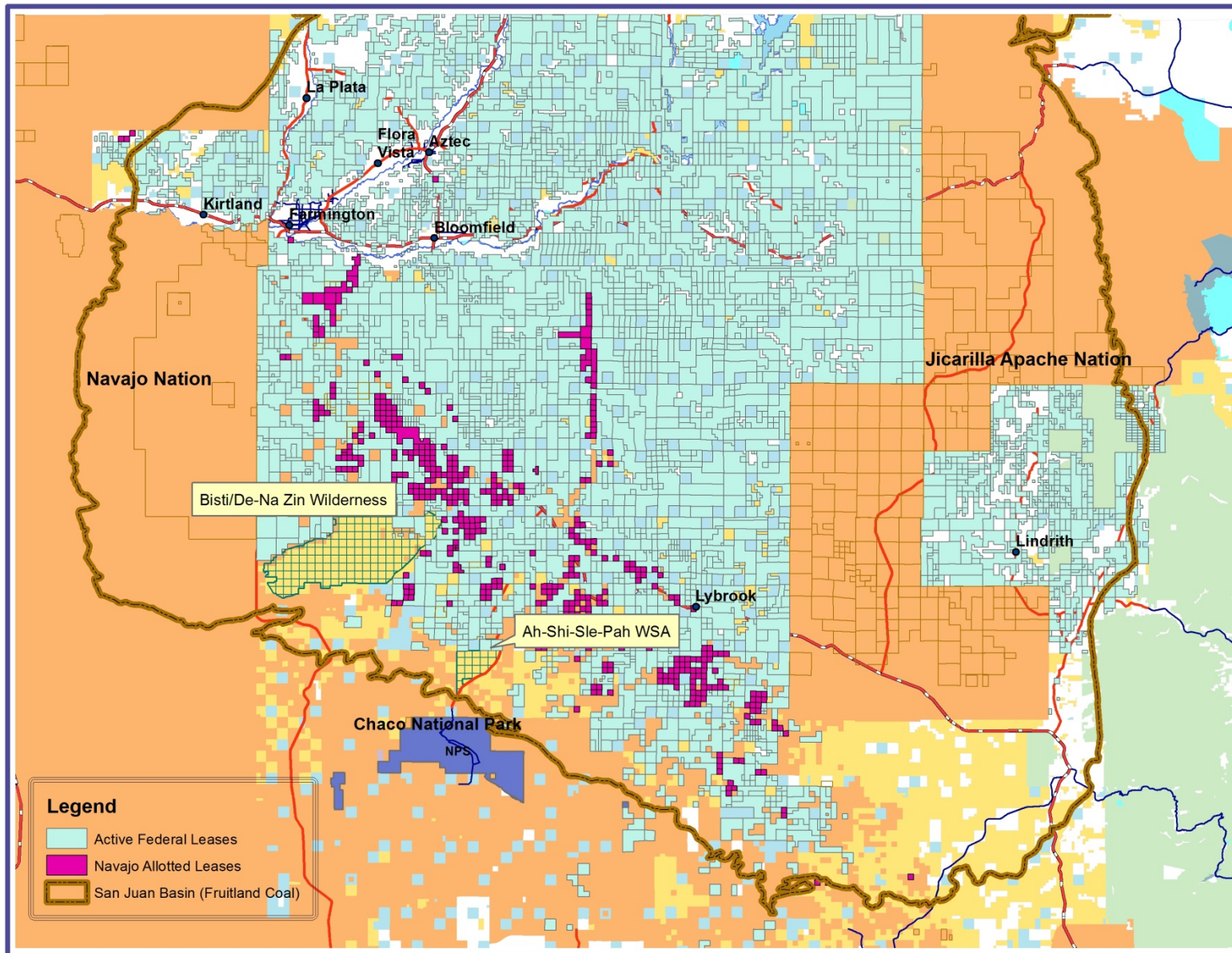




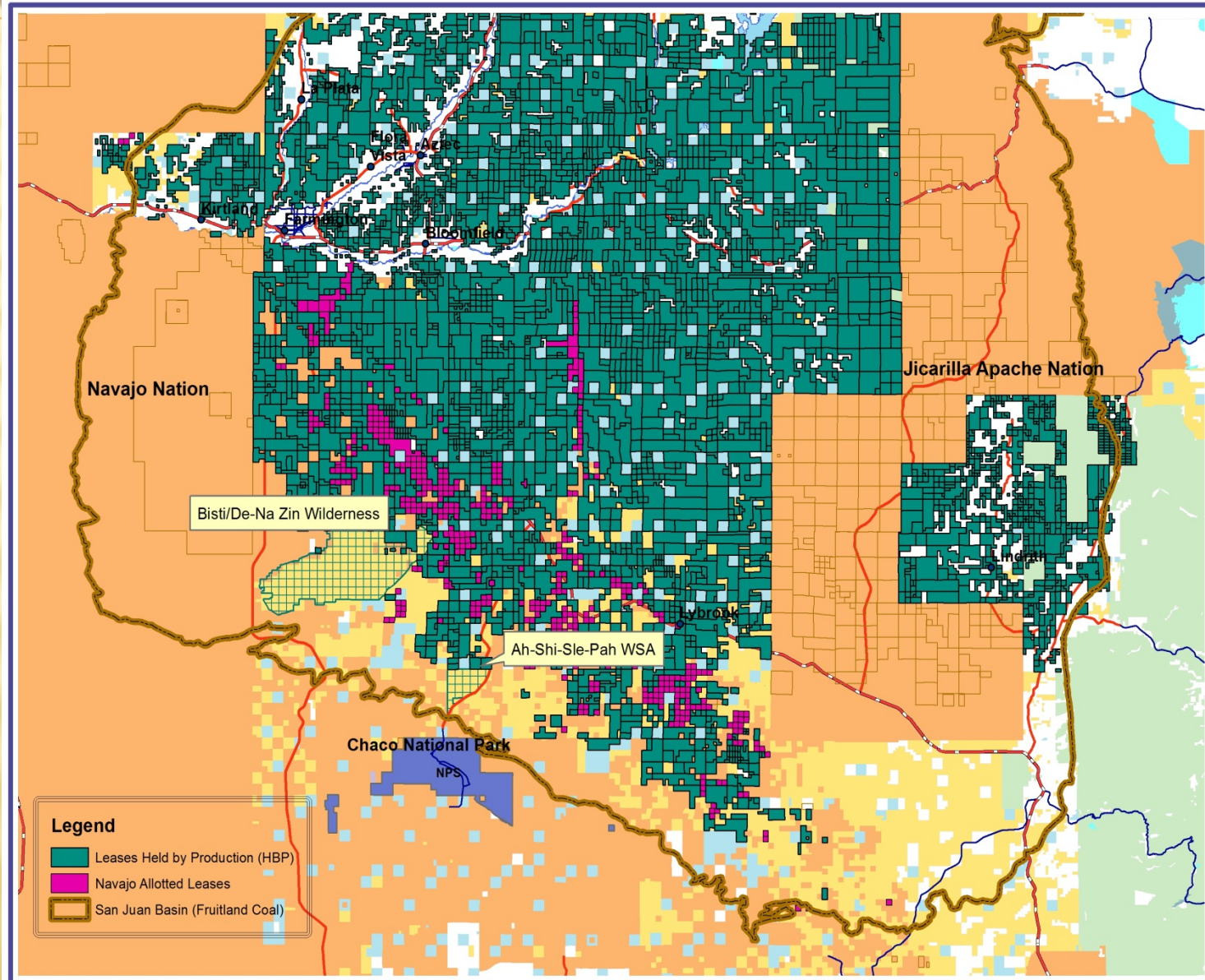
# LAND OWNERSHIP



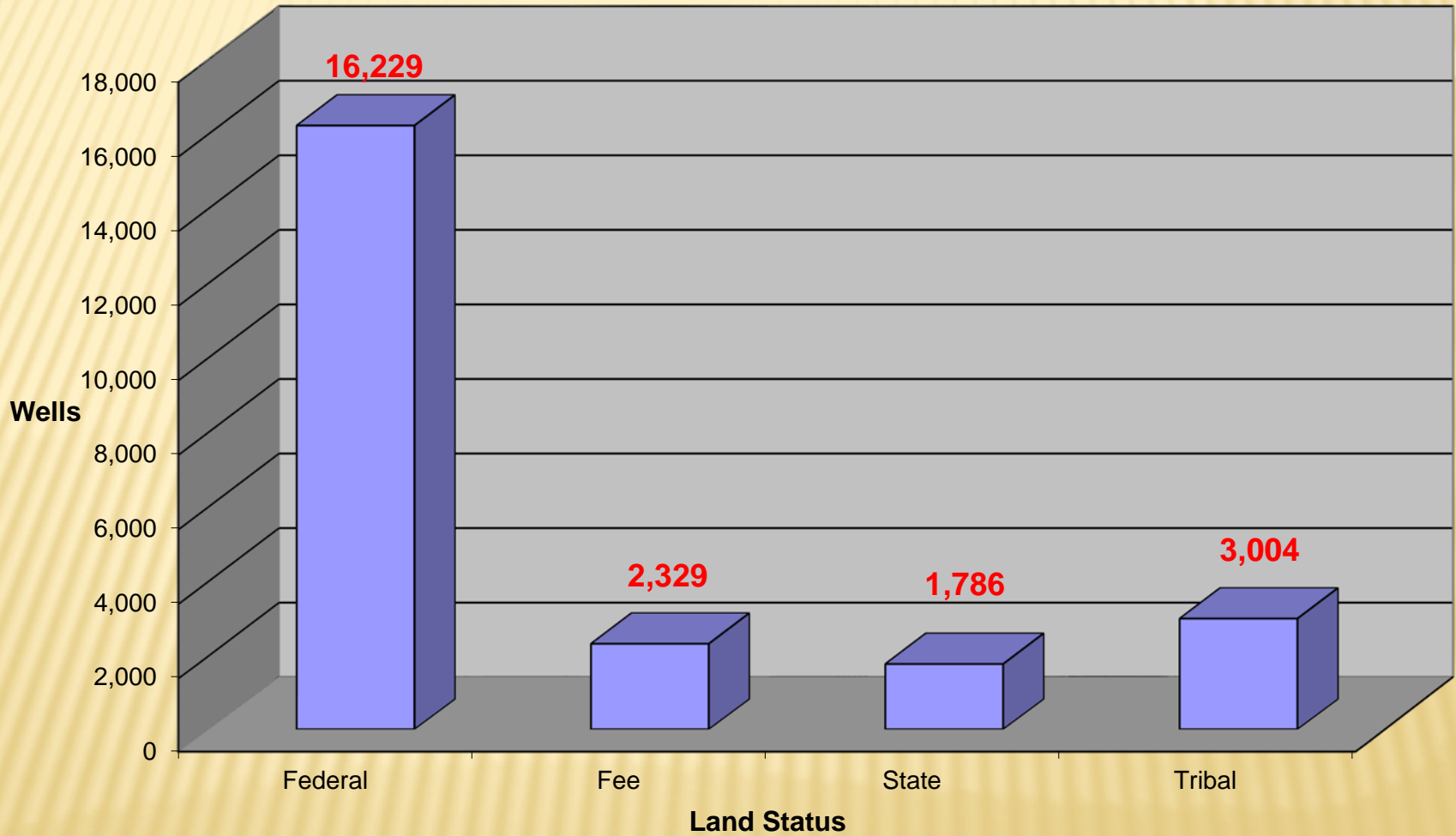
# ACTIVE FEDERAL LEASES: 2,494 LEASES (1,811,945 ACRES)



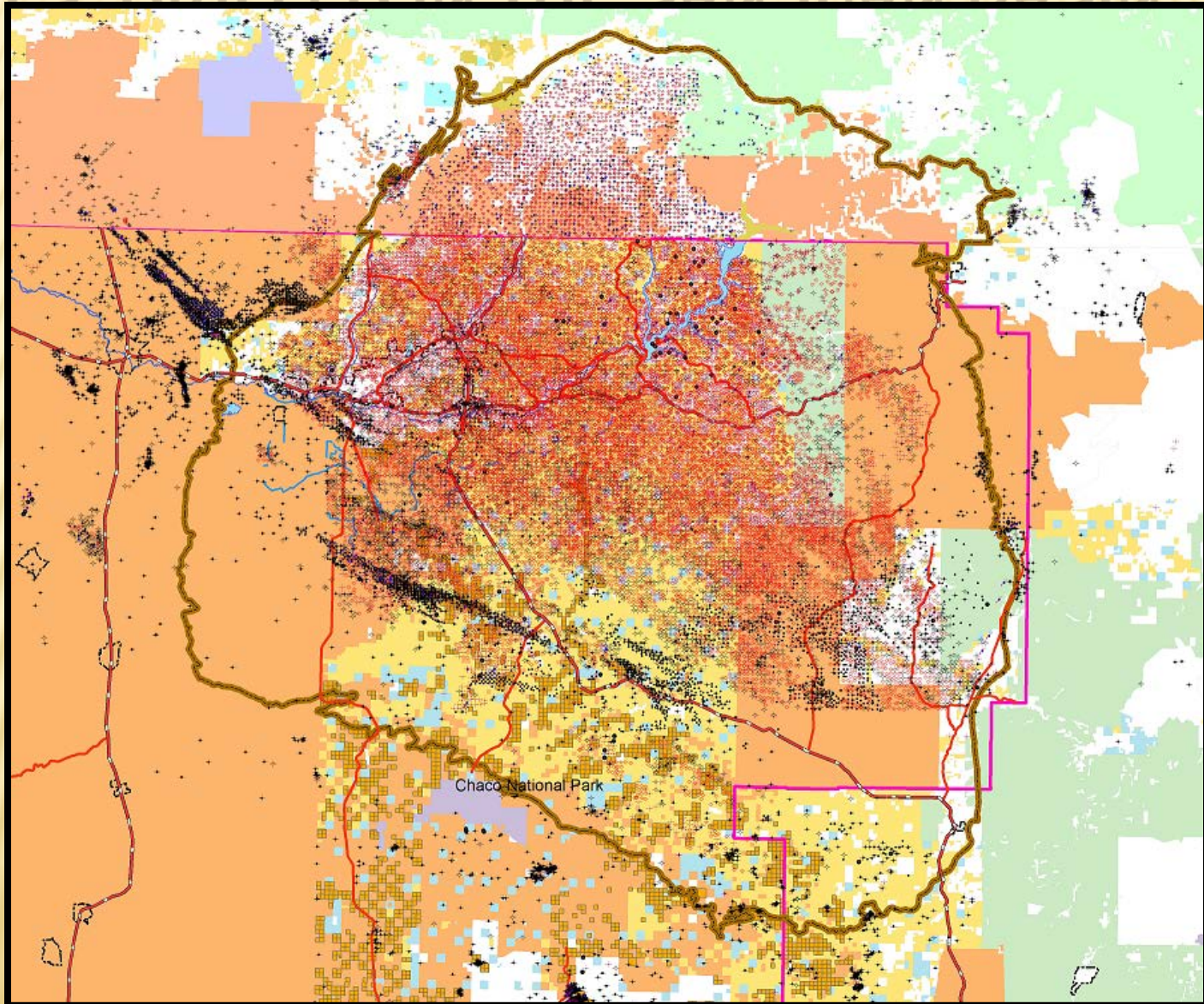
# LEASES HELD-BY-PRODUCTION: 2,295 LEASES (1.647.250 ACRES)



# Active Wells in the San Juan Basin (Total = 23,348)



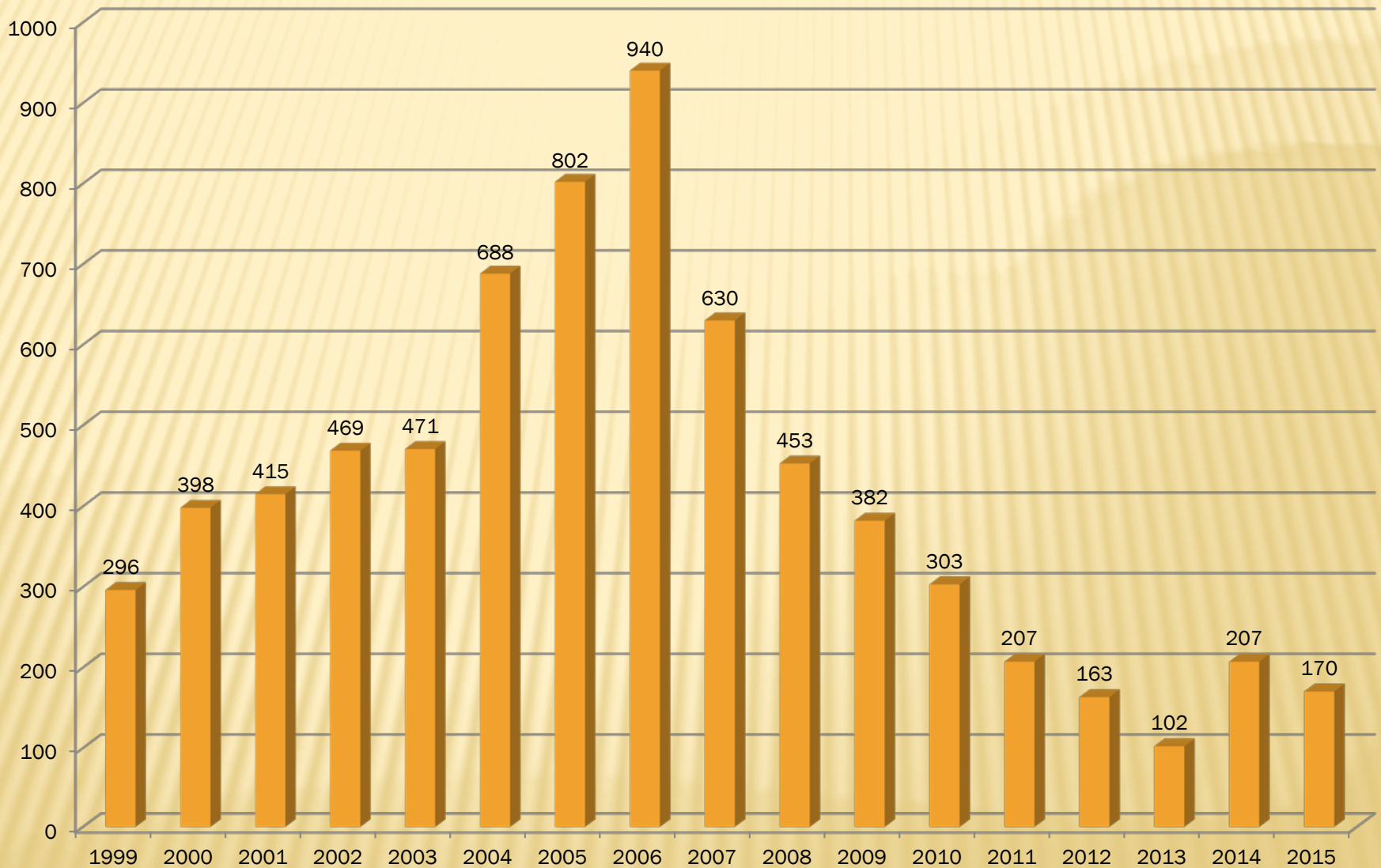
# WELLS DRILLED IN THE SAN JUAN BASIN



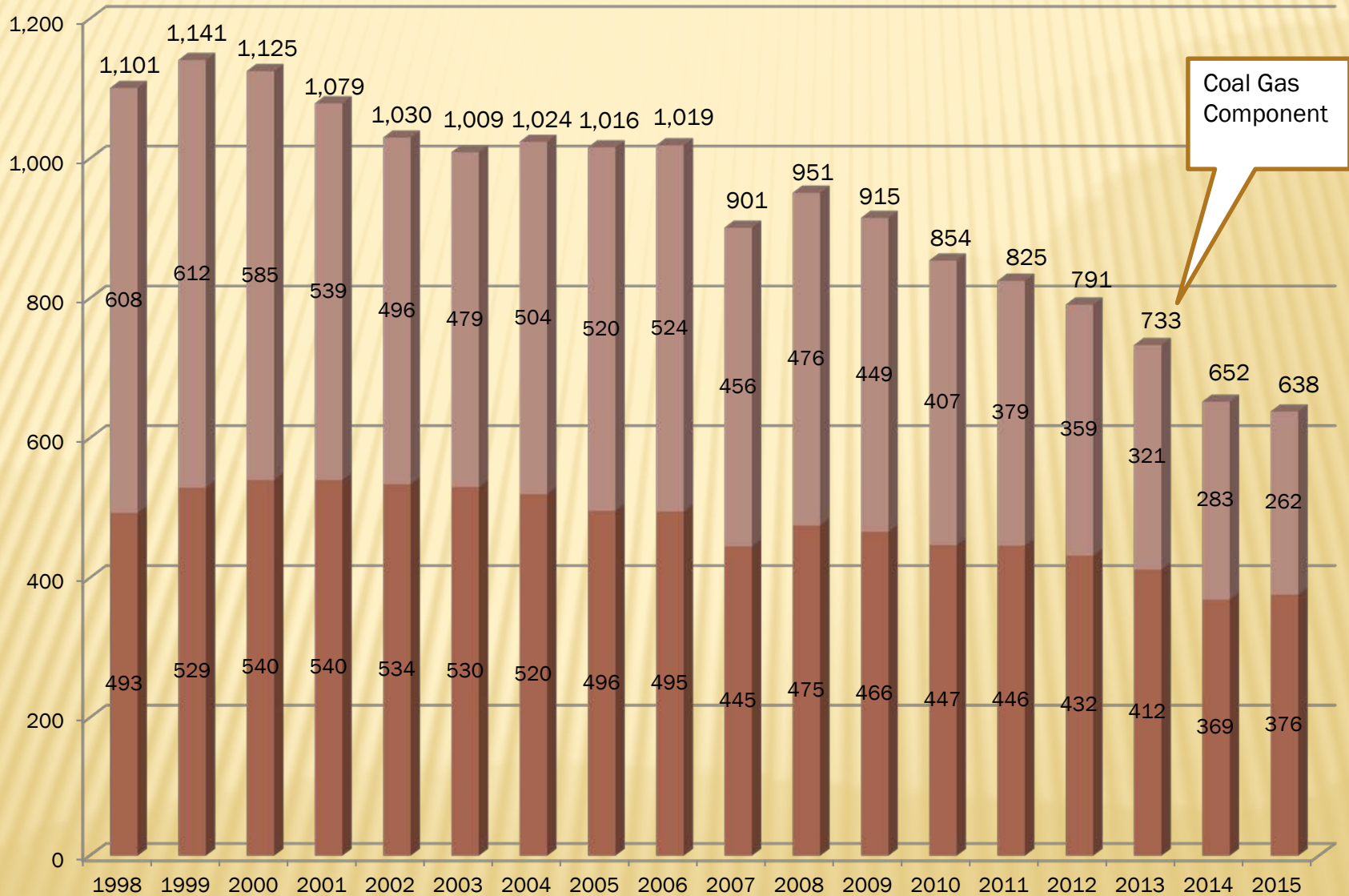
## San Juan Basin: Cumulative Production, New Mexico

<b>Formation</b>	<b>Cum Gas (mcf)</b>	<b>Cum Oil (Bbls)</b>	<b>Cum Water (Bbls)</b>	<b>Well Count</b>
Chacra	171,687,665	60,490	795,230	566
Dakota	6,525,495,701	60,843,235	91,949,037	7,346
Fruitland	10,200,265,781	342,081	311,758,240	6,260
Gallup	919,248,863	172,339,484	273,844,669	3,788
Hospah	33,603	17,832,296	380,467,839	245
Lewis/Mesaverde	164,945,208	390,639	523,936	302
Mesaverde	10,891,689,615	45,091,224	29,664,492	6,144
Pictured Cliffs	4,035,182,115	934,332	21,595,629	5,827
<b>TOTAL</b>	<b>32,908,548,551</b>	<b>297,833,781</b>	<b>1,110,599,072</b>	<b>30,478</b>

# APDs Approved



# SAN JUAN BASIN: TOTAL GAS PRODUCED (BCF)





# INSPECTION AND ENFORCEMENT

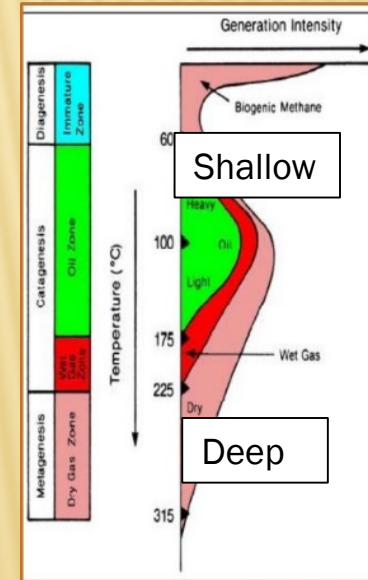
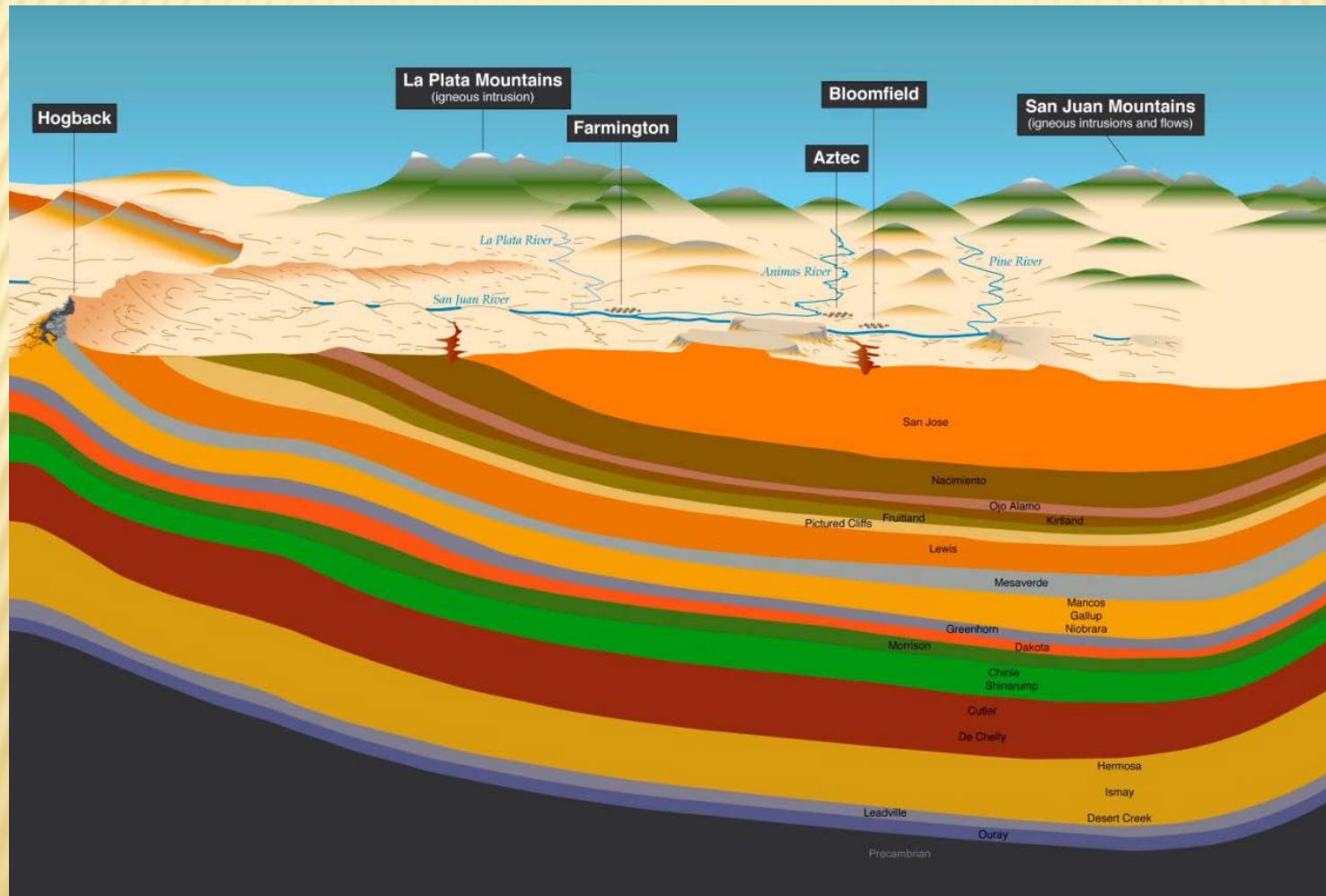
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- Ensure protection of surface and subsurface environments.
- Ensure that production is properly handled, accurately measured and correctly reported.
- Reduce the BLM's liability by ensuring that the health and safety of the public is protected.
- Conserve resources with regard to oil and gas activities on Federal lands.

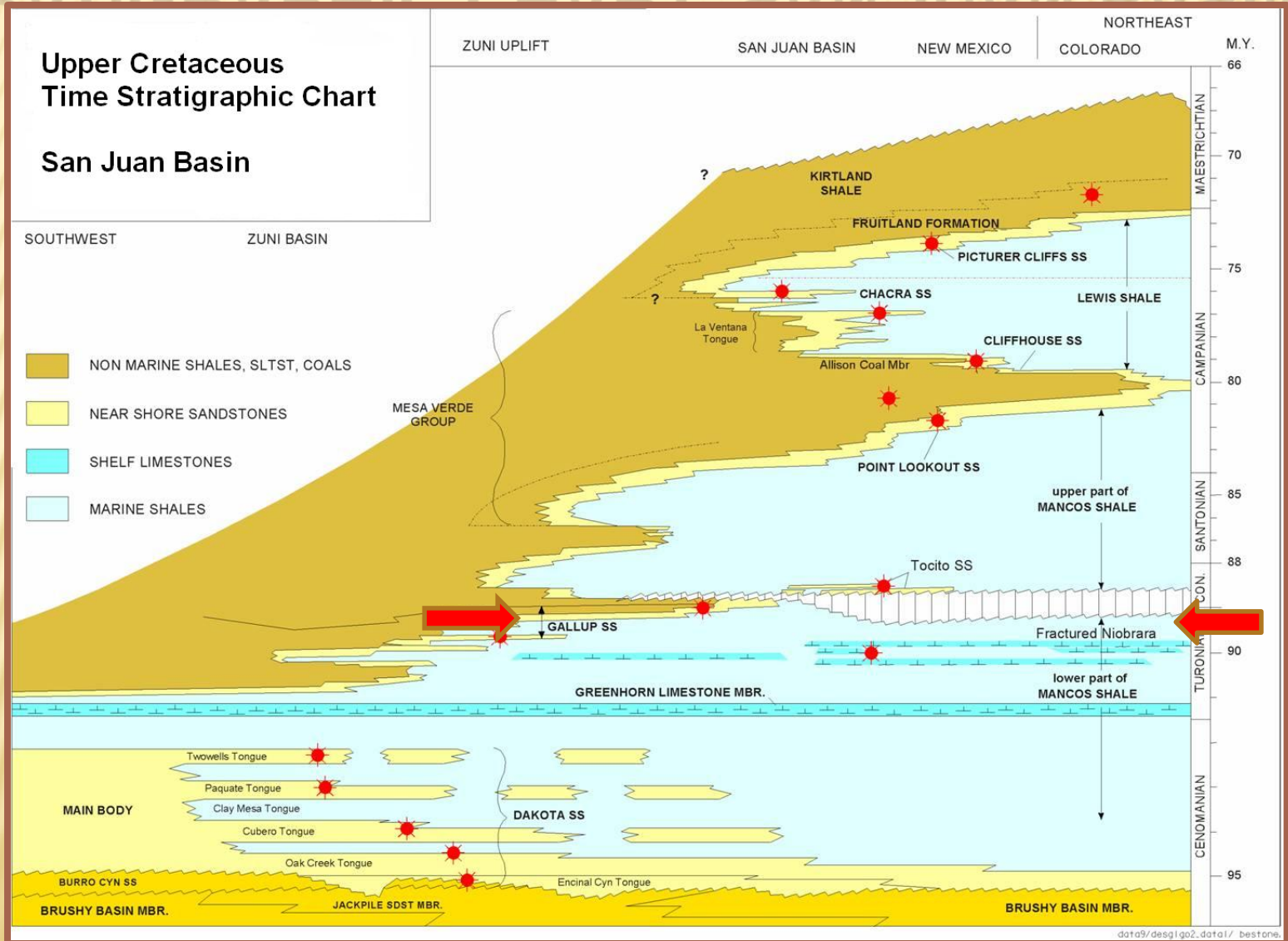
# INSPECTION AND ENFORCEMENT STAFFING

- 2 Supervisors, including Cuba
- 3 Team Leads – includes Productions Accountability Technician
- 15 Field Inspectors (Petroleum Engineering Technicians –(PET's), including Federal Indian Minerals Office (Allottees) and Cuba
- 3 Auditors
- 23 Total Federal Inspectors
- Oversight of 8 Jicarilla Apache and Navajo Nation Tribal Inspectors

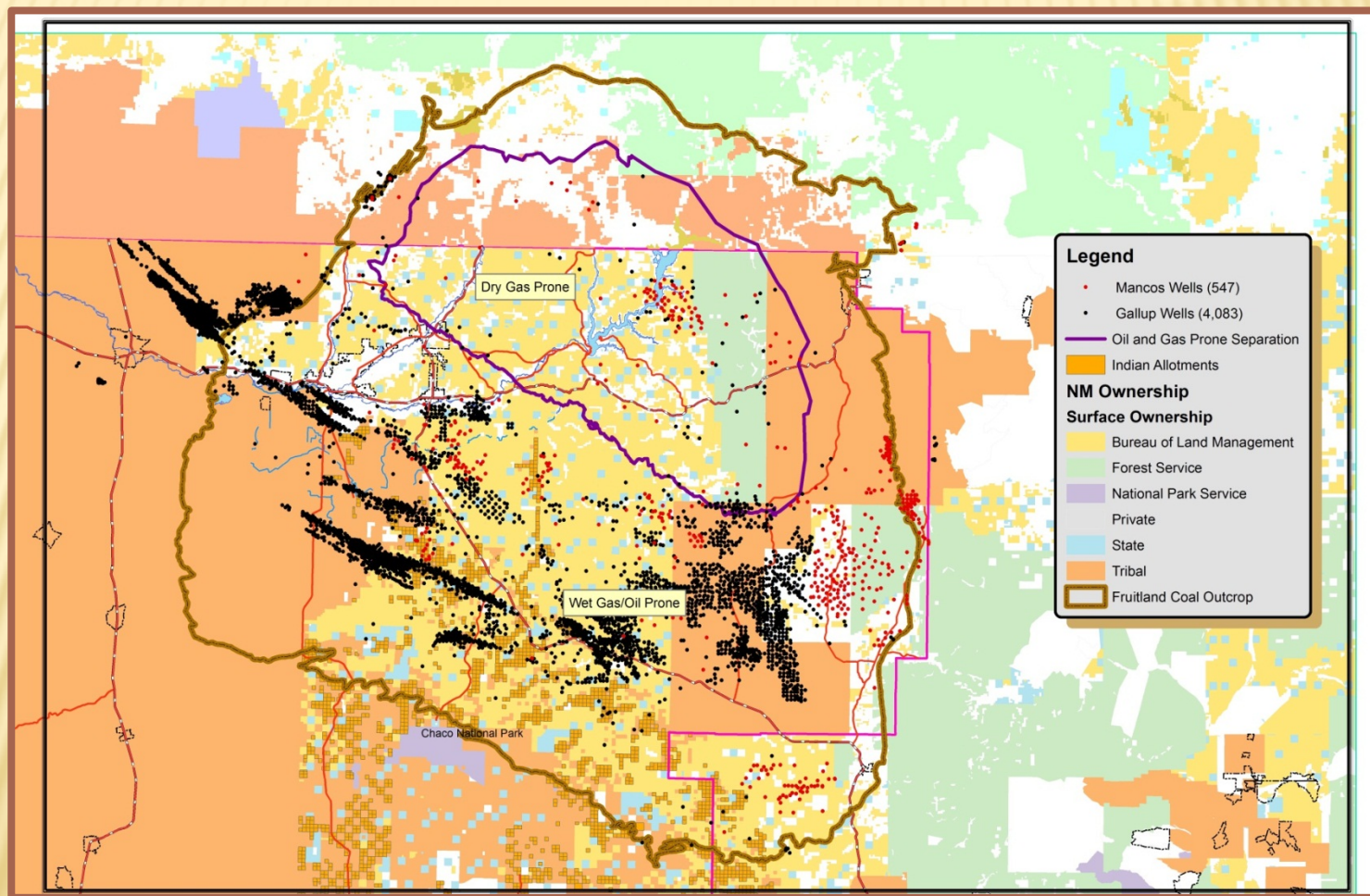
# San Juan Basin Geologic X-Section



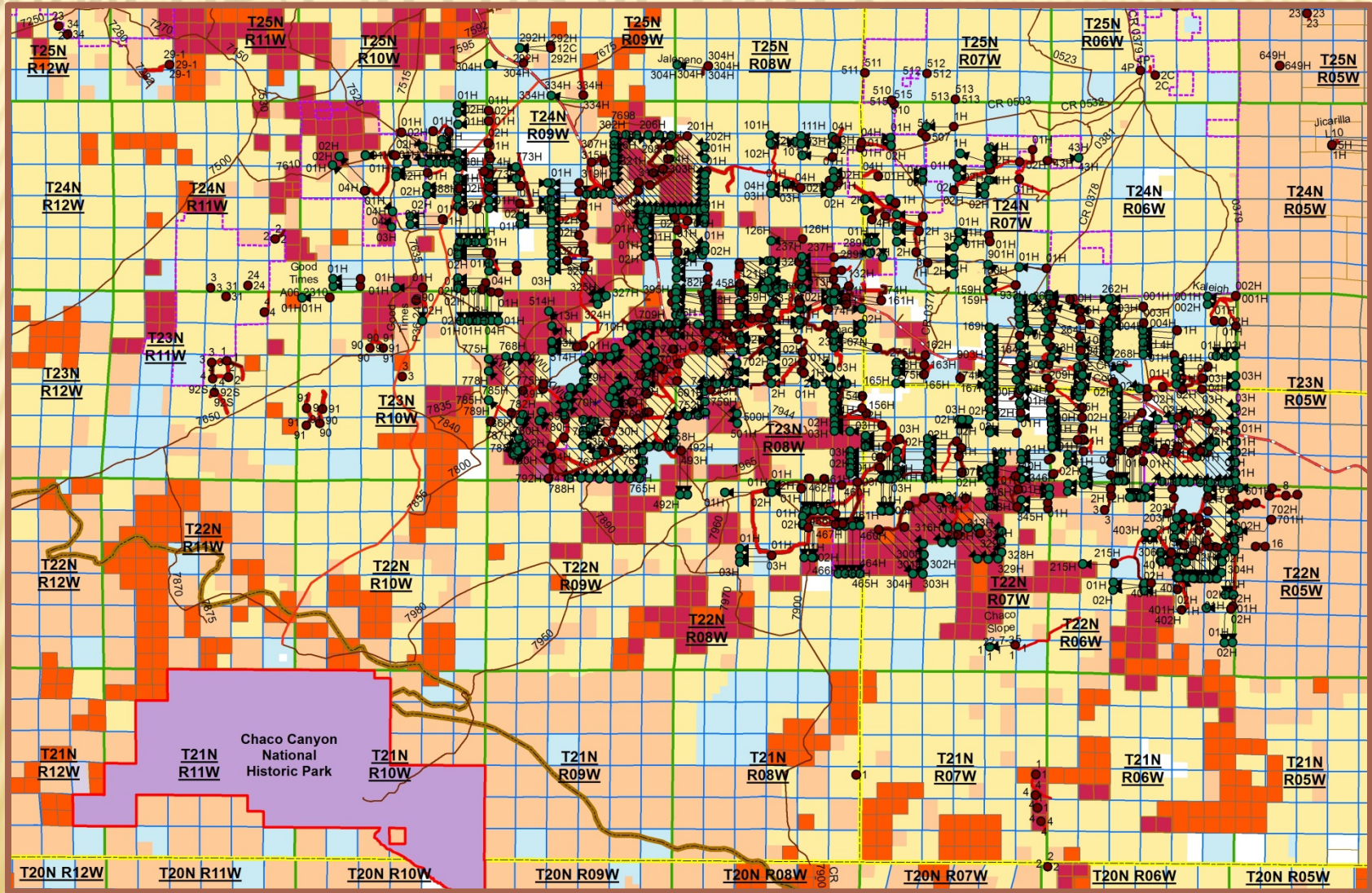
# STRATIGRAPHIC CHART: SAN JUAN BASIN



# MANCOS/GALLUP DEVELOPMENT: SAN JUAN BASIN



# MANCOS/GALLUP ACTIVITY

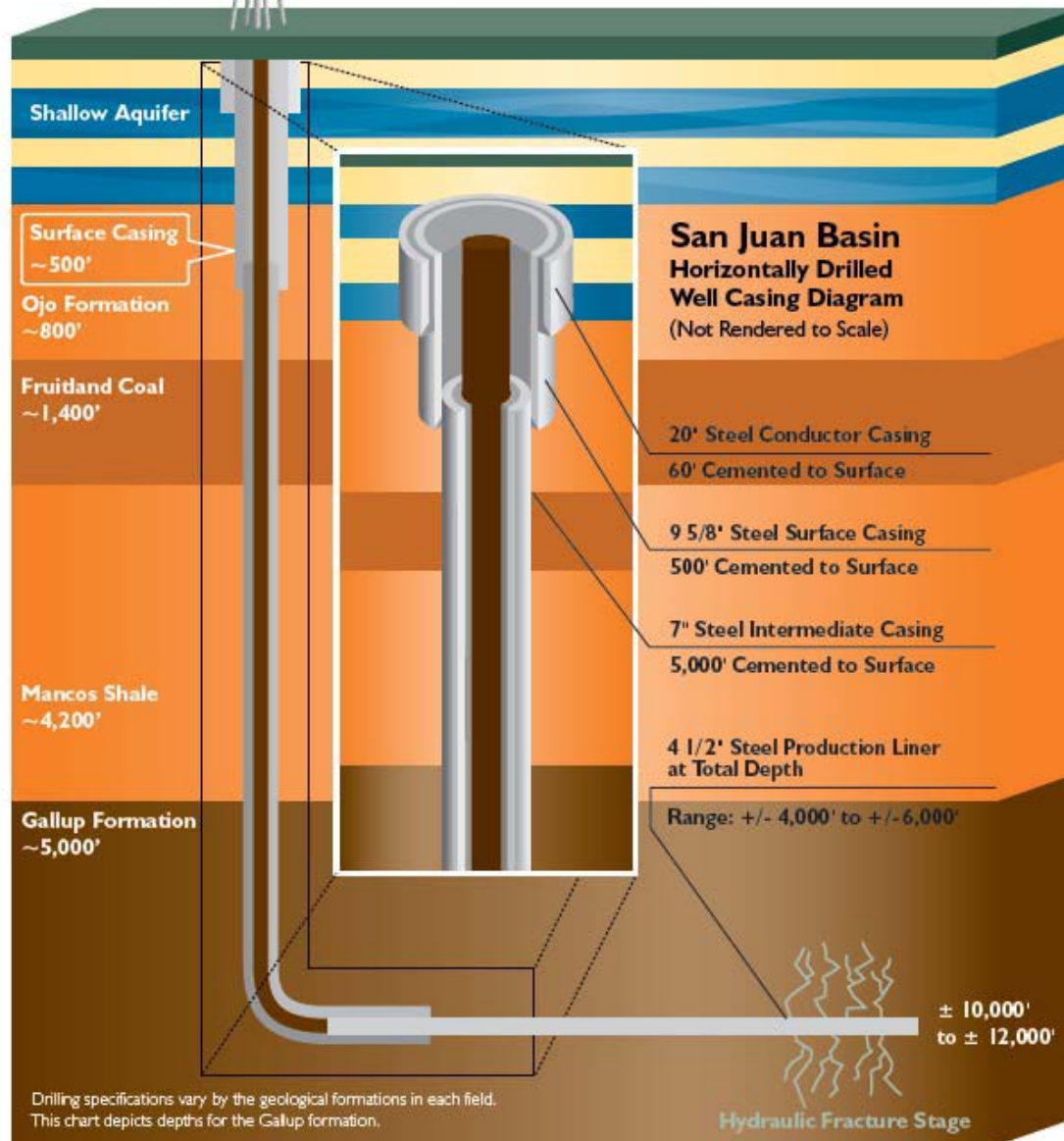


# HYDRAULIC FRACTURING OF THE MANCOS/GALLUP



# Horizontally Drilled Well Casting Diagram

(not rendered to scale)

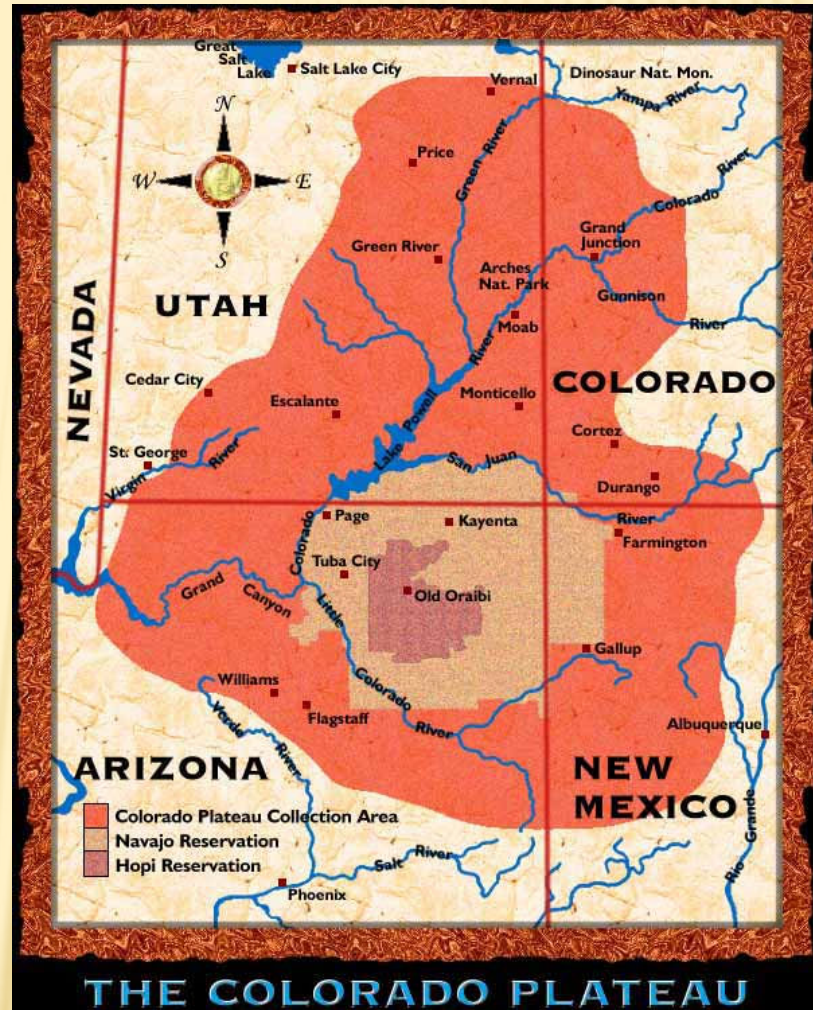


**Horizontal Well Diagram**  
Gallup Formation



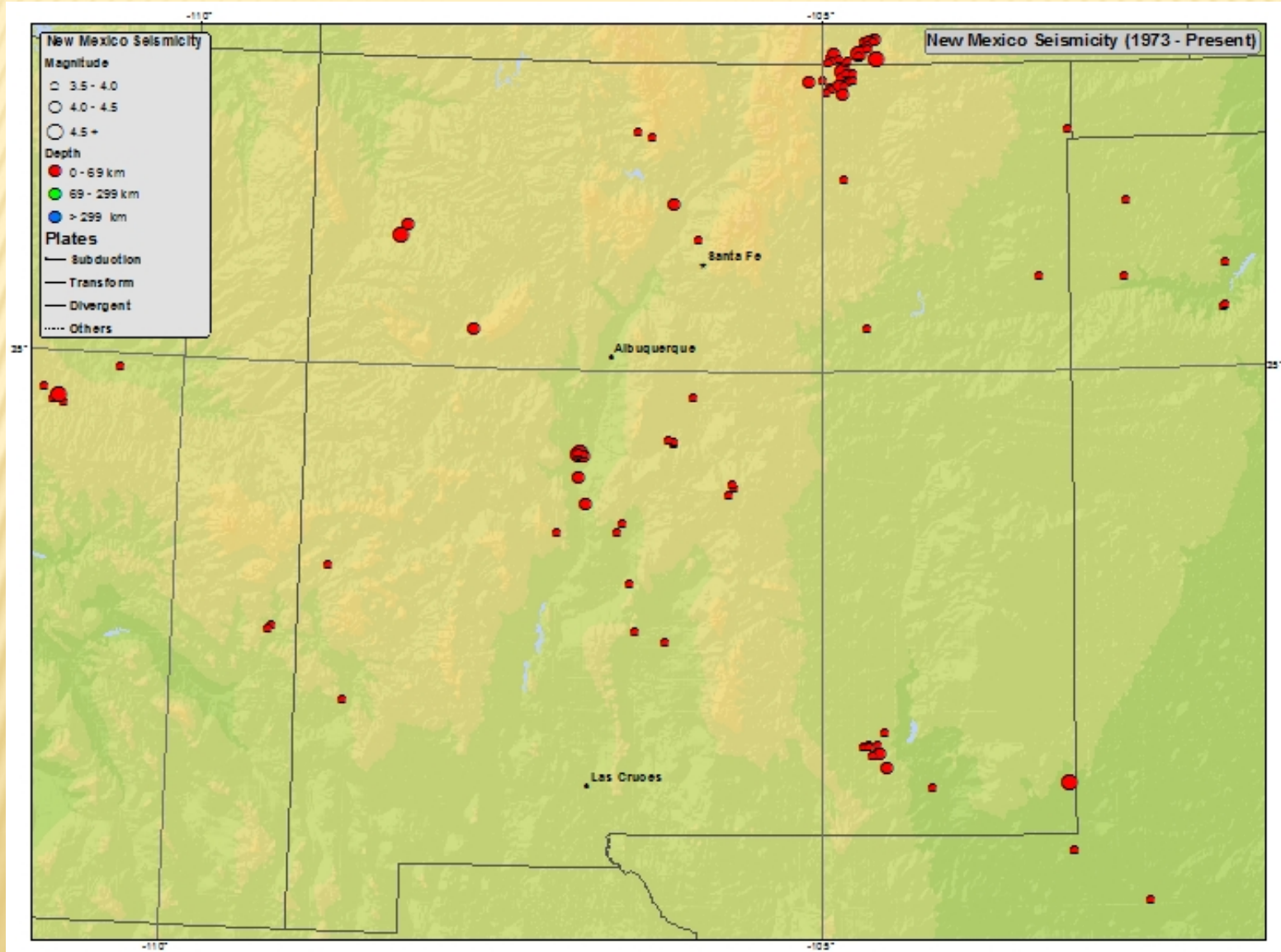
Large stable crustal block

Little geologic deformation  
(faults and folds) for over  
600 million years.



**COLORADO PLATEAU**

# SEISMIC EVENTS IN NEW MEXICO 1973 TO PRESENT



# NITROGEN FOAM HYDRAULIC FRACTURING

- ✘ Foam fracking is a combination of water (30%) and nitrogen (70%) as the frac fluid.
- ✘ Provides high energy to low bottom-hole pressure reservoirs like the Mancos/Gallup.
- ✘ Results in quicker cleanup and has good proppant carrying capability developing higher sand concentrations.
- ✘ Water usage: 3.1 acre-feet = 24,000 barrels = 1,020,000 gallons.

# MANCOS - GALLUP PLAY: SUMMARY

- ✘ Mancos-Gallup Play split between oil and gas
- ✘ Northern part of the SJB is gas prone and over-pressured while the southern part of the basin is oil prone and under-pressured.
- ✘ Gas play is marginally economic at current gas prices. Oil play is becoming marginal at current prices.
- ✘ Horizontal well development results in less emissions and surface disturbance than vertical wells with the same or higher resource recovered.

# **ONSHORE ORDERS 3, 4, 5, AND 9**

# ONSHORE ORDER 3 SITE SECURITY

- ✘ Establishes a new nationwide process for designating official points for royalty measurement (FMPs)
- ✘ New standards for commingling approvals
- ✘ Use of seals on tanks
- ✘ Addresses meter by-passes
- ✘ Addresses incidents of unauthorized removal or mishandling of production
- ✘ Addresses off-lease measurement

# ONSHORE ORDER 4 OIL MEASUREMENT

- ✘ Enhanced requirements for oil sales by tank gauging
- ✘ Vapor tight tanks
- ✘ Lease Automatic Custody Transfer (LACT) components and requirements
- ✘ Allows the use of Coriolis measurement systems which measure the output flow, temperature, density and viscosity

# ONSHORE ORDER 5, GAS MEASUREMENT

- ✘ Enhanced requirements for electronic gas meters
- ✘ Enhanced inspection requirements for gas meters
- ✘ Improved standards for gas sampling and thermal content determinations
- ✘ Improved testing and review standards for the Department's Gas and Oil Measurement Team (and interagency panel of measurement experts)
- ✘ Overall performance goals for gas measurement meters based on the volume of gas measured



# ONSHORE ORDER 9, VENTING & FLARING

- ✘ Replaces NTL 4A (USGS,1980)
- ✘ Reduces flaring
  - + Waste Minimization Plan: Gas capture plan on associated gas
  - + Flaring limits: limits to 20 mmcf; prior it was 50 mmcf
- ✘ Reduces leaks
  - + Leak detection and repair plan: establishes frequency of inspections
- ✘ Reduces Venting
  - + Drilling and Production
  - + Equipment and Operations: pneumatic devices, tanks, compressors, and liquid unloading
- ✘ Royalty Provisions
  - + Royalty Free use: similar to NTL 4A; drilling, completion and operations
  - + Royalties on flared gas: due when capture is possible

**From:** Pool, Jamie  
**To:** [erica.rhoad@mail.house.gov](mailto:erica.rhoad@mail.house.gov); [Kimball, Spencer](#); [Bragato, Brandon](#); [david.watkins@mail.house.gov](mailto:david.watkins@mail.house.gov); [Butler, Aniela](#)  
**Cc:** [Patrick Wilkinson](#); [Jill Ralston](#)  
**Subject:** BLM Written Testimony for HNR Subcommittee on Federal Lands Legislative Hearing (5/12)  
**Date:** Wednesday, May 11, 2016 5:12:19 PM  
**Attachments:** [BLM Testimony - H.R. 3565 - Cal Coastal Expansion \(FINAL\).docx](#)  
[BLM Testimony - H.R. 4233, Cal Coastal Small Rocks and Islands \(FINAL\).docx](#)  
[BLM Testimony - H.R. 5132 Crooked River Ranch Fire Protection Act \(FINAL\).docx](#)  
[BLM statement H.R. 3839 Black Hills \(FINAL\).docx](#)

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All --

Attached is the BLM's written testimony for the May 12 legislative hearing on H.R. 3565, H.R. 3839, H.R. 4233, H.R. 5132 before the House Natural Resources Subcommittee on Federal Lands.

Thanks,  
Jamie

--

Jamie Pool  
U.S. Department of the Interior  
Bureau of Land Management  
Legislative Affairs Division (WO 620)  
(202) 912-7138  
[jpool@blm.gov](mailto:jpool@blm.gov)

**Statement of  
Abbie Jossie  
Acting Assistant Director  
National Landscape Conservation System & Community Partnerships  
Bureau of Land Management, Department of the Interior  
House Natural Resources Committee  
Subcommittee on Federal Lands  
H.R. 3565, California Coastal National Monument Expansion Act  
May 12, 2016**

Thank you for the opportunity to testify on H.R. 3565, the California Coastal National Monument Expansion Act. The bill would add 5 new areas totaling approximately 5,880 acres to the California Coastal National Monument. The Department of the Interior supports H.R. 3565 and would also like to work with the sponsor and the Subcommittee to address certain technical issues in the bill.

**Background**

The California coast is rugged and spectacular, representing one of the nation's most iconic and treasured landscapes. Millions of visitors travel up and down the California coast each year, stopping at coastal towns and vista points to experience breathtaking views and spectacular scenery and to observe an abundance of wildlife along the coast. In 2000, Presidential Proclamation 7264 established the California Coastal National Monument, administered by the Bureau of Land Management and comprising over 20,000 islands, rocks, and pinnacles along the 1,100 mile California coast. In 2014, Presidential Proclamation 9089 added the Point Arena-Stornetta unit, which included 1,665 acres of public land along the coastline. This area provides a mainland base for access and interpretation and plays a critical role in enhancing the public's enjoyment, appreciation, and understanding of the California Coastal National Monument.

Since the expansion of the boundary, many California coastal communities have built grassroots networks, including businesses, environmental groups, members of the public, and other non-governmental organizations that support the protection of additional lands along the coast as a unit of the California Coastal National Monument. Trinidad Head, Lighthouse Ranch, the Cotoni-Coast Dairies Public Lands, Piedras Blancas Outstanding Natural Area, and the Orange County Rocks and Islands are valued by nearby Coastal communities for their scenic, conservation, and recreation values, and each of these areas contains nationally significant historical, cultural, natural, and scientific resources.

Trinidad Head is a 60-acre rocky promontory surrounded by sea stacks in the Trinidad Harbor. The large and dominant coastal head is bordered by sheer cliffs that are often battered by strong winter storms, and the area is culturally and spiritually significant to the Native American communities of the Yurok, Tsurai, and Trinidad Rancheria. Thirteen acres on Trinidad Head, including the historic Trinidad Head Lighthouse, are managed by the BLM and used for recreational activities. The BLM is working with community partners to develop a management plan for the area that will address public access, conservation, and recreation goals.

Lighthouse Ranch is 12 miles south of Eureka and overlooks the Eel River Delta, the Mike Thompson Wildlife Area, the South Spit of Humboldt Bay, and the Pacific Ocean, offering stunning views of the coastline. The eight-acre parcel administered by the BLM is managed for

conservation and recreation, including picnicking, hiking, and wildlife viewing. The BLM also manages the 600-acre Mike Thompson Wildlife Area under a conservation easement with the California Department of Fish and Wildlife.

The Cotoni-Coast Dairies, located near Davenport in Santa Cruz County, represents one of the last areas in the coastal foothills that is available to the public. This area offers spectacular views of the ocean and several of the most iconic monument rocks and islands on the North Coast of Santa Cruz County. The Cotoni-Coast Dairies includes a diverse array of plants and wildlife. The landscape is a mosaic of majestic upland oak groves, mixed evergreen and redwood forests, native coastal prairie and exotic grasslands, upland scrubs, wetland communities, and riparian scrubs and forests. Native wildlife such as resident and migratory songbirds and raptors, mountain lions, badgers, and other species thrive within the region's vast network of conservation areas and open space preserves. The BLM manages 5,840 acres of public land in the area, which is home to rare fish and wildlife species such as the California red-legged frog, Coho salmon, and Central California Coast steelhead. The Cotoni-Coast Dairies area is also culturally and historically significant to many groups of Native American people. Today, these lands are managed for conservation of native coastal wildlife and habitats, grazing, and recreational public uses.

The Piedras Blancas Outstanding Natural Area, located six miles from the historic Hearst Castle in San Luis Obispo County on State Scenic Highway One, includes 20 acres of public lands that are part of the BLM's National Conservation Lands. The Piedras Blancas Light Station, listed on the National Register of Historic Places, began operation in 1875 and is still used today to aid marine navigation. The Light Station is named for the distinctive white rocks that loom just offshore. These rocks, and the rugged shoreline, are home to seabirds, sea lions, and elephant seals. Over 70 native plant species can be found on the habitat surrounding the Light Station. In addition, the Light Station is also an important area for scientific studies of whales, seals, sea otters, seabirds, tide pools, and seismicity. The area provides excellent opportunities for visitors to enjoy wildlife observation, hiking, picnicking, nature study, tide-pool walks, and guided tours of the Light Station.

The Orange County Rocks and Islands consist of more than 40 offshore rocks, pinnacles, exposed reefs, and small islands, totaling less than two acres at the mean high tide level. These features are located within one mile of the Pacific coast of Orange County. In 1931, Congress reserved the Orange County Rocks and Islands for park, scenic, or other public purposes and in 1935, amended the reservation for lighthouse construction and navigation. Because of these legislative withdrawals, the rocks were not incorporated into the California Coastal National Monument. Nonetheless, the rocks contain unique geologic formations and provide some of the last remaining undisturbed offshore habitat in southern California for a wide variety of migratory and resident birds and marine mammals and a rich diversity of upper intertidal species. Because the U.S. Coast Guard no longer requires the use of these rocks and small islands for navigation purposes, local stakeholders propose to have the withdrawal removed and the rocks and islands incorporated into the California Coastal National Monument.

### **H.R. 3565, California Coastal National Monument Expansion Act**

H.R. 3565 would expand the boundary of the California Coastal National Monument by an additional 5,880 acres of public lands located along the California coast, including Trinidad Head, Lighthouse Ranch, the Cotoni-Coast Dairies, and Piedras Blancas Outstanding Natural

Area. The bill would also incorporate the Orange County Rocks and Islands into the Monument and remove the unused lighthouse reservation. The bill would authorize each of these areas to be managed in accordance with the two Presidential Proclamations that established and expanded the Monument.

Each National Monument and National Conservation Area designated by Congress and managed by the BLM is unique. However, all of these designations have certain critical elements in common, including withdrawal from the public land, mining, and mineral leasing laws; limiting off-highway vehicles to roads and trails designated for their use; and language that charges the Secretary of the Interior with allowing only those uses that further the purposes for which the area is established. The designations in H.R. 3565 are consistent with these principles, and we support their designation. The addition of new areas to the California Coastal National Monument will help strengthen and expand partnerships with California coastal communities and provide opportunities for stewardship of coastal resources, interpretation, environmental education, and other volunteer activities. In addition, visitors will experience and learn about the Monument and its natural and cultural resources. The proposed expansion of the Monument is consistent with the BLM's resource management goals and the purposes of the Proclamations.

Under the bill, the Secretary, through the BLM, will be required to develop or amend the Resource Management Plan (RMP) for areas to be added to the Monument. Specifically, the bill requires that the BLM develop an RMP "for the long-term protection and management of the Federal land added to the Monument" as well as to address visitation and recreation by the public, along with other permitted and public uses. The bill further provides for continuation or development of cooperative agreements with state and local governments, tribes, environmental groups, and stewardship organizations. The BLM values and appreciates working closely with partners and looks forward to continuing to work with local government agencies and organizations on the management of these important areas.

The bill will provide protection of Native American sacred sites, as well as manage access for traditional customary uses. The Monument additions will also provide for the establishment of an advisory council or the use of existing advisory bodies for each unit to provide input for development of RMP amendments. The BLM recognizes the importance of fostering positive working relationships with adjacent private landowners and other stakeholders, and we welcome the opportunity to work together with all stakeholders to effectively manage the additions to the California Coastal National Monument.

The BLM would like to work with the sponsor to address a few technical issues related to grazing in the Monument, the management plan, ensuring that the existing cooperative agreement for the Piedras Blancas Outstanding Natural Area is maintained, and regarding the coordination with advisory councils.

### **Conclusion**

The Department of the Interior appreciates Representative Capps' work with local communities to develop H.R. 3565. We support the bill and look forward to working with the sponsor and the Subcommittee to address certain technical issues and to accomplish our shared goals for conserving, protecting, and restoring the unique resources of the California coastline. I would be happy to answer any questions.

**Statement of  
Abbie Jossie  
Acting Assistant Director  
National Landscape Conservation System & Community Partnerships  
Bureau of Land Management, Department of the Interior  
House Natural Resources Committee  
Subcommittee on Federal Lands  
H.R. 4233, Incorporating Rocks and Small Islands into the California Coastal National  
Monument  
May 12, 2016**

Thank you for the opportunity to testify on H.R. 4233, which would incorporate rocks and small islands along the coast of Orange County, California into the California Coastal National Monument and remove an unused lighthouse reservation. The Department of the Interior supports the conservation goals of H.R. 4233 and would like to work with the sponsor and the Committee to address some concerns with the bill's management language discussed in more detail below.

**Background**

The California coast is rugged and spectacular, representing one of the nation's most iconic and treasured landscapes. Millions of visitors travel up and down the California coast each year, stopping at coastal towns and vista points to experience breathtaking views and spectacular scenery and to observe an abundance of wildlife along the coast. In 2000, Presidential Proclamation 7264 established the California Coastal National Monument, administered by the Bureau of Land Management and comprising over 20,000 islands, rocks, and pinnacles along the 1,100 mile California coast. In 2014, Presidential Proclamation 9089 added the Point Arena-Stornetta unit, which included 1,665 acres of public land along the coastline. This area provides a mainland base for access and interpretation and plays a critical role in enhancing the public's enjoyment, appreciation, and understanding of the California Coastal National Monument.

The Orange County Rocks and Islands consist of more than 40 offshore rocks, pinnacles, exposed reefs, and small islands, totaling less than two acres at the mean high tide level. These features are located within one mile of the Pacific coast of Orange County. These offshore rocks and small islands are valued by nearby Coastal communities for their scenic, conservation and recreation values and contain nationally significant historical, cultural, natural, and scientific resources.

In 1931, Congress reserved the Orange County Rocks and Islands for park, scenic, or other public purposes and in 1935, amended the reservation for lighthouse construction and navigation. Because of these legislative withdrawals, the rocks were not incorporated into the California Coastal National Monument. Nonetheless, the rocks contain unique geologic formations and provide some of the last remaining undisturbed offshore habitat in southern California for a wide variety of migratory and resident birds and marine mammals and a rich diversity of upper intertidal species. Because the U.S. Coast Guard no longer requires the use of these rocks and small islands for navigation purposes, local stakeholders propose to have the withdrawal removed and the rocks and islands incorporated into the California Coastal National Monument.

### **H.R. 4233**

H.R. 4233 would incorporate the Orange County Rocks and Islands into the California Coastal National Monument and remove the unused lighthouse reservation. The bill would also require that the Secretary of the Interior allow for the continuation of any existing authorized economic and recreational uses on the rocks and islands.

The BLM supports the incorporation of the Orange County Rocks and Islands into the California Coastal National Monument and the removal of the lighthouse reservation. At this time, we are not aware of any currently authorized uses that would be impacted by inclusion of this area into the Monument. We believe that the new language regarding the continuation of existing economic and recreational uses sets a bad precedent and could limit the agency's ability to conserve, protect, and restore the resources and values for which the Monument was designated. We are concerned that this language could unintentionally prevent future management changes that may be needed. The BLM recognizes the importance of economic and recreational opportunities on public lands and will continue to foster good working relationships with interested stakeholders as an essential management component of the Monument.

Each National Monument and National Conservation Area designated by Congress and managed by the BLM is unique. However, all of these designations have certain critical elements in common, including withdrawal from the public land, mining, and mineral leasing laws; limiting off-highway vehicles to roads and trails designated for their use; and language that charges the Secretary of the Interior with allowing only those uses that further the purposes for which the area is established. Based on consistent public support and careful consideration of the area's resource values, the BLM believes that the significance of the scenic, conservation, and recreation values of the Orange County Rocks and Islands merits their inclusion in the National Conservation Lands. As we have previously testified, the BLM believes that these rocks and islands could be managed under the key principles of the National Conservation Lands in a way that protects the area's significant resources and allows for economic and recreational use.

We would like the opportunity to work with the sponsor and the Subcommittee on language ensuring that, if H.R. 4233 is approved, the BLM would be able to manage the Orange County Rocks and Islands in a manner consistent with the rest of the Monument, as designated.

### **Conclusion**

The Department of the Interior appreciates Representative Rohrabacher's work with local communities to develop this legislation. We support the conservation goals of the bill and look forward to working with the sponsor, the Subcommittee, and stakeholders to address the specific concerns noted in our testimony and to accomplish our shared stewardship goals for conserving, protecting, and restoring the unique resources of the California coastline. I would be happy to answer your questions.

**Statement of  
Abbie Jossie  
Acting Assistant Director  
National Landscape Conservation System & Community Partnerships  
Bureau of Land Management, Department of the Interior  
House Natural Resources Committee  
Subcommittee on Federal Lands  
H.R. 5132, Crooked River Ranch Fire Protection Act  
May 12, 2016**

Thank you for the opportunity to testify on H.R. 5132, the Crooked River Ranch Fire Protection Act. The bill modifies the eastern boundary of the Deschutes Canyon-Steelhead Falls Wilderness Study Area (WSA) in Jefferson County, Oregon, and releases approximately 832 acres from WSA management. The Department of the Interior recognizes the significant work of various stakeholders to attempt to reach a consensus on the future management of public lands in this area, particularly with respect to balancing the protection of unique resources within the WSA with actions to address wildland fire risk for nearby communities. While we share the sponsor's interest in hazardous fuels reduction and preventing wildfires that may impact the communities surrounding this WSA, we have technical concerns with the legislation as described below.

The Department notes that this bill was introduced fewer than two weeks ago, and we have not had sufficient time to undertake the thorough review that is appropriate for a hearing on this matter. Based on an initial analysis of the bill and its accompanying legislative map, the exact lands proposed for release from WSA management are unclear, as well as the extent to which the proposal meets the objectives of interested stakeholders. We would welcome the opportunity, in cooperation with the sponsor, to create a legislative map for the purposes of this bill that reflects land status data and delineates the proposed boundary more clearly. We would like to work with the sponsor and the Subcommittee to address a few technical and minor concerns with the bill, and we look forward to continuing to work with local stakeholders to resolve land management issues within and surrounding the WSA.

**Background**

The Deschutes Canyon-Steelhead Falls WSA was part of the original intensive wilderness inventory conducted in 1978 by the Bureau of Land Management (BLM) in Oregon. This WSA is a long narrow area located along the upper Deschutes River, within and adjacent to the Forest Service-administered Crooked River National Grasslands, and consists of approximately 10,230 acres of forest lands managed by the Forest Service and approximately 3,240 acres of public land managed by the BLM. The area is surrounded by the Crooked River Ranch (a private subdivision) to the east, Lake Billy Chinook to the north, low-density rural populations to the south, and farmlands to the west. The portions of the Deschutes River within this WSA have been protected under the Wild and Scenic Rivers Act since 1988.

Within the WSA, the beauty and wildness of the Deschutes River canyon increases with the change in elevation as one proceeds north toward Lake Billy Chinook. Once within the Deschutes or Squaw Creek canyons, one's attention shifts from the roar and rapid movement of



the water, to the vibrant green and red hues of riparian vegetation along the river bank and also to the scenic canyon walls towering above this river environment. These multicolored walls leave the visitor with a lasting impression that these formations were bisected by the Deschutes River over several thousand years.

### **H.R. 5132, the Crooked River Ranch Fire Protection Act**

H.R. 5132 requires the Secretary of the Interior to reduce the size of the Deschutes Canyon-Steelhead Falls WSA by approximately 832 acres to “facilitate fire prevention and response activities to protect adjacent private property, and for other purposes.” By releasing these 832 acres from WSA status, this area would be managed by the BLM for the full range of non-wilderness multiple uses under the Federal Land Policy and Management Act (FLPMA).

The BLM notes that under FLPMA, the Wilderness Act, and agency policy, mechanical vegetation treatments, including pre-fire treatments, are allowed in WSAs as long as they meet the non-impairment standard or its emergency or restoration exceptions. The BLM shares the sponsor’s goal of reducing fire threats that may impact the life and safety of people and private property near the WSA. The BLM also recognizes the significant work of a broad section of stakeholders to reach a consensus on the future management of public lands in this area, particularly with respect to balancing the protection of unique resources within the WSA with actions to address wildland fire risk.

Based on an initial review of the bill and the legislative map, the proposed boundary is not clearly delineated and we are unsure exactly which lands the sponsor intends to release from WSA management. It is also unclear whether the boundary modification would affect parts of this area currently managed by the Forest Service. We would welcome the opportunity to create a legislative map for the purposes of this bill that reflects land status data and more clearly identifies which lands would be released from WSA management. Finally, we would like the opportunity to work with the sponsor and the Subcommittee to address a number of minor and technical concerns with the bill, including the mechanics of the WSA release and possible further boundary adjustments to enhance manageability and ensure the continued protection of Steelhead Falls.

### **Conclusion**

The Department of the Interior looks forward to working with the sponsor, the Subcommittee, and stakeholders on public land management issues raised in this legislation and to address the specific concerns noted in our testimony. I would be happy to answer your questions.

**Statement of  
Abbie Jossie  
Acting Assistant Director  
National Landscape Conservation System & Community Partnerships  
Bureau of Land Management  
Department of the Interior  
House Natural Resources Committee  
Subcommittee on Federal Lands  
H.R. 3839, Black Hills National Cemetery Boundary Expansion Act  
May 12, 2016**

Thank you for inviting the Department of the Interior to testify on H.R. 3839, the Black Hills National Cemetery Boundary Expansion Act, which transfers administrative jurisdiction of approximately 200 acres of public land currently managed by the Department's Bureau of Land Management (BLM) to the Department of Veterans Affairs' (VA) National Cemetery Administration (NCA) for inclusion in the Black Hills National Cemetery in Meade County, South Dakota. The Department of the Interior supports H.R. 3839.

**Background**

The Black Hills National Cemetery is located three miles southeast of Sturgis, South Dakota, near the Black Hills. Established in 1948, the cemetery currently encompasses 106 acres and has had over 20,000 interments. The BLM understands that the NCA would use the additional land provided under H.R. 3839 to expand the Black Hills National Cemetery to provide burial space for future needs. The BLM and the NCA have discussed such a transfer for several years, but the BLM has determined that no general authority exists for the agency to grant a perpetual transfer of jurisdiction as required by the NCA for a cemetery.

**H.R. 3839**

H.R. 3839 directs the Secretary of the Interior to transfer administrative jurisdiction of approximately 200 acres of public land to the Secretary of Veterans Affairs to be incorporated into the existing Black Hills National Cemetery, subject to valid existing rights. The Secretary of Veterans Affairs would be required to pay all survey costs and other reasonable costs associated with the transfer. The Federal land to be transferred would be withdrawn from all forms of appropriation under the public land laws, including the mining, mineral leasing, and geothermal leasing laws. Under the bill, should the NCA ever determine that it no longer needs any portion of the additional land, the Secretary of the Interior could restore the unneeded land to the public domain. The Secretary of Veterans Affairs would be responsible for costs of any decontamination necessary for restoration to public land status.

The Department of the Interior supports H.R. 3839 and the transfer of administrative jurisdiction. We note that the expansion area is currently part of the Fort Meade Recreation Area / Area of Critical Environmental Concern (ACEC) and that the Centennial Trail runs along the northern boundary of the expansion area. We suggest adding bill language to provide a 100-foot setback boundary from the centerline of the trail. The Administration would also like to work with the sponsor and the Subcommittee to clarify the provisions related to decontamination and restoration of the land to public land status.

**Conclusion**

Thank you again for the opportunity to testify in support of H.R. 3839, the Black Hills National Cemetery Boundary Expansion Act. We appreciate the work of the South Dakota congressional delegation on this legislation, and we look forward to collaborating with them and the Subcommittee to meet the needs of the Black Hills National Cemetery.

**From:** Bragato, Brandon  
**To:** ["Pool, Jamie"](#)  
**Subject:** RE: BLM Written Testimony for HNR Subcommittee on Federal Lands Legislative Hearing (5/12)  
**Date:** Wednesday, May 11, 2016 5:32:30 PM  
**Attachments:** [Testimony\\_Hoffmann.pdf](#)

---

Here is the fire chief testimony.

**From:** Pool, Jamie [mailto:[jpool@blm.gov](mailto:jpool@blm.gov)]  
**Sent:** Wednesday, May 11, 2016 5:12 PM  
**To:** Rhoad, Erica; Kimball, Spencer; Bragato, Brandon; Watkins, David; Butler, Aniela  
**Cc:** Patrick Wilkinson; Jill Ralston  
**Subject:** BLM Written Testimony for HNR Subcommittee on Federal Lands Legislative Hearing (5/12)

All --

Attached is the BLM's written testimony for the May 12 legislative hearing on H.R. 3565, H.R. 3839, H.R. 4233, H.R. 5132 before the House Natural Resources Subcommittee on Federal Lands.

Thanks,  
Jamie

--

Jamie Pool  
U.S. Department of the Interior  
Bureau of Land Management  
Legislative Affairs Division (WO 620)  
(202) 912-7138  
[jpool@blm.gov](mailto:jpool@blm.gov)

Fire Chief Richard Hoffmann

Crooked River Ranch RFPD, Oregon

Committee on Natural Resources

HR5132

May 12, 2016

Thank you Chairman McClintock and ranking member Tsongas and thank you for allowing me to share today. Crooked River Ranch is a rural fire protection district that serve a population of 5500 residents and hundreds of visitors every year. CRR is considered one of the largest unincorporated sub-divisions in Oregon. Our coverage area spans 12 square miles and is located on a peninsula wedged between the Crooked River and the Deschutes river canyons. While there are over 100 miles of road, there is only one entrance in and out of the ranch.

Along the western border of CRR lies the Deschutes Whychus Creek WSA which butts up to approximately 250 privately owned parcels of land averaging from 1 to 5 acres. The wilderness boundary literally starts where private property ends, there is no transition. The area between the private property line and the canyon wall is flat to gradient and spans 1/8<sup>th</sup> of a mile across in places. This same area was visited by a BLM fuels specialist in March of 2015. At that time, he determined that over 50% of the area above the canyon wall and within the WSA boundary contained Juniper trees in phase 2 and 3 condition. This describes the tree density as it has begun to suppress native understory vegetation. This condition can be problematic for fire suppression because higher density of Juniper can result in longer flame lengths, torching of trees and spot fires. Consensus of the fuels manager was that fuels treatment above the rim should be a priority. BLM estimates that over 50% of the existing Junipers should be removed. It was also noted that ground crews would not be utilized within this space due to the extreme hazard and potential for unpredictable fire behavior. Additionally, Jefferson County has classified this as a top priority through the Community Wildfire Protection Plan.

Our trails that start on the ranch and wind miles into the canyon have gained notoriety and are used heavily by hikers and anglers. It is not uncommon to find illegal camp fire rings located in the canyon and in the primitive BLM camp ground. Often CRR fire crews patrol and destroy make shift fire rings during summer months when open burning is not allowed. While BLM land is not our responsibility, fire in these regions are our top priority. You see a fire that starts within the canyon has only one way to travel, and that's up. Up means traveling through chutes and chimneys which are natural pathways leading to the flatlands above. These chutes and canyons are commonly littered with dry vegetation and Juniper trees. At the top of these draws stand more dry vegetation, trees, private homes and the citizens of Crooked River Ranch.

As a Fire Chief it is my responsibility to protect the lives and property of those I serve. This is commonly done through community risk reduction, in other words do everything in your power to reduce the risk or hazard before it happens.

Over the past few years Crooked River Ranch Fire & Rescue along with the Crooked River Ranch home owner's association have worked with private land owners to reduce the risk of wild fire through fuels treatment. The HOA itself has treated over 1/3 of the property identified as hazards. Funding for future projects remains a priority with the HOA. Wildfire evacuation signs have been installed throughout the ranch and an evacuation plan has been adopted utilizing the Ready Set Go platform managed by the International Fire Chiefs Association.

This important piece of legislation will move the boundary away from private properties and allow us to work with the Bureau of Land Management to begin the process of fuels mitigation to further improve defensible space for our community of over 2,600 properties. The lack of fuel mitigation has created a dangerous environment for tactical firefighting and remains one of our highest threats to Crooked River Ranch. Until proper mitigation is performed, it is unlikely we would place firefighters in such a volatile atmosphere.

Is all we are asking for is to move this boundary away from the private land -back to the top edge of the canyon rim.

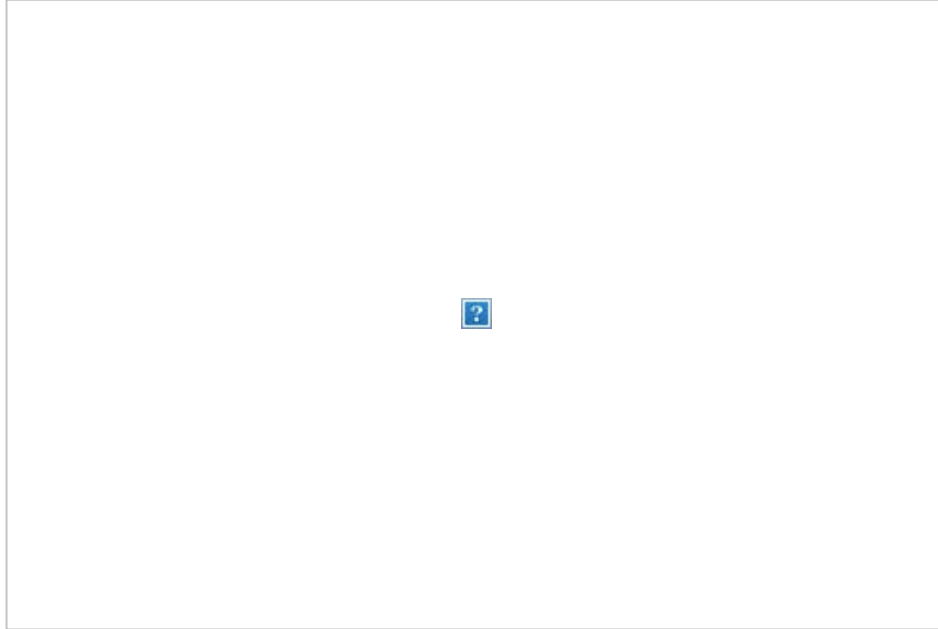
This does not destroy the intent of the wilderness act and the Deschutes river corridor remains protected.

Help us avoid what is happening to our friends Canada this past week.

Thank you

**From:** Senator Martin Heinrich  
**To:** [ndante@blm.gov](mailto:ndante@blm.gov)  
**Subject:** Closer than Ever to Establishing New Wilderness Areas in New Mexico  
**Date:** Wednesday, May 11, 2016 5:57:58 PM  
**Attachments:** [91bb9fe5e794d9b65a4eb30c5b1aabe5.png](#)

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*(Ute Mountain, Photo Credit: Jim O'Donnell)*

May 11, 2016

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For many years now, a broad coalition of northern New Mexicans has worked to conserve these areas within the Río Grande del Norte National Monument northwest of Taos, New Mexico. I have no doubt that future generations will be grateful for their years of work and support. These roadless areas provide important security habitat for elk, mule deer, black bears, golden eagles, and American pronghorn. Designating these two new wilderness areas will complete a national example of community-driven, landscape-scale conservation that will preserve the culture, natural resources, and economy of this stunning part of New Mexico.

This package also includes permanent reauthorization of the Land and Water Conservation Fund. LWCF is one of America's most successful conservation programs. It has preserved our outdoor heritage, protected clean air and precious supplies of drinking water, and supported jobs across the country. Permanent reauthorization of LWCF is a major victory for conservation, and I will continue to fight to fully fund LWCF, so we can make strong investments in our public lands.

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And together, we will ensure that all of our children and grandchildren can continue to come back to these special outdoor places year after year, generation after generation.

Sincerely,



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United States Senator

P.S. Below is an editorial by *The Taos News* supporting my bill to establish two new wilderness areas within the Río Grande del Norte National Monument. I hope you'll take a moment to read it.



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May 6, 2016

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Thank you, Sens. Tom Udall and Martin Heinrich, for looking out for Northern New Mexico.

The Energy Policy Modernization Act still needs to be reconciled with a House version before it can go to the president's desk. But the amendment aims to preserve 21,420 acres as the Cerro del Yuta (Ute Mountain) and Rio San Antonio wilderness areas.

As Heinrich, who stopped by *The Taos News* this week, noted, Ute Mountain and the Rio Grande Gorge are two iconic sights within the monument.

Like Heinrich, we see the draw for tourists wanting to experience a high desert wilderness -- and for locals who enjoy the great outdoors.

The areas are also a source of water and a refuge for wildlife.

The plan for the wilderness areas has had a great deal of buy-in from locals, just as they supported the creation of the Rio Grande del Norte National Monument in 2013. Many recognize the impact the monument would have on our quality of life via recreation and traditional land uses.

We only wish New Mexico Land Commissioner Aubrey Dunn felt the same way.

In a story published last week in our sister paper, *The New Mexican*, Dunn opposed the amendment's passage because he says it would mean a loss of nearly 1,300 acres of state trust lands.



He noted money generated through mineral leases and timber sales on state trust lands go toward funding public schools, hospitals and beneficiaries. Dunn released this statement: "With low oil prices already impacting revenues from State Trust Lands, the designation of these new wilderness areas will only add insult to injury and further reduce revenues in support of New Mexico's school children."

But that argument is a ruse. These wildernesses won't lock people out of state land, nor will they affect any income generated by his office.

Instead of spouting rhetoric and bellyaching, Dunn should be working with the federal government to swap out islands of state land that are now inside the national monument. If Dunn were truly concerned about revenue, he'd find a way to consolidate these parcels, making them more valuable for grazing leases and other uses.

Wilderness is not always the answer. There are parts of Taos County where wilderness protections are not appropriate. And we caution wilderness advocates from pushing too hard in places where wilderness lacks support.

But in these two areas of northern Taos County, wilderness makes sense. We hope they make it into the final bill so these landscapes can be preserved in perpetuity.

Now that would be priceless.

---

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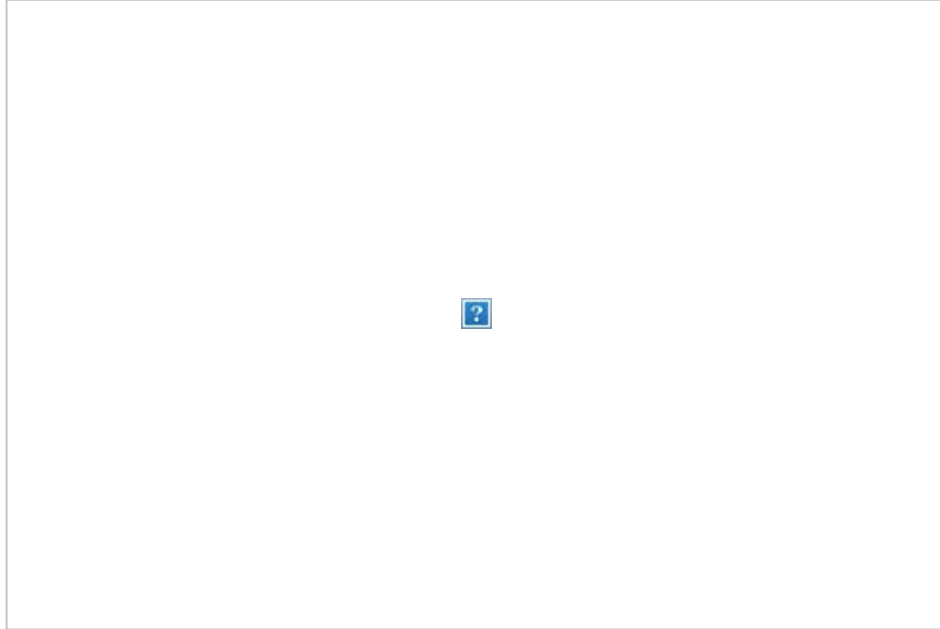
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10/10/10

**From:** Senator Martin Heinrich  
**To:** [aseidlitz@blm.gov](mailto:aseidlitz@blm.gov)  
**Subject:** Closer than Ever to Establishing New Wilderness Areas in New Mexico  
**Date:** Wednesday, May 11, 2016 5:59:31 PM  
**Attachments:** [91bb9fe5e794d9b65a4eb30c5b1aabe5.png](#)

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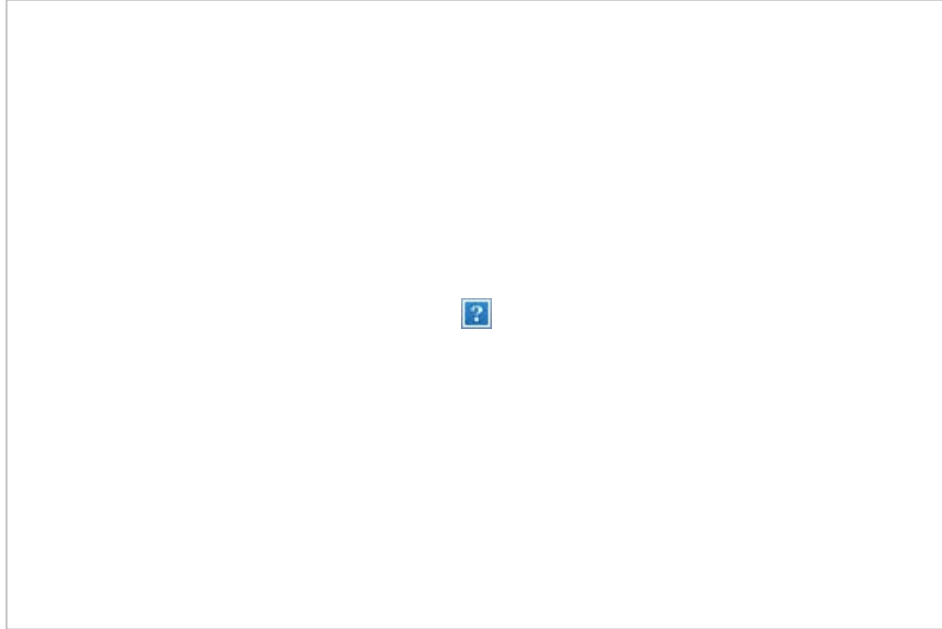
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**To:** [nkornze@blm.gov](mailto:nkornze@blm.gov)  
**Subject:** Closer than Ever to Establishing New Wilderness Areas in New Mexico  
**Date:** Wednesday, May 11, 2016 6:04:06 PM  
**Attachments:** [91bb9fe5e794d9b65a4eb30c5b1aabe5.png](#)

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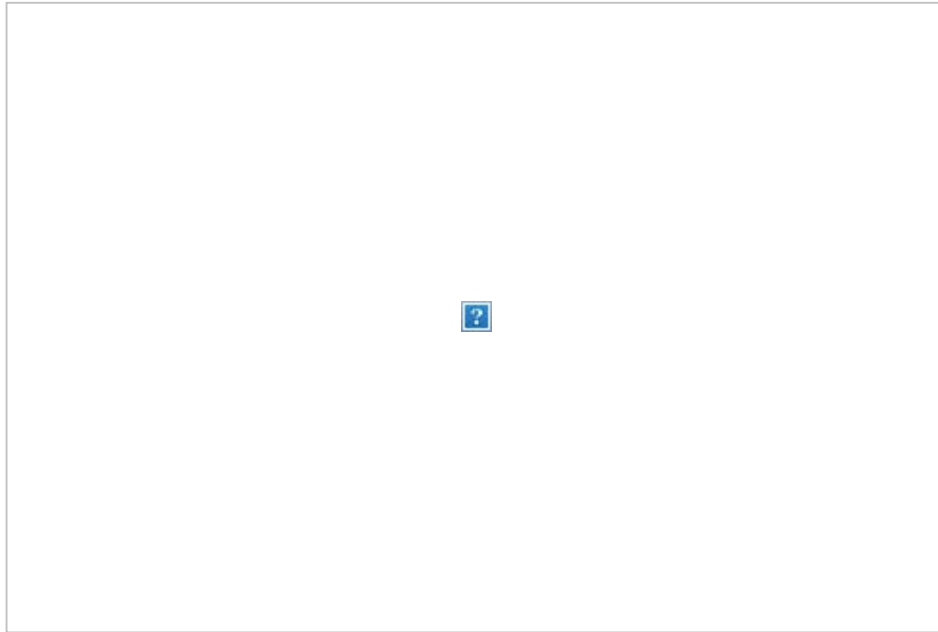
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**From:** Senator Martin Heinrich  
**To:** [lisa\\_morrison@blm.gov](mailto:lisa_morrison@blm.gov)  
**Subject:** Closer than Ever to Establishing New Wilderness Areas in New Mexico  
**Date:** Wednesday, May 11, 2016 6:06:59 PM  
**Attachments:** [91bb9fe5e794d9b65a4eb30c5b1aabe5.png](#)

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---

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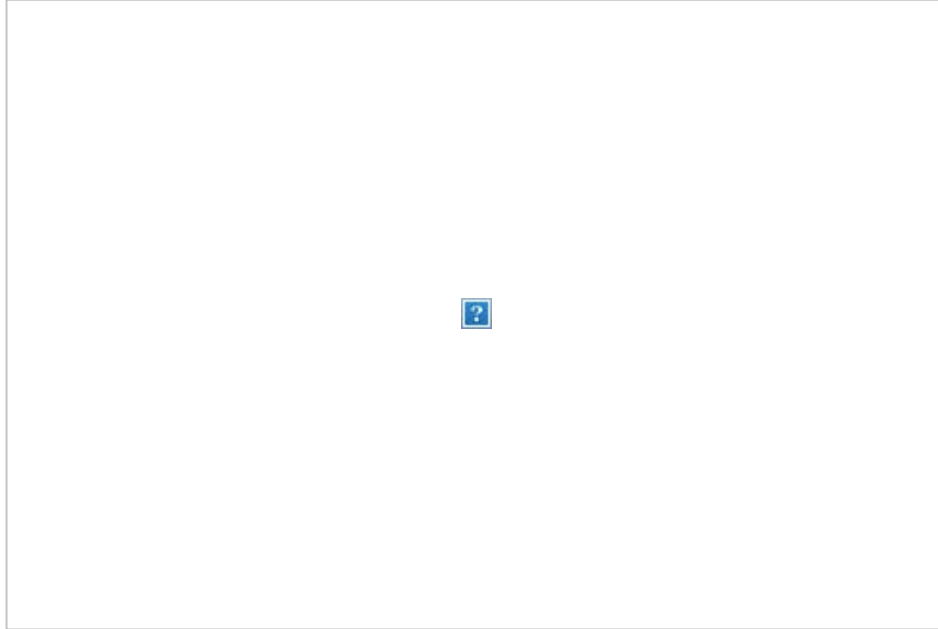
To continue to receive updates, [click here](#).



10/10/10

**From:** Senator Martin Heinrich  
**To:** [vawillia@blm.gov](mailto:vawillia@blm.gov)  
**Subject:** Closer than Ever to Establishing New Wilderness Areas in New Mexico  
**Date:** Wednesday, May 11, 2016 6:07:00 PM  
**Attachments:** [91bb9fe5e794d9b65a4eb30c5b1aabe5.png](#)

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*(Ute Mountain, Photo Credit: Jim O'Donnell)*

May 11, 2016

Dear Friend,

I am proud that the Senate recently passed its first comprehensive bipartisan energy and public lands package in years. Not only does the package include common-sense provisions to grow New Mexico's technology and energy sectors, but it also includes a bill Senator Tom Udall and I introduced to establish two new wilderness areas in our state, the Cerro del Yuta Wilderness and Rio San Antonio Wilderness.

For many years now, a broad coalition of northern New Mexicans has worked to conserve these areas within the Río Grande del Norte National Monument northwest of Taos, New Mexico. I have no doubt that future generations will be grateful for their years of work and support. These roadless areas provide important security habitat for elk, mule deer, black bears, golden eagles, and American pronghorn. Designating these two new wilderness areas will complete a national example of community-driven, landscape-scale conservation that will preserve the culture, natural resources, and economy of this stunning part of New Mexico.

This package also includes permanent reauthorization of the Land and Water Conservation Fund. LWCF is one of America's most successful conservation programs. It has preserved our outdoor heritage, protected clean air and precious supplies of drinking water, and supported jobs across the country. Permanent reauthorization of LWCF is a major victory for conservation, and I will continue to fight to fully fund LWCF, so we can make strong investments in our public lands.

These are the places that make New Mexico so enchanting and make our nation so special.

And together, we will ensure that all of our children and grandchildren can continue to come back to these special outdoor places year after year, generation after generation.

Sincerely,



MARTIN HEINRICH  
United States Senator

P.S. Below is an editorial by *The Taos News* supporting my bill to establish two new wilderness areas within the Río Grande del Norte National Monument. I hope you'll take a moment to read it.



## **Editorial: Thanks to feds working to preserve wilderness areas**

May 6, 2016

An amendment added recently to a federal energy bill would create two wilderness areas within the Rio Grande del Norte National Monument.

Thank you, Sens. Tom Udall and Martin Heinrich, for looking out for Northern New Mexico.

The Energy Policy Modernization Act still needs to be reconciled with a House version before it can go to the president's desk. But the amendment aims to preserve 21,420 acres as the Cerro del Yuta (Ute Mountain) and Rio San Antonio wilderness areas.

As Heinrich, who stopped by *The Taos News* this week, noted, Ute Mountain and the Rio Grande Gorge are two iconic sights within the monument.

Like Heinrich, we see the draw for tourists wanting to experience a high desert wilderness -- and for locals who enjoy the great outdoors.

The areas are also a source of water and a refuge for wildlife.

The plan for the wilderness areas has had a great deal of buy-in from locals, just as they supported the creation of the Rio Grande del Norte National Monument in 2013. Many recognize the impact the monument would have on our quality of life via recreation and traditional land uses.

We only wish New Mexico Land Commissioner Aubrey Dunn felt the same way.

In a story published last week in our sister paper, *The New Mexican*, Dunn opposed the amendment's passage because he says it would mean a loss of nearly 1,300 acres of state trust lands.



He noted money generated through mineral leases and timber sales on state trust lands go toward funding public schools, hospitals and beneficiaries. Dunn released this statement: "With low oil prices already impacting revenues from State Trust Lands, the designation of these new wilderness areas will only add insult to injury and further reduce revenues in support of New Mexico's school children."

But that argument is a ruse. These wildernesses won't lock people out of state land, nor will they affect any income generated by his office.

Instead of spouting rhetoric and bellyaching, Dunn should be working with the federal government to swap out islands of state land that are now inside the national monument. If Dunn were truly concerned about revenue, he'd find a way to consolidate these parcels, making them more valuable for grazing leases and other uses.

Wilderness is not always the answer. There are parts of Taos County where wilderness protections are not appropriate. And we caution wilderness advocates from pushing too hard in places where wilderness lacks support.

But in these two areas of northern Taos County, wilderness makes sense. We hope they make it into the final bill so these landscapes can be preserved in perpetuity.

Now that would be priceless.

---

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To continue to receive updates, [click here](#).



10/10/10

**From:** Lincoln, Jack  
**To:** ["p2wilkin@blm.gov"; Jill Moran](mailto:p2wilkin@blm.gov)  
**Cc:** [MacGregor, Kate](#)  
**Subject:** QFR"s  
**Date:** Wednesday, May 11, 2016 6:16:49 PM  
**Attachments:** [04.27.16 Lamborn QFRs - Final.doc](#)

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Good afternoon,

Attached are additional questions for the record for Ms. Amanda Leiter from the oversight hearing titled: *"Bureau of Land Management's Regulatory Overreach into Methane Emissions Regulation."*

Please submit responses in **Microsoft Word** format by Wednesday, May 25, 2016. Please let us know if you have any questions.

Thank you,

**Jack Lincoln**

Clerk

Committee on Natural Resources

Subcommittee on Energy and Mineral Resources

1324 Longworth House Office Building

Washington, D.C. 20515

(202)225-9297

**Committee on Natural Resources**  
**Subcommittee on Energy and Mineral Resources**  
**1324 Longworth House Office Building**  
**Wednesday, April 27, 2016**  
**10:00 A.M.**

**Oversight hearing on:**

*“Bureau of Land Management’s Regulatory Overreach into Methane Emissions Regulation”*

**Questions from Rep. Lamborn** for Amanda Leiter, Deputy Assistant Secretary, Land and Minerals Management, Department of the Interior

1. What is the average time it takes for the BLM to approve or deny an application for permit to drill today in key areas of production, such as the Bakken, including all “stops” and “slowdowns”? Has the BLM conducted any analysis into how much the newly proposed requirements will increase permit processing time, or decrease it? The BLM estimates a decrease in permit processing time; what particular aspects of the rule does the BLM consider to be “streamlining” the bureaucratic process, thereby allowing staff to work through the large existing backlogs and approve new permits more quickly? In FY 2015, what was the average timeframe for each BLM field office to process a Right-of-Way (ROW) application from submission to approval or rejection? Please include all “stops” and “slowdowns” when calculating total permitting time.
2. Director Kornze recently acknowledged permitting delays for issuing ROWs when testifying before this Committee. How many staff are currently dedicated to permitting ROWs and how many additional staff has the BLM hired to focus on permitting ROWs? Please provide these hiring figures on a fiscal year and regional basis starting FY2010.
3. BLM only has jurisdiction to regulate the “waste of gas” under the Mineral Leasing Act. Yet, in the cost benefit analysis, the BLM claims monetary benefits for global emissions reductions known as the “social cost of methane.”. Given that the BLM does not have authority to regulate air quality, how does BLM justify claiming such monetary benefits when it does not have statute authority to regulate air quality?

4. Does BLM have a policy that would allow more streamlined permitting of gathering line systems which would allow the capture and transportation to a consumer's gas which would otherwise be vented or flared?
  - a. Has BLM considered implementing such a policy to aid with the capture and transport of produced gas?
  - b. Did BLM evaluate in any way the impacts or benefits that improving or streamlining permitting for natural gas gathering lines would have on reducing emissions? If so, please provide any statistical analysis to the Committee. If not, why did the BLM exclude this gas capture method from the proposed rule?
  - c. Is BLM prevented from implementing such a policy through existing statute authority?
  - d. Is BLM aware of other options to capture and transport natural gas to market that are not currently in use?
5. BLM is moving forward with a venting and flaring rule that includes air quality regulations that clearly exceed its jurisdiction, since EPA and states have Clean Air Act authority. Do you agree that EPA has exclusive federal jurisdiction over air quality and emissions regulations under the Clean Air Act (CAA)?
6. Several provisions in the proposal rule are the same or similar to what EPA recently proposed in its New Source Performance Standards (NSPS 0000a). EPA has not yet responded to public comments on NPS 0000a and finalized their rule. How does BLM justify proposing and relying on another agency's proposed regulations that are still subject to review and potential revision?
7. Production from oil and natural gas wells decline over time along with overall emissions. How does the BLM justify imposing higher standards on existing sources with lower production and lower emissions than EPA imposes on new wells with higher production and emissions?
8. Many of the BLM's claimed economic benefits are highly uncertain and for certain provisions the costs exceed the benefits, even by BLM's analysis. BLM puts the cost of the proposed rule at \$117 million to \$174 million, yet third-party analysis puts the cost as high as \$1.26 billion. Has BLM conducted any analysis of potential lost

economic output and federal and state tax revenue losses caused by the proposed rule? If so, please provide such data to the Committee.

9. BLM claims a benefit of between \$125 million and \$188 million from the rule, yet uses a natural gas price that has not been achieved in several years. Using today's natural gas prices and realistic scenarios results in an environmental benefit of only \$90 million. BLM also shows no acknowledgement that oil and natural gas industry is experiencing a severe decline. How can a rule that delivers \$1.26 billion in cost and only \$90 million in benefits not result in less production on federal and tribal lands and hence, less revenue to the treasury? How does BLM plan to make up for that loss of revenue?
10. The proposed rule establishes a limit on the average rate of gas which may be flared of 1,800 mcf per producing well on a lease per month. What data did the BLM use to decide upon this rate?
  - a. One of the justifications that the BLM has set forth for proposing this rule is to ensure that taxpayers receive their proper royalty return for production on federal lands. Does the BLM have an economic analysis which examines current flaring rates, the cost of establishing such a rates in the regulations, and the impacts that these have on lowering overall oil and natural gas production, thereby reducing royalties being paid for oil and gas production on federal lands?
    - i. Could the proposed rule, through lowered production, actually result in fewer royalties being paid for oil and gas production on federal lands?
      1. Does BLM have a responsibility to manage BLM lands to ensure the best return for the taxpayer?
      2. Does this rule ensure the best return for the taxpayer? Please submit to the Committee any economic analysis conducted by the BLM that assesses potential impacts on royalty collections as a result of proposed venting and flaring regulations.

**Questions from Rep. Gosar** for Amanda Leiter, Deputy Assistant Secretary, Land and Minerals Management, Department of the Interior

1. What scientific information does BLM have (that EPA did not have 6 months ago) to justify the different requirements for new wells and existing well unloading practices?
2. Why is it going to take EPA one year using an Information Collection Request to collect the data from those being regulated in order to develop regulations for existing sources? Does BLM have this same information to regulate existing sources? Please submit to the Committee any data collection results or analysis the BLM has conducted on existing sources on federal lands.
3. How many air experts are currently employed by the BLM?
4. Ms. Leiter stated at this hearing that methane emissions have increased and cited EPA data to support her statement. According to this data, have methane emissions increased?
5. Are the social cost of methane benefits cited in the preamble and proposed rule, captured by the similar EPA NSPS 0000a regulatory conditions used in the rule?
6. What actual actions is BLM taking to reduce the time it takes to approve Right Of Ways? Please provide an explanation and BLMs path forward for the delayed ROWs discussed in the hearing?

**Questions from Rep. Lowenthal** for Deputy Assistant Secretary Amanda Leiter

1. Ms. Leiter, during the hearing you seemed to indicate that sole air emission authority rested with the Environmental Protection Agency. However, isn't it the case that there is a different regulatory environment for air emissions offshore?

**From:** Strader, Nick  
**To:** [Benkosky, Carol](mailto:Benkosky,Carol)  
**Subject:** RE: WSA Background  
**Date:** Friday, May 13, 2016 1:31:13 PM

---

Carol – can you point me in the direction of the document that addresses this WSA? I'd like to hopefully track down a little more information on the rationale for deeming the WSA not suitable for wilderness....

---

**From:** Benkosky, Carol [mailto:[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)]  
**Sent:** Thursday, May 12, 2016 3:17 PM  
**To:** Strader, Nick  
**Subject:** Re: WSA Background

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The BLM lands were studied under Section 202 of FLPMA as they have wilderness values only in conjunction with the adjoining agency's roadless area. They were included in the 1990 U.S. Forest Service Final EIS and Resource Management Plan for the Ochoco National Forest and Crooked River National Grassland. The final recommendation in 1991 for this WSA was to release the entire area for uses other than wilderness. This included the 3,240 acres managed by the BLM.

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Nick

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**From:** Carol Benkosky  
**To:** [Strader, Nick](mailto:Nick.Strader@mail.house.gov)  
**Subject:** Re: WSA Background  
**Date:** Friday, May 13, 2016 2:43:05 PM

---

I can get it to you this afternoon. Is that ok?

Carol Benkosky

On May 13, 2016, at 10:30 AM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

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**From:** Strader, Nick  
**To:** [Carol Benkosky](mailto:Carol.Benkosky)  
**Subject:** RE: WSA Background  
**Date:** Friday, May 13, 2016 2:51:06 PM

---

Yep. Sounds great.

---

**From:** Carol Benkosky [mailto:[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)]  
**Sent:** Friday, May 13, 2016 11:42 AM  
**To:** Strader, Nick  
**Subject:** Re: WSA Background

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Carol Benkosky

On May 13, 2016, at 10:30 AM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

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**From:** Benkosky, Carol  
**To:** [Strader, Nick](#)  
**Subject:** Re: WSA Background  
**Date:** Friday, May 13, 2016 5:16:54 PM  
**Attachments:** [Pages from Wilderness Study Report Vol.1 1991 \(2\).pdf](#)

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Here is a copy of the Deschutes Canyon Steelhead Falls Wilderness Study Report done in 1991. It includes the original description for this area and the Recommendation and Rational for the WSA. I am looking for a link for the full document, but I think this is what you were looking for...and what I have handy.

On Fri, May 13, 2016 at 11:43 AM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

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# Deschutes Canyon -Steelhead Falls Wilderness Study Area

## 1. The Study Area -3,240 acres

The Deschutes Canyon-Steelhead Falls Wilderness Study Area (WSA)(OR-5-14) is part of a larger study area that includes U.S. Forest Service lands (USFS RARE II Planning Area #6321) (see Map 1). This WSA is located in a triangle formed by the towns of Madras, Redmond and Sisters, in Central Oregon. The Steelhead Falls study area is a long narrow area located along the upper Deschutes River, within and adjacent to the U.S. Forest Service-administered Crooked River National Grasslands.

This study area actually consists of two subunits separated by a 40-acre parcel of Forest Service land and a **40-acre** parcel of private land. For purposes of this report these two subunits will be discussed as one area. Its length is approximately 10 miles, and its width varies from 0.25 mile to 2 miles. (The joint U.S. Forest Service/Bureau of Land Management Deschutes Canyon-Steelhead Falls study area is triangular in shape, up to 7 miles wide and approximately 11 miles long.) (See map 1).

The study area boundary is a combination of property lines and roads. The WSA is accessible from all

directions: Crooked River Ranch on the east, Road 63 through Cove Palisades State Park to the north, USFS Road #6300 on the west, and Lower Bridge Road to the south. There is no public vehicle access to the river from within the WSA. Year-round hiking access is available to Steelhead Falls from a Crooked River Ranch road east of the Deschutes River.

The BLM inventoried the Steelhead Falls area (WSA OR 5-1 4) during the wilderness inventory in 1978. In 1982, a decision was made that the Deschutes Canyon area would be jointly studied by the USFS and BLM with the Forest Service being the lead agency.

The resulting information is the combined efforts of both agencies, focusing on the wilderness characteristics and potentials for wilderness manageability. Total area included in this further planning area is 18,402 acres. (BLM - 3,240 acres, State of Oregon - 40 acres, private lands - 4,891, and FS - 10,231.)

For purposes of this report, only the BLM portion of the area is described. The recommendation for the BLM portion was developed after consultation with the U.S. Forest Service. The Deschutes River within this study area has been designated as a National

Wild and Scenic River by the Omnibus Oregon Wild and Scenic Rivers Act of 1988 and is classified as "scenic".

The beauty and wildness of the Deschutes River canyon increases with the change in elevation of the steep-sloped canyons as one proceeds north toward Lake Billy Chinook. Once within the Deschutes or Squaw Creek canyons, one's attention becomes very focused and constantly shifts from the roar and rapid movement of the Deschutes River or Squaw Creek in the canyon bottoms, to the vibrant green and red hues of riparian vegetation along the river bank and also to the highly scenic canyon walls towering above this river environment.

The geology of the Deschutes Canyon is characterized by Intra-canyon Basalt and sedimentary layered rock formations of varying thicknesses, colors and textures. Truly interesting combinations of reddish brown, light tan, white, light and dark grey multicolored basalt and sedimentary textured formations captures one's attention. They leave the visitor with a lasting impression that these formations were bisected by the Deschutes River over several thousand years. The Deschutes River and its tributary Squaw Creek meander in the canyon bottoms.

The area is surrounded by the Crooked River Ranch (a private subdivision) to the east, Lake Billy Chinook to the north, by low-density rural populations to the south and farmlands to the west.

The BLM lands were studied under Section 202 of the Federal Land Policy and Management Act as they have wilderness values only in conjunction with an adjoining agency's roadless area. They were included in the 1990 U.S. Forest Service Final Environmental Impact Statement/Land and Resource Management Plan for the Ochoco National Forest and Crooked River National Grassland.

There were four alternatives analyzed in that EIS: all wilderness, wilderness designation for the modified area, special management area to maintain roadless character for semi-primitive nonmotorized recreation, and the no wilderness/no action alternatives.

## 2. Recommendation and Rationale

0 acres recommended for wilderness

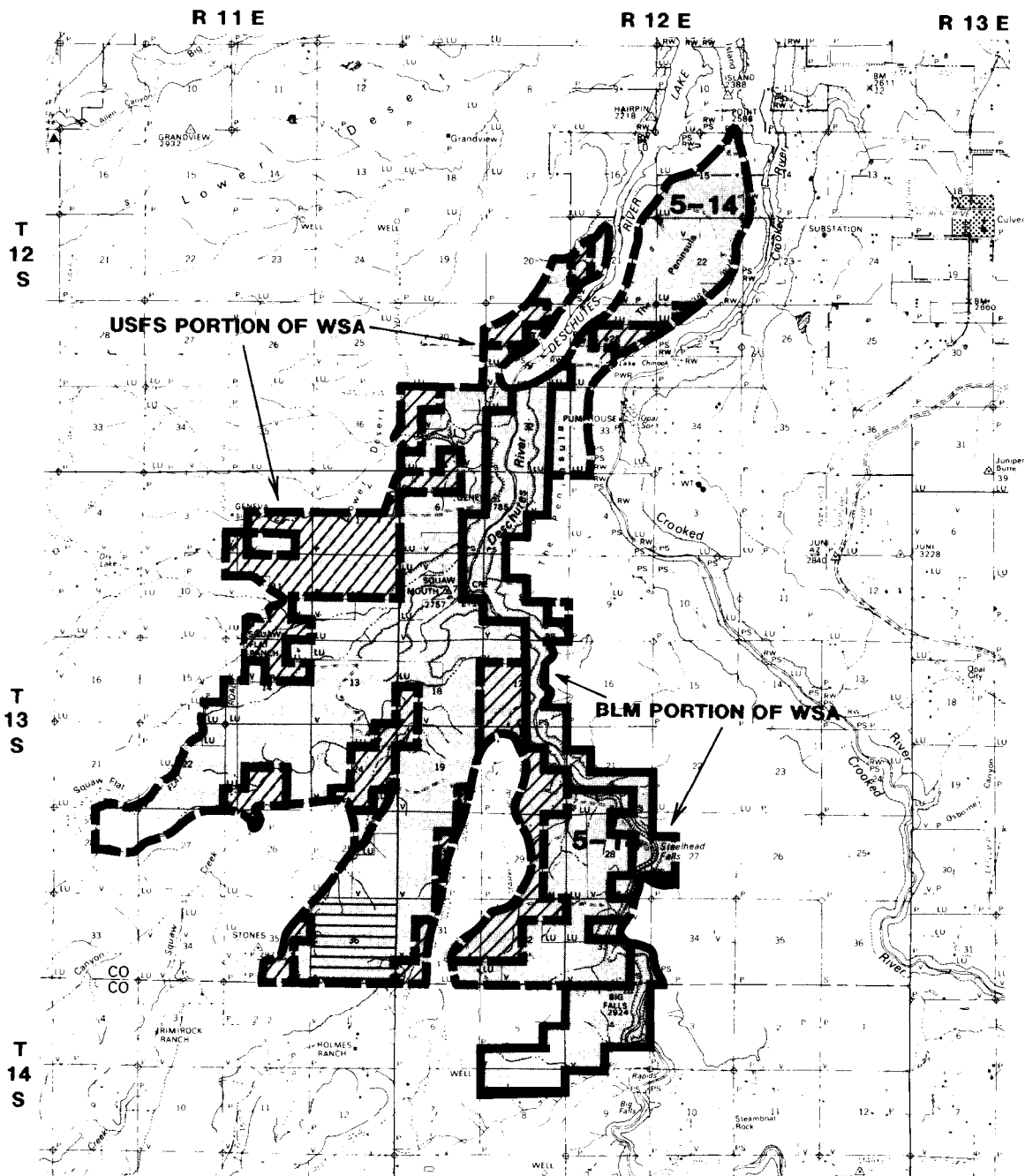
3,240 acres recommended for nonwilderness.

The recommendation for the WSA is to release the entire area for uses other than wilderness. The All Wilderness alternative is considered to be the environmentally preferable alternative as it would result in the least change to the natural environment over the long term. The recommendation, however, would be implemented in a manner which would use all practical means to avoid or minimize environmental impacts.




The area was recommended nonsuitable due to its small size, shape, limited wilderness opportunities, and manageability concerns. The steep confining nature of the river canyons would concentrate use primarily within the canyon bottom. In addition, limited opportunities for solitude within the study area also had a significant influence on the development of the U.S. Forest Service/BLM recommendation.

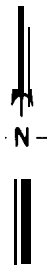
The narrow, irregular shape of this study area, even when combined with U.S. Forest Service lands would create management concerns. Other management concerns are private lands such as the Crooked River Ranch subdivision bordering the eastern boundary of the study area and two large farms bordering BLM lands along the western boundary. Subdivision homes immediately adjacent to BLM lands adversely effect wilderness values in some areas of this canyon, particularly north (downriver) of Steelhead Falls, where homes are located over the canyon rim.

Outside influences also impact the WSA. The large irrigation pump located downriver from Steelhead Falls on private land used for farming practices has an adverse effect on potential wilderness manageability and outstanding solitude, due to its nearby location and frequent operation. The farm adjacent to the southwestern portion of the study area dominates that area due to its cultivated fields, irrigation systems, roads and primitive vehicle routes. Human activities on lands surrounding the northern portion of the study area also have an adverse effect on solitude and wilderness manageability. The Cove Palisades State Park is a popular water recreation area where jetboats travel up the Deschutes River arm of Lake Billy Chinook. These jetboats can be heard for several miles, depending on wind and atmospheric conditions.

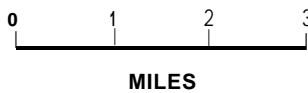


-  RECOMMENDED FOR WILDERNESS (None)
-  RECOMMENDED FOR NONWILDERNESS
-  LAND OUTSIDE WSA RECOMMENDED FOR WILDERNESS (None)

-  SPLIT ESTATE (None)
-  STATE
-  PRIVATE



**Steelhead Falls  
Proposal  
MAP- 1**



Those wilderness values that exist in the WSA are not expected to be adversely impacted even with the nonsuitable recommendation.

### 3. Criteria Considered in Developing the Wilderness Recommendation

#### Wilderness Characteristics

**A. Naturalness:** The majority of this study area generally remains in a natural condition and is particularly enhanced by the beauty of the Deschutes River as it meanders through a canyon bisected over time by this highly scenic river. These canyons begin at the southern portion of the study area as small narrow canyons with an elevation of 2,338 feet in the southern portion.

The Deschutes canyon becomes progressively deep and wide in the northern portion of the study area downriver (north), toward Lake Billy Chinook where its elevation is 1,981 feet. The elevation at the crest of the canyon throughout most portions of the study area is 2,700 feet, resulting in a canyon that is almost 1,000 feet deep.

A variety of wildlife species can be found within the upland range and riparian habitat types within this study area. Mule deer, coyote, cottontail and jack rabbits, marmot and porcupine are commonly seen in the upland area. Beaver, river otter, badgers, owls and numerous song birds can be found along the Deschutes and Squaw Creek tributary. Eagles and hawks also inhabit this canyon area, particularly along the canyon cliff edges.

The riparian vegetation along the Deschutes River includes red alder, redosier dogwood, wax current, spirea, wildrose, penstemon, sedges, and other associated riparian plant species. The vegetation found on the sidehills of this study area includes juniper, bitterbrush, big sagebrush, bluebunch wheatgrass, Idaho fescue, green rabbitbrush, buckwheat, wild rye, milkvetch, yarrow and an occasional pine tree. A variety of colors resulting from different species of riparian habitat also enhance the naturalness and scenic beauty of this river canyon area.

The average river flow of the Deschutes over the past 30 years is 905 cubic feet/second or 655,700

acre feet/year. The Deschutes River and Squaw Creek contain at least four species of game fish including bull (Candidate 2 species), brown, and rainbow trout, and kokanee. Nongame species include squawfish and suckers.

Human imprints such as homes overlooking the eastern canyon rim influence small areas due to excellent topographic and vegetative screening qualities within this canyon area.

There are several areas that no longer retain their natural character. The largest area is a user-developed primitive campground area with numerous vehicle routes upriver from Steelhead Falls on the east side of the Deschutes River that encompasses approximately 123 acres. A U.S. Geological Survey river gauging station located at the extreme north-western portion of this study area also is unnatural.

A road and vehicle way that protrude into the canyon area on the east bank of the Deschutes River downriver from Steelhead Falls were also determined to be unnatural during the joint wilderness inventory of this study area. An old gold flotation mill located upriver from Steelhead Falls on the west bank of the Deschutes is also unnatural, but it does have historical value.

**B. Solitude:** The joint USFS/BLM wilderness inventory concluded that outstanding opportunities for solitude are present, but due to the small size and narrow confining shape of the BLM lands, these opportunities are only outstanding when the adjacent Forest Service roadless area are considered.

Even though opportunities for solitude are less than outstanding when considered on their own, the BLM lands within this study area do have some excellent solitude opportunities. As soon as one travels from the high plateaus and into the interior canyons, the feeling of being alone in a rugged environment is dramatic and is a completely different feeling than being on the surrounding desert plateau.

Once within the Deschutes or Squaw Creek Canyons, one's attention becomes very focused and constantly shifts from the roar and rapid movement of the Deschutes River or Squaw Creek in the canyon bottoms, to the vibrant green and red hues of riparian vegetation along the river bank and also to the highly scenic canyon walls towering above this river environment.

The canyons do provide some topographic screening but tend to concentrate use. Topographic screening also exists on a few plateaus surrounding these

**Table 1. Land Status and Acreage Summary of the Study Area**

	<b>Acres</b>
<b>Within Wilderness Study Area</b>	
BLM (surface and subsurface)	3,240
Split-Estate (BLM surface only) <sup>1</sup>	0
Inholdings (State, Private)	0
Total	<b>3,240</b>
<b>Within the Recommended Wilderness Boundary</b>	
BLM (within WSA)	0
BLM (outside WSA)	0
Split-Estate (within WSA) <sup>1</sup>	0
Split-Estate (outside WSA) <sup>1</sup>	0
Total BLM Land Recommended for Wilderness	0
Inholdings (state, private)	0
<b>Within Area Not Recommended for Wilderness</b>	
BLM	3,240
Split-Estate <sup>1</sup>	0
Total BLM Land Not Recommended for Wilderness	3,240
Inholdings (State, Private)	0

<sup>1</sup>For purposes of this report, split-estate lands are defined only as those lands with Federal surface and non Federal subsurface (minerals)

canyon areas. Juniper trees offer the best vegetative screening qualities within the study area and are scattered throughout most of the canyon slopes and plateaus, helping to screen visitors from each other and human imprints.

There are three or four primary access points with unmaintained trails into established dispersed campsites. Encounters with other hikers and backpackers would occur in the Deschutes and Squaw Creek Canyons because there is simply no way visitors could avoid each other once they begin hiking along either the Deschutes River or Squaw Creek canyon bottoms due to their confining nature.

The Deschutes River, Squaw Creek, and their tributary side canyons, offer the best opportunities to be alone. It is difficult to follow the river or creek far because many portions of the canyon immediately adjacent to the Deschutes River are narrow, steep, and rocky. Access into these canyons is also very limited due to the rugged topography in this area. For these reasons visitors searching for solitude would have to travel into more difficult areas in the side canyons, away from trails and traditionally used camp spots. These side canyons offer the best

opportunities to find a secluded spot. Some of the plateaus west of Deschutes Canyon are also good places to find secluded spots because they are outside major travel corridors and high use areas.

**C. Primitive and Unconfined Recreation:** Four primitive and unconfined recreational activities are outstanding within the BLM portion of the study area. Two of these activities are fishing and hiking in a rugged environment. A remote fishing experience would require hiking into this canyon country so these two different types of recreational activities are directly related.

There are several fish species that make this river outstanding for a remote river fishing experience. Rainbow trout, brown, bull and kokanee can be occasionally caught along the portion of the Deschutes River from Lake Billy Chinook to Steelhead Falls. The brown trout is the dominant trout species upriver from Steelhead Falls.

The rugged nature of this steep canyon limits many fishing enthusiasts resulting in a remote quality fishing experience for those visitors who are willing to pursue fishing opportunities in this canyon. A moder-

ate amount of physical effort is required to hike relatively steep slopes and climb over or around basalt landslides, steep cliffs and/or dense riparian vegetation while pursuing these fishing opportunities. The presence of rattlesnakes in these canyons, reported to be in high densities along the heavily vegetated riverbanks and steep rocky sidehills also discourages visitors and limit fishing pressure.

This diverse fishery is maintained by water flow levels on the Deschutes River, excellent riparian habitat and numerous springs and seeps in this canyon as well as Squaw Creek canyon. The rushing sounds of river rapids and the natural beauty of riparian vegetation also enhance the fishing and hiking experience.

Bird watching and opportunities for photography are also considered outstanding. More than 200 species of birds have been identified in and around the study area. The river canyons, riparian areas, cliffs, plateaus, and grasslands within the study area provide a wide variety of habitat for many different wildlife species. Among these are owls, bald and golden eagles, ospreys, hawks, swallows, waterfowl and numerous song birds. Bald eagles are the only known threatened and endangered species found in the area.

Opportunities to photograph these species are outstanding especially when combined with highly scenic vistas of the river canyons and the Cascade Range.

**D. Special Features:** Several special features exist within the study area. The variety of wildlife species and habitat occurring in the study area and the dependency which wildlife have for portions of this area is an important special feature. For example, the Deschutes and Squaw Creek canyons and plateaus form an important portion of the Metolius deer winter range, for approximately 5,600 animals.

The bald eagle and peregrine falcon also inhabit these canyons during the winter months. The Bald eagle is the only known threatened and endangered species. Upland birds include populations of chukar, quail, Hungarian partridge and dove. The *Hypsiglena torquata* (desert night snake) an animal on the review list has also been reported near the study area.

Several species of fish are also found in this portion of the Deschutes River which provide an outstanding river fishing experience within a remote river canyon environment. Bull trout (Category 2 species), rainbow, brown trout and kokanee can be caught along

the portion of the Deschutes River from Lake Billy Chinook to Steelhead Falls. The brown trout is the predominant trout species upriver from Steelhead Falls. The basic reason that this portion of the Deschutes River is not fished very often is due to its limited access into this remote rocky landscape and reported abundance of rattlesnakes.

Based on current information and plant lists, only one special status plant is known to exist on BLM land in the Steelhead Falls WSA. *Artemisia ludoviciana* ssp. *estesii* (Estes' wormwood) is known from the riparian vegetation along the Deschutes River, from Dillon Falls in the south to Lake Billy Chinook in the north. It is a Category 2 Candidate for Federal listing as endangered/threatened.

One plant species of special interest, *Astragalus peckii* (Peck's milkvetch) is suspected of being within the study area. This plant is known from about 7 miles southwest of the Steelhead Falls area and would be expected in generally flat, sandy soils dominated by juniper. It is a Category 2 Candidate for Federal listing as endangered/threatened.

The following educational, historical and scientific opportunities exist for a number of disciplines:

- Geology: The study area is in a zone where a number of geologic strata merge.
- Archaeology: Several major archaeological surveys have been conducted in the Deschutes River canyon. These surveys have documented numerous native American and historical sites.
- Terrestrial and Aquatic Biology: The interface between Cascade and Desert-Canyon ecosystems provides an unusually rich array of wildlife. Many species are dependent on the availability of caves, rock shelves, or talus, such as many raptor species which inhabit the area.
- Botany: The springs, seeps, and shelter provided by these canyons and river riparian areas support an interesting diversity of plants. Currently the Audubon Society of Portland, the Native Plant Society and other naturalists use this area for study of native Central Oregon vegetation in a primarily undisturbed ecosystem. Due to warmer sheltered conditions of the canyons in the spring, many plants are blooming up to a month earlier than the more exposed desert ecosystem plant species found on the desert plateaus.

## Diversity in the National Wilderness Preservation System

### A. Expanding the Diversity of Natural Systems and Features as Represented by Ecosystems:

According to the Bailey-Kuchler system of classifying ecosystems, the Deschutes Canyon-Steelhead Falls WSA is located in the Intermountain Sagebrush province and the Potential Natural Vegetation is Sagebrush steppe. The study area contains scattered juniper of varying sizes and ages, sagebrush and bitterbrush. Rabbitbrush, Idaho fescue, and tall pines in the canyon bottoms make for interesting contrast in the ecosystem.

Wilderness designation of this WSA would add an ecosystem not presently represented in Oregon and represented in the National Wilderness Preservation System by only three areas. There are 66 other BLM areas in the state under study with this ecosystem. This information is summarized in Table 2.

### B. Assessing Opportunities for Solitude or Primitive Recreation Within a Day's Driving Time (5 hours) of Major Population Centers:

There are six major population centers within five hours' driving time of the Deschutes Canyon-Steelhead Falls WSA: Eugene/Springfield, Portland and Salem, Oregon, and Richland/Kennewick/Pasco, Tacoma, and Yakima, Washington. Table 3 summarizes the number and acreage of designated areas and other BLM study areas within five hours' drive of major population centers.

**C. Balancing the Geographic Distribution of Wilderness Areas:** The Deschutes Canyon-Steelhead Falls WSA would not contribute to balancing the geographic distribution of areas within the National Wilderness Preservation System. There are fourteen designated wilderness areas within 100 miles of the WSA.

## Manageability

(The area must be capable of being effectively managed to preserve its wilderness character.)

Manageability of this study area as wilderness would only be possible when combined with adjacent U.S. Forest service lands having wilderness values. Wilderness manageability of this study area would not be possible by itself for several reasons. The narrow, irregular shape and limited size of the area and rugged canyons which confine visitor use to canyon bottoms restrict opportunities for outstanding solitude.

Activities on adjacent private lands also influence and detract from wilderness manageability. There are two areas where outside sights and sounds limit naturalness, solitude and primitive types of recreation. These two areas are north of Steelhead Falls. The Crooked River Ranch property extends across the Deschutes River to its west bank. A subdivision with homes extend over the eastern canyon rim and intrude upon the natural character of this canyon. Opportunities for solitude and primitive recreation are also limited in this area for the same reason.

Outside sites and sounds would adversely affect wilderness values adjacent to these activities. These include a tract of private land adjacent to the WSA where a large water pump, powerline and road dominate the landscape in this location and limit naturalness, solitude and primitive recreation opportunities.

Additional sights and sounds are generally limited to the north end where water ski boats can be seen and heard from Lake Billy Chinook. Although these activities do not totally dominate the northern portion of the study area, they do have an adverse effect on the naturalness, solitude and primitive types of recreation in that portion of the study area. A water gauging station is also located along the Deschutes in this portion of the study area and detracts from the overall naturalness of this portion of the study area.

Public lands adjacent to the west and southwestern boundaries of the study area are also influenced by farm and ranch activities, reducing naturalness, solitude and primitive unconfined recreation opportunities in these areas.

## Energy and Mineral Resource Values

The 1983 U.S. Geological Survey/U.S. Bureau of Mines summary report titled Mineral Resource Potential of the Deschutes Canyon Roadless Area, Jefferson and Deschutes Counties (Open-File Report 83-376) concluded that there were no producing or developing mines, or active mining claims in the Deschutes Canyon USFS/BLM study area. Two prospects were found during the preparation of this report, but no potential for mineral resources was found. In addition, this report also concluded that development of sand and gravel deposits in the area could not favorably compete with similar deposits in the surrounding area which are closer to points of use.

According to the most current information available, no geothermal resources are known to exist within the Study Area.

**Table 2 - Ecosystem Representation**

Bailey-Kuchier Classification	NWPS Area		Other BLM Studies	
	Area	Acres	Area	Acres
Province/Potential Natural Vegetation				
<b><u>NATIONWIDE</u></b>				
Intermountain Sagebrush/ Sagebrush Steppe	3	79,699	136	4,359,990
<b><u>OREGON</u></b>				
	0	0	66	1,972,724

**Table 3. Wilderness Opportunities for Residents of Major Population Centers**

Population Centers	NWPS Areas		Other BLM Studies	
	Area	Acres	Area	Acres
Eugene/Springfield, OR	42	2,859,994	43	770,436
Portland, OR	48	4,537,392	16	91,762
Salem, OR	45	2,888,764	18	210,085
Richland/Kennewick/ Pasco, WA	45	5,816,707	8	67,186
Yakima, WA	48	5,447,447	8	67,186
Tacoma, WA	35	4,300,167	4	43,494

As of May, 1991, there were no mining claims within the WSA.

**Local Social and Economic Considerations**

Existing social and economic conditions would not change under the No Wilderness/No Action Alternative. If the area were designated wilderness it is estimated that there would be a significant loss of revenue resulting from a decrease of 1,000 AUM/year. The impact due to the loss of grazing could result in 3-4 ranching operations going out of business. Extensive tracts of private lands exchanged into public ownership would no longer be included in the county tax base. The loss of motorized access on the plateaus would also shift demand for this type of recreation to other areas.

**Summary of WSA-Specific Public Comments**

Several opportunities were given to the public to comment on the Deschutes Canyon-Steelhead Falls joint agency study area. The Bureau of Land Management conducted public meetings and gathered public comments for wilderness studies to determine potential for wilderness. The USFS also conducted public meetings and gathered comments for the RARE II Analysis and the Crooked River National Grassland Unit Plan which included the Deschutes Canyon Area.

During the most recent planning efforts for Forest Planning, the USFS and BLM public lands were combined into one study area. A Memorandum of



Understanding between these two agencies was developed and the Forest Service was identified as the lead agency due to a larger percentage of public land within the joint agency study area.

Public comments obtained prior to this joint agency wilderness study effort were considered with other public comments obtained during the Forest planning and joint agency Wilderness evaluation of this area. These public comments are on file at the Forest Service and BLM Offices.

When the BLM requested public input for the Steelhead Falls Study Area in 1980, they received letters from 62 individuals. Sixty expressed support of the proposal to designate the Deschutes Canyon/Steelhead Falls area as a wilderness study area. Many preferred the BLM canyon area to be managed as wilderness, even though it was less than 5,000 acres in size. Two comments were against the designation of wilderness for the Deschutes Canyon. One expressed concern that wilderness would limit fish management activities.

The WSA was also supported for wilderness designation by a number of organizations. These organizations had different degrees of involvement, ranging from very active support specifically for the Deschutes Canyon, to general support for a number of wilderness study areas, including the Deschutes Canyon/Steelhead Falls WSA.

The Jefferson County Comprehensive Plan recommended against any additional wilderness within the county.

During the public review period for the Draft U.S. Forest Service Resource Management Plan/EIS, 135 letters were received concerning the Deschutes Canyon/Steelhead Falls WSA.

The majority of these public comments favored wilderness designation for the river corridor, and many proposed enlarging the wilderness acreage to include all or part of the Deschutes River and Squaw Creek canyons.

Most respondents felt that the proposed 2,500 acres was too small, and recommended increasing acreage up to 20,000 for the wilderness area.

Some public comments did not favor wilderness designation believing that semi-primitive nonmotorized recreation management was more appropriate.

Some individuals also opposed any development in the area and urged protection for the area's wildlife, scenic, and recreation values. They generally opposed livestock grazing and timber harvest in the area.

The Oregon Department of Fish and Wildlife supported 5,200 acres of wilderness classification proposed in the Modified Wilderness Alternative which included wilderness designation of the canyon rim.

The Oregon Parks and Recreation Division supported the USFS/BLM requirement to maintain wilderness values until the area was designated wilderness or released from consideration by Congress.

In summary, the Deschutes Canyon/Steelhead Falls study area received support for wilderness recommendation. Others felt the wilderness character was limited. Most public commenters valued the scenic and primitive recreational qualities of what they considered to be a beautiful canyon area.

## Impacts on Resources

Table 4 summarizes the effects on pertinent resources for all the alternatives considered including designation or non designation of the entire area as wilderness.

The 1990 U.S. Forest Service Final Environmental Impact Statement/Land and Resource Management Plan for the Ochoco National Forest and Crooked River National Grassland analyzed four different land management alternatives which included both USFS and BLM public lands for possible wilderness designation. For this reason, these four alternatives are summarized below. (More detailed information can be found in the U.S. Forest Service EIS). These four alternatives are:

- 1) All Wilderness Alternative: wilderness designation of the total U.S. Forest Service RARE II further planning study Area (# 6321).
- 2) Modified Wilderness Alternative: wilderness designation of the suitable portion of U.S. Forest Service/BLM study area having wilderness values,
- 3) Special Management Area Alternative: A special management area which includes both U.S. Forest Service/BLM study area for uses other than wilderness designation. The intent of this alternative is to enlarge the study area to make it more manageable for more primitive backcountry recreation opportunities, wildlife/range management and Wild and Scenic river management., and
- 4) No Wilderness/No Action Alternative: The entire USFS/BLM public land study area would be managed for uses other than wilderness.

The impacts of these four different land management alternatives on different resource values will be summarized in the order listed above.

**Table 4. Comparative Summary of the Impacts by Alternatives**

Issue Topics	Recommendation (No Wilderness/No Action Alternative)	Ail Wilderness Alternative
Impacts on Wilderness Values	The existing wilderness values would be protected. Non conforming features and uses would be protected. Non-conforming features and uses would continue at current levels and no new land management actions would be made that would adversely affect future designation as wilderness.	Wilderness designation of the entire study area would result in motorized vehicle routes closed and rehabilitated. The area would be similar to the existing condition with many non conforming features and private lands included within the designated wilderness boundary. The plateaus would not offer a challenging, remote natural wilderness experience, but wilderness values within the central portion of this area would be preserved. There would be limited opportunities for solitude away from the influence of the sounds and sights of human activity on private lands adjacent and within the entire study area.
Impacts on Recreation	Motorized vehicles would be restricted in the canyon areas which are managed for semi-primitive, nonmotorized recreational opportunities. Limited motorized use of the plateau areas would also continue.	The entire study area would be managed for semi-primitive recreation opportunities consistent with wilderness designation. These objectives would be accomplished in the canyon areas but not on the plateaus. Current motorized use of some plateau areas would need to be eliminated and this would create a difficult law enforcement problem.
Impacts on Livestock Grazing	Grazing would continue at current levels. Water would be hauled into the area on a daily basis.	Livestock grazing would be eliminated unless water hauling on a daily basis by vehicle could be approved. Current management guidelines could allow occasional use of vehicles for established grazing needs on a case by case basis. Stock watering on the allotments within the study area would require water hauling on a daily basis. An estimated 900 to 1,000 AUM/year would be forgone under this alternative.

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### Modified Wilderness Alternative

Under this alternative, approximately 5,200 acres is recommended as wilderness. Approximately 2,500 acres is public lands managed by the USFS; 2,660 acres is managed by the BLM; and 40 acres is managed by the state of Oregon. Wilderness values within the modified boundary area would be preserved.

Primitive recreation values such as naturalness, solitude and primitive unconfined recreation would be available on a long term basis within the 5,200 acre wilderness area under this alternative. The plateau areas outside the 5,200 acre wilderness area would be managed primarily for wildlife and range resource management. Vehicle routes remaining open on the plateau areas would provide opportunities for semi-primitive, motorized recreation. Hunting opportunities would increase due to more public access to these areas but the quality of hunting would be reduced due to easier public access.

Grazing would continue at current levels and may be increased as range improvements in the plateau areas increase available forage for wildlife and livestock. Water hauling to maintain grazing would continue on access routes outside the wilderness area.

### Special Management Area Alternative

The area within the WSA that is included in the Deschutes and Squaw Creek Canyons would also be protected under the Wild and Scenic river corridors and the backcountry recreation emphasis. The area outside these corridors would be managed for wintering deer herds. Wilderness values on these plateaus was determined to be limited and would be further reduced if vegetative manipulation occurred to improve wildlife/range habitat.

The Squaw Creek management area would emphasize backcountry semi-primitive nonmotorized recreation opportunities. Trails would be developed to offer challenging primitive recreation opportunities and easier access to the Wild and Scenic River corridors. Existing off-highway motorized recreation activities would be eliminated.

Grazing would continue at the current level unless conflicts with wintering deer herds begin to occur. Water hauling to maintain grazing would also continue as needed.

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**Table 4. Comparative Summary of the Impacts by Alternatives (continued)**

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Issue Topics	Recommendation (No Wilderness/No Action Alternative)	All Wilderness Alternative
Impacts on Land Use	Non-conforming features and uses would continue.	Non-conforming features such as roads and wood pole power lines would need to be removed and rehabilitated. Power line rerouting is expected to be very expensive. Private lands that become public land would require extensive work and costs to remove non-conforming features. Even after rehabilitation, most of these lands would still have very limited wilderness values due to their relatively flat, open nature from past farming practices.
Impacts on Land Ownership	Existing situation of ownership would continue.	It is not realistic to assume that all private lands could be exchanged into public ownership. Most of these lands have features that do not conform to wilderness standards and are important to local ranch operations.

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**Modified Wilderness Alternative****Special Management Area Alternative**

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All non-conforming land uses, including access roads and powerlines would be located outside the wilderness area.

All non-conforming uses, including access roads and powerlines, are outside the wilderness.

Private lands within the Squaw Creek management area should be acquired as they become available.

**From:** Strader, Nick  
**To:** [Benkosky, Carol](mailto:Benkosky,Carol)  
**Subject:** Re: WSA Background  
**Date:** Friday, May 13, 2016 7:06:07 PM

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Thanks Carol - just to clarify. The area ONDA wants as wilderness was determined by BLM to be non suitable for wilderness. Correct?

On May 13, 2016, at 2:16 PM, Benkosky, Carol <[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)> wrote:

Here is a copy of the Deschutes Canyon Steelhead Falls Wilderness Study Report done in 1991. It includes the original description for this area and the Recommendation and Rational for the WSA. I am looking for a link for the full document, but I think this is what you were looking for...and what I have handy.

On Fri, May 13, 2016 at 11:43 AM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

Yep. Sounds great.

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**From:** Carol Benkosky [mailto:[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)]

**Sent:** Friday, May 13, 2016 11:42 AM

**To:** Strader, Nick

**Subject:** Re: WSA Background

I can get it to you this afternoon. Is that ok?

Carol Benkosky

On May 13, 2016, at 10:30 AM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

Carol – can you point me in the direction of the document that addresses this WSA? I'd like to hopefully track down a little more information on the rationale for deeming the WSA not suitable for wilderness....

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**From:** Benkosky, Carol [mailto:[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)]

**Sent:** Thursday, May 12, 2016 3:17 PM

**To:** Strader, Nick

**Subject:** Re: WSA Background

In 1991, the recommendation was to release the entire area. After that, we defer to congress to make final determination for if the area should or should not be designated as wilderness.

On Thu, May 12, 2016 at 3:13 PM, Strader, Nick  
<[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

Thanks Carol. So under ONDA's wilderness proposal, were any of their recommended lands recommended by BLM for wilderness?

On May 12, 2016, at 3:12 PM, Benkosky, Carol  
<[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)> wrote:

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<[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

Hey Carol – sorry to be a pain. But any chance you

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<Pages from Wilderness Study Report Vol.1 1991 (2).pdf>

**From:** Carol Benkosky  
**To:** [Strader, Nick](mailto:Nick.Strader@mail.house.gov)  
**Subject:** Re: WSA Background  
**Date:** Saturday, May 14, 2016 10:38:01 AM

---

No, in the early 1990's the BLM determined the area had wilderness character but did not recommend it for inclusion as wilderness

Carol Benkosky

On May 13, 2016, at 4:05 PM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

Thanks Carol - just to clarify. The area ONDA wants as wilderness was determined by BLM to be non suitable for wilderness. Correct?

On May 13, 2016, at 2:16 PM, Benkosky, Carol <[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)> wrote:

Here is a copy of the Deschutes Canyon Steelhead Falls Wilderness Study Report done in 1991. It includes the original description for this area and the Recommendation and Rational for the WSA. I am looking for a link for the full document, but I think this is what you were looking for...and what I have handy.

On Fri, May 13, 2016 at 11:43 AM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

Yep. Sounds great.

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**From:** Carol Benkosky [mailto:[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)]  
**Sent:** Friday, May 13, 2016 11:42 AM

**To:** Strader, Nick  
**Subject:** Re: WSA Background

I can get it to you this afternoon. Is that ok?

Carol Benkosky

On May 13, 2016, at 10:30 AM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:

Carol – can you point me in the direction of the document

that addresses this WSA? I'd like to hopefully track down a little more information on the rationale for deeming the WSA not suitable for wilderness...

---

**From:** Benkosky, Carol [<mailto:cbenkosk@blm.gov>]  
**Sent:** Thursday, May 12, 2016 3:17 PM  
**To:** Strader, Nick  
**Subject:** Re: WSA Background

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**From:** Pool, Jamie  
**To:** [Kenneth Rooney](#)  
**Subject:** HR 496 - Alabama Hills  
**Date:** Monday, May 16, 2016 1:14:05 PM  
**Attachments:** [496 as reported.docx](#)  
[HR 496 Amdt.pdf](#)

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Hi Ken,

Here is the information you requested. Generally, we appreciate the changes made during House markup. As discussed, when providing technical assistance based on concerns raised in our testimony to Rep. Cook's staff after the hearing, we had suggested that the re-designated section 3(p)(1)(B) drop the term "or efficient" so that it reads "affect necessary access to utility facilities or rights of way within or adjacent to the National Scenic Area subject to subsection (e)". Ultimately, staff chose not to make that change.

Jamie

--

Jamie Pool  
U.S. Department of the Interior  
Bureau of Land Management  
Legislative Affairs Division (WO 620)  
(202) 912-7138  
[jpool@blm.gov](mailto:jpool@blm.gov)

Introduced in House (01/22/2015)

114TH CONGRESS  
1ST SESSION

# H. R. 496

To establish the Alabama Hills National Scenic Area in the State of California, and for other purposes.

---

IN THE HOUSE OF REPRESENTATIVES

JANUARY 22, 2015

Mr. COOK introduced the following bill; which was referred to the Committee on Natural Resources

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## A BILL

To establish the Alabama Hills National Scenic Area in the State of California, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

(a) **SHORT TITLE.**—This Act may be cited as the “Alabama Hills National Scenic Area Establishment Act”.

(b) **TABLE OF CONTENTS.**—The table of contents for this Act is as follows:

[Sec. 1. Short title; table of contents.](#)

[Sec. 2. Definitions.](#)

[Sec. 3. Alabama Hills National Scenic Area, California.](#)

[Sec. 4. Management plan.](#)

[Sec. 5. Land taken into trust for Lone Pine Paiute-Shoshone Reservation.](#)

[Sec. 6. Transfer of administrative jurisdiction.](#)

[Sec. 7. Protection of services and recreational opportunities.](#)

[Sec. 8. Land conveyance to eliminate encroachment on public lands.](#)

## SEC. 2. DEFINITIONS.

In this Act:

(1) MANAGEMENT PLAN.—The term “management plan” means the management plan for the National Scenic Area developed under section 4(a).

(2) MAP.—~~Except in section 8, t~~The term “Map” means the map titled “Proposed Alabama Hills National Scenic Area”, dated September 8, 2014.

(3) MOTORIZED VEHICLES.—The term “motorized vehicles” means motorized or mechanized vehicles and includes, when used by utilities, mechanized equipment, helicopters, and other aerial devices necessary to maintain electrical or communications infrastructure.

(4) NATIONAL SCENIC AREA.—The term “National Scenic Area” means the Alabama Hills National Scenic Area established by section 3(a).

(5) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

(6) STATE.—The term “State” means the State of California.

(7) TRIBE.—The term “Tribe” means the Lone ~~Pine Paiute~~ Shoshone Tribe.

(8) UTILITY FACILITY.—The term “utility facility” means any and all existing and future [water system facilities including aqueducts, streams, ditches, and canals; water facilities including, but not limited to, flow measuring stations, gauges, gates, valves, piping, conduits, fencing, and electrical power and communications devices and systems; and any and all existing and future](#) electric generation facilities, electric storage facilities, overhead and/or underground electrical supply systems and communication systems consisting of electric substations, electric lines, poles and towers made of various materials, “H” frame structures, guy wires and anchors, crossarms, wires, underground conduits, cables, vaults, manholes, handholes, above-ground enclosures, markers and concrete pads and other fixtures, appliances and communication circuits, and other fixtures, appliances and appurtenances connected therewith necessary or convenient for the construction, operation, regulation, control, grounding and maintenance of electric generation, storage, lines and communication circuits, for the purpose of transmitting intelligence and generating, storing, distributing, regulating and controlling electric energy to be used for light, heat, power, communication, and other purposes.

## SEC. 3. ALABAMA HILLS NATIONAL SCENIC AREA, CALIFORNIA.



(a) ESTABLISHMENT.—Subject to valid, existing rights, there is established in Inyo County, California, the Alabama Hills National Scenic Area. The National Scenic Area shall be comprised of the approximately 18,610 acres generally depicted on the Map as “National Scenic Area”.

(b) PURPOSE.—The purpose of the National Scenic Area is to conserve, protect, and enhance for the benefit, use, and enjoyment of present and future generations the nationally significant scenic, cultural, geological, educational, biological, historical, recreational, cinematographic, and scientific resources of the National Scenic Area managed consistent with section 302(a) of the Federal Land Policy and Management Act of 1976 ([43 U.S.C. 1732\(a\)](#)).

(c) MAP; LEGAL DESCRIPTIONS.—

(1) IN GENERAL.—As soon as practicable after the date of enactment of this Act, the Secretary shall file a map and a legal description of the National Scenic Area with—

(A) the Committee on Energy and Natural Resources of the Senate; and

(B) the Committee on Natural Resources of the House of Representatives.

(2) FORCE OF LAW.—The map and legal descriptions filed under paragraph (1) shall have the same force and effect as if included in this Act, except that the Secretary may correct any clerical and typographical errors in the map and legal descriptions.

(3) PUBLIC AVAILABILITY.—Each map and legal description filed under paragraph (1) shall be on file and available for public inspection in the appropriate offices of the Forest Service and Bureau of Land Management.

(d) ADMINISTRATION.—The Secretary shall manage the National Scenic Area—

(1) as a component of the National Landscape Conservation System;

(2) so as not to impact the future continuing operations and maintenance of any activities associated with valid, existing rights, including water rights;

(3) in a manner that conserves, protects, and enhances the resources and values of the National Scenic Area described in subsection (b); and

(4) in accordance with—

(A) the Federal Land Policy and Management Act of 1976 ([43 U.S.C. 1701 et seq.](#));

(B) this Act; and

(C) any other applicable laws.

(e) MANAGEMENT.—

(1) IN GENERAL.—The Secretary shall allow only such uses of the National Scenic Area as the Secretary determines would support the purposes of the National Scenic Area as described in subsection (b).

(2) RECREATIONAL ACTIVITIES.—Except as otherwise provided in this Act or other applicable law, or as the Secretary determines to be necessary for public health and safety, the Secretary shall allow existing recreational uses of the National Scenic Area to continue, including hiking, mountain biking, rock climbing, sightseeing, horseback riding, hunting, fishing, and appropriate authorized motorized vehicle use.

(3) MOTORIZED VEHICLES.—Except as specified within this Act and/or in cases in which motorized vehicles are needed for administrative purposes, or to respond to an emergency, the use of motorized vehicles in the National Scenic Area shall be permitted only on—

(A) roads and trails designated by the Director of the Bureau of Land Management for use of motorized vehicles as part of a management plan sustaining a semi-primitive motorized experience; or

(B) on county-maintained roads in accordance with applicable State and county laws.

~~(f) ACQUISITION OF LAND.—~~

(1) IN GENERAL.—Nothing in this Act creates a protective perimeter or buffer zone around the National Scenic Area.

(2) ACTIVITIES OUTSIDE NATIONAL SCENIC AREA.—The fact that an activity or use on land outside the National Scenic Area can be seen or heard within the National Scenic Area shall not preclude the activity or use outside the boundaries of the National Scenic Area.

~~(g)~~ ACCESS.—The Secretary shall continue to provide private landowners adequate access to inholdings in the National Scenic Area.

(h) FILMING.—Nothing in this Act prohibits filming (including commercial film production, student filming, and still photography) within the National Scenic Area—

(1) subject to—

(A) such reasonable regulations, policies, and practices as the Secretary considers to be necessary; and

(B) applicable law; and

(2) in a manner consistent with the purposes described in subsection (b).

(i) FISH AND WILDLIFE.—Nothing in this Act affects the jurisdiction or responsibilities of the State with respect to fish and wildlife.

(j) LIVESTOCK.—The grazing of livestock in the National Scenic Area, including grazing under the Alabama Hills allotment and the George Creek allotment, as established before the date of enactment of this Act, shall be permitted to continue—

(1) subject to—

(A) such reasonable regulations, policies, and practices as the Secretary considers to be necessary; and

(B) applicable law; and

(2) in a manner consistent with the purposes described in subsection (b).

(k) OVERFLIGHTS.—Nothing in this Act restricts or precludes flights over the National Scenic Area or overflights that can be seen or heard within the National Scenic Area, including—

(1) transportation, sightseeing and filming flights, general aviation planes, helicopters, hang-gliders, and balloonists, for commercial or recreational purposes;

(2) low-level overflights of military aircraft;

(3) flight testing and evaluation; or

(4) the designation or creation of new units of special use airspace, or the establishment of military flight training routes, over the National Scenic Area.

(1~~m~~) WITHDRAWAL.—Subject to this Act’s provisions and valid rights in existence on the date of enactment of this Act, including rights established by prior withdrawals, the Federal land within the National Scenic Area is withdrawn from all forms of—

(1) entry, appropriation, or disposal under the public land laws;

(2) location, entry, and patent under the mining laws; and

(3) disposition under all laws pertaining to mineral and geothermal leasing or mineral materials.

(1~~m~~) WILDLAND FIRE OPERATIONS.—Nothing in this Act prohibits the Secretary, in cooperation with other Federal, State, and local agencies, as appropriate, from conducting wildland fire operations in the National Scenic Area, consistent with the purposes described in subsection (b).

(1~~e~~) GRANTS; COOPERATIVE AGREEMENTS.—The Secretary may make grants to, or enter into cooperative agreements with, State, tribal, and local governmental entities and private entities to conduct research, interpretation, or public education or to carry out any other initiative relating to the restoration, conservation, or management of the National Scenic Area.

(1~~o~~) AIR AND WATER QUALITY.—Nothing in this Act modifies any standard governing air or water quality outside of the boundaries of the National Scenic Area.

(1~~e~~) UTILITY FACILITIES AND RIGHTS OF WAY.—

(1) Nothing in this Act shall—

(A) affect the existence, use, operation, maintenance (including but not limited to vegetation control), repair, construction, reconfiguration, expansion, inspection, renewal, reconstruction, alteration, addition, relocation, improvement, funding, removal, or replacement of utility facilities or appurtenant rights of way within or adjacent to the National Scenic Area;

(B) affect necessary or efficient access to utility facilities or rights of way within or adjacent to the National Scenic Area [subject to subsection \(e\)](#);

[\(C\) preclude the Secretary from authorizing the establishment of new utility facility rights of way \(including instream sites, routes, and areas\) within the National Scenic Area in a manner that minimizes harm to the purpose of the National Scenic Area as described in subsection \(b\) –](#)

(i) with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) and any other applicable law; and

(ii) subject to such terms and conditions as the Secretary determines to be appropriate. ~~(C) preclude the establishment of new utility facilities or rights of way (including instream sites, routes, and areas) within the National Scenic Area if such facilities—~~

#### SEC. 4. MANAGEMENT PLAN.

(a) IN GENERAL.—Not later than 3 years after the date of enactment of this Act, in accordance with subsection (b), the Secretary shall develop a comprehensive plan for the long-term management of the National Scenic Area.

(b) CONSULTATION.—In developing the management plan, the Secretary shall ~~consult with—~~

(1) consult with appropriate State, tribal, and local governmental entities, including Inyo County, ~~the Los Angeles Department of Water and Power~~, and the Tribe;

(2) seek input from—

(A) investor-owned utilities, including Southern California Edison Company;

~~(B)~~ the Alabama Hills Stewardship Group; ~~and~~

~~(C)~~ members of the public; ~~and-~~

(D) the Los Angeles Department of Water and Power.

(c) INCORPORATION OF MANAGEMENT PLAN.—In developing the management plan, in accordance with this section, the Secretary shall allow, in perpetuity, casual-use mining limited to the use of hand tools, metal detectors, hand-fed dry washers, vacuum cleaners, gold pans, small sluices, and similar items.

(d) INTERIM MANAGEMENT.—Pending completion of the management plan, the Secretary shall manage the National Scenic Area in accordance with section 3.

#### SEC. 5. LAND TAKEN INTO TRUST FOR LONE PINE PAIUTE-SHOSHONE RESERVATION.

(a) TRUST LAND.—As soon as practicable after the date of the enactment of this Act, the Secretary shall take the approximately 132 acres of Federal land depicted on the Map as “Lone

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Pine Paiute-Shoshone Reservation Addition” into trust for the benefit of the Tribe, subject to the following:

(1) **CONDITIONS.**—The land shall be subject to all easements, covenants, conditions, restrictions, withdrawals, and other matters of record on the date of the enactment of this Act.

(2) **EXCLUSION.**—The Federal lands over which the right-of-way for the Los Angeles Aqueduct is located, generally described as the 250-foot-wide right-of-way granted to the City of Los Angeles pursuant to the Act of June 30, 1906 (Chap. 3926), shall not be taken into trust for the Tribe.

(b) **RESERVATION LAND.**—The land taken into trust pursuant to subsection (a) shall be considered part of the reservation of the Tribe.

(c) **GAMING PROHIBITION.**—Gaming under the Indian Gaming Regulatory Act ([25 U.S.C. 2701 et seq.](#)) shall not be allowed on the land taken into trust pursuant to subsection (a).

#### **SEC. 6. TRANSFER OF ADMINISTRATIVE JURISDICTION.**

Administrative jurisdiction of the approximately [40-56](#) acres of Federal land depicted on the Map as “USFS Transfer to BLM” is hereby transferred from the Forest Service under the Secretary of Agriculture to the Bureau of Land Management under the Secretary.

#### **SEC. 7. PROTECTION OF SERVICES AND RECREATIONAL OPPORTUNITIES.**

Nothing in this Act shall be construed to limit commercial services for existing and historic recreation uses as authorized by the Bureau of Land Management’s permit process. Valid, existing, commercial permits to exercise guided recreational opportunities for the public may continue as authorized on the day before the date of the enactment of this Act.

#### **~~SEC. 8. LAND CONVEYANCE TO ELIMINATE ENCROACHMENT ON PUBLIC LANDS.~~**

**AMENDMENT TO H.R. 496**

**OFFERED BY MR. COOK OF CALIFORNIA**

Page 2, line 6, strike “Except in section 8, the” and insert “The”.

Page 2, line 23, strike “Lone-Pine Paiute Shoshone” and insert “Lone Pine Paiute-Shoshone”.

Page 3, line 2, insert “water system facilities including aqueducts, streams, ditches, and canals; water facilities including, but not limited to, flow measuring stations, gauges, gates, valves, piping, conduits, fencing, and electrical power and communications devices and systems; and any and all existing and future” before “electric”.

Page 7, strike lines 3 through 13 (and redesignate the succeeding provisions accordingly).

Page 11, line 6, insert “subject to subsection (e)” before the semicolon at the end.

Page 11, strike line 7 and all that follows through page 12, line 18, and insert the following:

- 1 (C) preclude the Secretary from author-
- 2 izing the establishment of new utility facility
- 3 rights of way (including instream sites, routes,

1 and areas) within the National Scenic Area in  
2 a manner that minimizes harm to the purpose  
3 of the National Scenic Area as described in sub-  
4 section (b)—

5 (i) with the National Environmental  
6 Policy Act of 1969 (42 U.S.C. 4321 et  
7 seq.) and any other applicable law; and

8 (ii) subject to such terms and condi-  
9 tions as the Secretary determines to be ap-  
10 propriate.

Page 13, line 5, strike “consult with”.

Page 13, line 6, insert “consult with” before “appro-  
priate”.

Page 13, beginning on line 7, strike “, the Los An-  
geles Department of Water and Power,”.

Page 13, strike lines 10 through 13 and insert the  
following:

11 (2) seek input from—  
12 (A) investor-owned utilities, including  
13 Southern California Edison Company;  
14 (B) the Alabama Hills Stewardship Group;  
15 (C) members of the public; and  
16 (D) the Los Angeles Department of Water  
17 and Power.



Page 15, line 2, strike “40” and insert “56”.

Page 15, strike line 16 and all that follows through page 18, line 6 (and amend the table of contents accordingly).



Attachment 031416.110.xml (6052 Bytes) cannot be converted to PDF format.

**From:** Benkosky, Carol  
**To:** [Strader, Nick](#)  
**Subject:** Re: WSA Background  
**Date:** Thursday, May 12, 2016 6:11:37 PM

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**From:** Strader, Nick  
**To:** [Benkosky, Carol](mailto:Benkosky,Carol)  
**Subject:** Re: WSA Background  
**Date:** Thursday, May 12, 2016 6:13:58 PM

---

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**From:** Benkosky, Carol  
**To:** [Strader, Nick](mailto:Nick.Strader@mail.house.gov)  
**Subject:** Re: WSA Background  
**Date:** Thursday, May 12, 2016 6:17:06 PM

---

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Nick

Nick Strader

Central Oregon Office Director/Senior Policy Advisor

Representative Greg Walden (OR-02)

1051 NW Bond Street, Suite 400, Bend, 97701

541-389-4408 (Central Oregon)

[nick.strader@mail.house.gov](mailto:nick.strader@mail.house.gov)

[www.walden.house.gov](http://www.walden.house.gov)

--

Carol Benkosky  
Prineville District Manager  
(541) 416-6730

--

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Prineville District Manager  
(541) 416-6730



**From:** Strader, Nick  
**To:** [Benkosky, Carol](mailto:Benkosky,Carol)  
**Subject:** RE: WSA Background  
**Date:** Thursday, May 12, 2016 6:44:18 PM

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Thanks Carol!

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**From:** Benkosky, Carol [mailto:[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)]  
**Sent:** Thursday, May 12, 2016 3:17 PM  
**To:** Strader, Nick  
**Subject:** Re: WSA Background

In 1991, the recommendation was to release the entire area. After that, we defer to congress to make final determination for if the area should or should not be designated as wilderness.

On Thu, May 12, 2016 at 3:13 PM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:  
Thanks Carol. So under ONDA's wilderness proposal, were any of their recommended lands recommended by BLM for wilderness?

On May 12, 2016, at 3:12 PM, Benkosky, Carol <[cbenkosk@blm.gov](mailto:cbenkosk@blm.gov)> wrote:

Sorry - I got busy and forgot. The Deschutes Canyon-Steelhead Falls Wilderness Study Area (WSA) was part of the original intensive wilderness inventory conducted in 1978 by the BLM in Oregon. In 1991 the Final Wilderness Study Report was completed, which became the final document submitted to Congress in regard to WSAs in Oregon. The study area consists of two subunits separated by a parcel of private land. The planning area of the two units consists of 18,402 acres of which 3,240 is managed by the BLM, 10,231 is managed by the USFS, 40 acres are managed by the state of Oregon, and 4,891 acres are private lands.

The BLM lands were studied under Section 202 of FLPMA as they have wilderness values only in conjunction with the adjoining agency's roadless area. They were included in the 1990 U.S. Forest Service Final EIS and Resource Management Plan for the Ochoco National Forest and Crooked River National Grassland. The final recommendation in 1991 for this WSA was to release the entire area for uses other than wilderness. This included the 3,240 acres managed by the BLM.

On Thu, May 12, 2016 at 2:43 PM, Strader, Nick <[Nick.Strader@mail.house.gov](mailto:Nick.Strader@mail.house.gov)> wrote:  
Hey Carol – sorry to be a pain. But any chance you have the info for the WSA we discussed? Anything you can send over would really help out. Thanks!

Nick

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**From:** Feldgus, Steve  
**To:** ["Teitz, Alexandra"](#)  
**Subject:** RE: Communitization Agreements  
**Date:** Wednesday, May 18, 2016 12:37:49 PM

---

Hi Alexandra,

Just following back up on this – any answers on the question about authority on non-federal land on a communitized area containing federal leases?

Thanks,

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**From:** Teitz, Alexandra [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Wednesday, April 27, 2016 3:54 PM  
**To:** Feldgus, Steve  
**Subject:** Re: Communitization Agreements

OK, thanks -- I'll see if there's a relatively quick answer to be had.

Alexandra Teitz  
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202-208-3027

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Thanks Steve. I know we were looking at this question and discussing with SOL, but it was still in progress. Let me get more information and get back to you. What's your timeframe on this?

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On Wed, Apr 27, 2016 at 1:58 PM, Feldgus, Steve <[Steve.Feldgus@mail.house.gov](mailto:Steve.Feldgus@mail.house.gov)> wrote:

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**To:** [Feldgus, Steve](mailto:Steve.Feldgus@blm.gov)  
**Subject:** Re: Communitization Agreements  
**Date:** Wednesday, May 18, 2016 1:04:45 PM

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**Date:** Wednesday, May 18, 2016 1:09:52 PM

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**Subject:** Re: Communitization Agreements  
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**To:** [Feldgus, Steve](mailto:Feldgus, Steve)  
**Subject:** Re: Communitization Agreements  
**Date:** Wednesday, May 18, 2016 1:31:42 PM

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Josh isn't available today, but you can talk to Chris Rhymes at

Sent from my iPhone

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Hope this all makes sense!

Thanks,

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**From:** Feldgus, Steve  
**To:** "[Alexandra Teitz](#)"  
**Subject:** RE: Communitization Agreements  
**Date:** Wednesday, May 18, 2016 1:32:23 PM

---

.....? Don't leave me hanging! ☺

---

**From:** Alexandra Teitz [mailto:[ateitz@blm.gov](mailto:ateitz@blm.gov)]  
**Sent:** Wednesday, May 18, 2016 1:32 PM  
**To:** Feldgus, Steve  
**Subject:** Re: Communitization Agreements

Josh isn't available today, but you can talk to Chris Rhymes at

Sent from my iPhone

On May 18, 2016, at 1:10 PM, Feldgus, Steve <[Steve.Feldgus@mail.house.gov](mailto:Steve.Feldgus@mail.house.gov)> wrote:

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**Subject:** Re: Communitization Agreements  
**Date:** Wednesday, May 18, 2016 1:32:29 PM

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**Subject:** RE: Communitization Agreements  
**Date:** Wednesday, May 18, 2016 1:32:48 PM

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**From:** Memmott, Justin (Barrasso)  
**To:** [Moran, Jill](#)  
**Subject:** RE: FW: two more questions  
**Date:** Wednesday, May 18, 2016 4:04:52 PM

---

Jill,

Thank you for this. Can I share the memo with home state constituents?

Also, I just thought I'd follow up on the second question. You were going to get back to me on that.

Thanks.

Justin

**From:** Moran, Jill [mailto:jcmoran@blm.gov]  
**Sent:** Friday, April 29, 2016 4:55 PM  
**To:** Memmott, Justin (Barrasso)  
**Subject:** Re: FW: two more questions

Hi Justin,

Sorry for the delay -- It's been a crazy week with hearings.

In response to your first question-

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**I also received a response regarding your second question, but I need clarification on it - I hope to get that Monday and will give you a call.**

Thanks and have a good weekend!

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Thanks.

Justin J. Memmott  
Energy Policy Advisor  
U.S. Sen. John Barrasso M.D.  
(202) 224-0806

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

**From:** Moran, Jill  
**To:** [Memmott, Justin \(Barrasso\)](#)  
**Subject:** Re: FW: two more questions  
**Date:** Wednesday, May 18, 2016 4:15:40 PM

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In response to your first question-

The BLM Wyoming State Office recently released a state-specific bonding IM that affects all ROWs, not just mid-stream oil and gas pipelines. I've included it (along with attachments) below.

I also received a response regarding your second question, but I need clarification on it - I hope to get that Monday and will give you a call.

Thanks and have a good weekend!

Jill

On Tue, Apr 26, 2016 at 3:57 PM, Memmott, Justin (Barrasso) <[Justin\\_Memmott@barrasso.senate.gov](mailto:Justin_Memmott@barrasso.senate.gov)> wrote:

Jill,

I'm just following up on these two questions.

I don't believe we ever got them answered.

Thanks.

Justin

---

**From:** Memmott, Justin (Barrasso)  
**Sent:** Thursday, March 31, 2016 1:37 PM  
**To:** Moran, Jill ([jcmoran@blm.gov](mailto:jcmoran@blm.gov))  
**Subject:** two more questions

Jill,

I have two more unrelated questions, but also in the oil and gas context.

- 1) Does BLM anticipate issuing an Instruction Memorandum related to bonding for mid-stream oil and gas pipelines on federal land? If so, when do you anticipate issuing that IM and can you send me a copy of it?
  
- 2) Has BLM issued a policy document related to new appraisals for non-linear oil and gas leases? (I'm hearing, second hand, from Wyoming BLM that BLM's D.C. headquarters has instructed it to reappraise non-linear oil and gas leases.) If so, can you share that policy document with me?

Thanks.

Justin J. Memmott

Energy Policy Advisor

U.S. Sen. John Barrasso M.D.

(202) 224-0806

--

Jill Moran

Bureau of Land Management

Legislative Affairs Specialist

202.912.7411

--

Jill Moran

Bureau of Land Management

Legislative Affairs Specialist

202.912.7411

**From:** Smith, Linda  
**To:** [Emy Lesofski \(Appropriations\)](#)  
**Subject:** Hoping to have the step-by-step.....  
**Date:** Thursday, May 19, 2016 9:16:29 AM  
**Attachments:** [WYW register.pdf](#)

---

within the hour. I also have the timeline for those leases and have attached the records here.

Happy to chat through these when you get in the office. I am headed over to Main Interior at 10:40 then to the Hill from there.

Thanks.

-----  
Linda H. Smith  
BLM Budget Officer  
Office: 202-912-7060  
Cell/Alternative Telework Number: 202-760-0379  
[lhsmith@blm.gov](mailto:lhsmith@blm.gov)

**BUREAU OF LAND MANAGEMENT  
CASE RECORDATION  
(LIVE) SERIAL REGISTER PAGE**

Run Date/Time: 05/19/16 07:30 AM

Page 1 of 4

**01 12-22-1987;101STAT1330;30USC181 ET SEQ**

**Total Acres**

**Serial Number**

**Case Type 312021: O&G LSE COMP PD -1987**

**900.000**

**WYW--- - 172482**

**Commodity 459: OIL & GAS**

**Case Disposition: CANCELLED**

**Case File Juris:**

Serial Number: WYW--- - 172482

Name & Address

Int Rel

%Interest

MEERKAT WYOMING LLC	1301 INDUSTRIAL PARK DR	TUSCALOOSA AL 354010405	LESSEE	75.000000000
US ORE CORPORATION	2727 DE ANZA RD SPC SD13	SAN DIEGO CA 921096861	LESSEE	25.000000000

Serial Number: WYW--- - 172482

Mer Twp	Rng	Sec	SType	Nr SUFF	Subdivision	District/Resource Area	County	Mgmt Agency
06	0280N	0920W	010		N2SE,SWSE;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT
06	0280N	0920W	013		NWSW,SESW;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT
06	0280N	0920W	014		SENE,NESE,S2S2;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT
06	0280N	0920W	015	01	W2NE,W2E2NE,E2SENE,W2NW;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT
06	0280N	0920W	015	02	SESW,NWSW,E2SE;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT
06	0280N	0920W	023		SWNE,NWNW;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT

Serial Number: WYW--- - 172482

Act Date	Code	Action	Action Remarks	Pending Office
01/23/2006	299	PROTEST FILED		
02/06/2006	387	CASE ESTABLISHED	PAR 73;	
02/07/2006	267	BID RECEIVED	\$19800.00;	
05/03/2006	298	PROTEST DISMISSED		
05/08/2006	237	LEASE ISSUED		
06/01/2006	496	FUND CODE	05:145003	
06/01/2006	530	RLTY RATE - 12 1/2%		
06/01/2006	868	EFFECTIVE DATE		
12/02/2010	140	ASGN FILED		
01/25/2011	139	ASGN APPROVED	EFF 01/01/11; /A/	
06/01/2015	244	TERMINATED		
08/03/2015	140	ASGN FILED		DIV OF MINERALS & LANDS
10/28/2015	791	TERMINAT'N NOTICE ISSUED		
01/05/2016	284	REINSTATEMENT FILED	CLASS II;	

Line Nr Remarks

Serial Number: WYW--- - 172482

0001 STIPULATIONS:  
0002 SPECIAL LEASE STIPULATION:  
0003 THIS LEASE MAY BE FOUND TO CONTAIN HISTORIC  
0004 PROPERTIES AND/OR RESOURCES PROTECTED UNDER  
0005 THE NATIONAL HISTORIC PRESERVATION ACT (NHPA).  
0006 AMERICAN INDIAN RELIGIOUS FREEDOM ACT, NATIVE  
0007 AMERICAN GRAVES PROTECTION AND REPATRIATION  
0008 ACT, E.O. 13007, OR OTHER STATUTES AND  
0009 EXECUTIVE ORDERS. THE BLM WILL NOT APPROVE  
0010 ANY GROUND DISTURBING ACTIVITIES THAT MAY  
0011 AFFECT ANY SUCH PROPERTIES OR RESOURCES UNTIL  
0012 IT COMPLETES ITS OBLIGATIONS UNDER APPLICABLE  
0013 REQUIREMENTS OF THE NHPA AND OTHER

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FOR USE OF THE DATA FOR  
PURPOSES NOT INTENDED BY BLM**

**BUREAU OF LAND MANAGEMENT  
CASE RECORDATION  
(LIVE) SERIAL REGISTER PAGE**

Run Date/Time: 05/19/16 07:30 AM

Page 2 of 4

0014 AUTHORITIES. THE BLM MAY REOUIRE MODIFICATION  
0015 TO EXPLORATION OR DEVELOPMENT PROPOSALS TO  
0016 PROTECT SUCH PROPERTIES. OR DISAPPROVE ANY  
0017 ACTIVITY THAT IS LIKELY TO RESULT IN ADVERSE  
0018 EFFECTS THAT CANNOT BE SUCCESSFULLY AVOIDED.  
0019 MINIMIZED OR MITIGATED.  
0020 NSO (1) T.0280N. R.0920W. 06TH PM. WY SEC.  
0021 013 SESW; 014 SESE; 023 SWNE; (2) PROTECTING  
0022 GREEN MOUNTAIN ACEC.  
0023 TLS (1) FEB 1 TO JUL 31; (2) AS MAPPED ON  
0024 THE LANDER RMP LEASE STIPULATION OVERLAY; (3)  
0025 PROTECTING NESTING RAPTORS.  
0026 TLS (1) NOV 15 TO APR 30; (2) AS MAPPED ON  
0027 THE LANDER FIELD OFFICE GIS DATABASE; (3)  
0028 PROTECTING BIG GAME ON CRUCIAL WINTER RANGE.  
0029 CSU (1) THE LEASE AREA MAY NOW OR HEREAFTER  
0030 CONTAIN PLANTS. ANIMALS. OR THEIR HABITATS  
0031 DETERMINED TO BE THREATENED, ENDANGERED, OR  
0032 OTHER SPECIAL STATUS SPECIES. BLM MAY  
0033 RECOMMEND MODIFICATIONS TO EXPLORATION AND  
0034 DEVELOPMENT PROPOSALS TO FURTHER ITS  
0035 CONSERVATION AND MANAGEMENT OBJECTIVE TO AVOID  
0036 BLM-APPROVED ACTIVITY THAT WILL CONTRIBUTE TO  
0037 A NEED TO LIST SUCH A SPECIES OR THEIR  
0038 HABITAT. BLM MAY REQUIRE MODIFICATIONS TO OR  
0039 DISAPPROVE PROPOSED ACTIVITY THAT IS LIKELY TO  
0040 RESULT IN JEOPARDY TO THE CONTINUED EXISTENCE  
0041 OF A PROPOSED OR LISTED THREATENED OR  
0042 ENDANGERED SPECIES OR RESULT IN THE  
0043 DESTRUCTION OR ADVERSE MODIFICATION OF A  
0044 DESIGNATED OR PROPOSED CRITICAL HABITAT. BLM  
0045 WILL NOT APPROVE ANY GROUND-DISTURBING  
0046 ACTIVITY THAT MAY AFFECT ANY SUCH SPECIES OR  
0047 CRITICAL HABITAT UNTIL IT COMPLETES ITS  
0048 OBLIGATIONS UNDER APPLICABLE REQUIREMENTS OF  
0049 THE ENDANGERED SPECIES ACT AS AMENDED. 16  
0050 U.S.C. § 1531 ET SEQ., INCLUDING COMPLETION OF  
0051 ANY REQUIRED PROCEDURE FOR CONFERENCE OR  
0052 CONSULTATION; (2) AS MAPPED ON THE LANDER RMP  
0053 LEASE STIPULATION OVERLAY; (3) PROTECTING  
0054 CHARADRIUS MONTANUS (MOUNTAIN PLOVER); SPECIES  
0055 AFFECTED BY WATER DEPLETIONS FROM THE PLATTE  
0056 RIVER SYSTEM.  
0057 /A/ 75% US ORE CORP TO MEERKAT WYOMING LLC 75%.  
0058 US ORE CORP RET 25%;

**BUREAU OF LAND MANAGEMENT  
CASE RECORDATION  
(LIVE) SERIAL REGISTER PAGE**

Run Date/Time: 05/19/16 07:30 AM

Page 3 of 4

**01 12-22-1987;101STAT1330;30USC181 ET SEQ**

**Total Acres**

**Serial Number**

**Case Type 312021: O&G LSE COMP PD -1987**

**471.420**

**WYW--- - 172764**

**Commodity 459: OIL & GAS**

**Case Disposition: CANCELLED**

**Case File Juris:**

Serial Number: WYW--- - 172764

Name & Address

Int Rel

%Interest

MEERKAT WYOMING LLC	1301 INDUSTRIAL PARK DR	TUSCALOOSA AL 354010405	LESSEE	75.000000000
US ORE CORPORATION	2727 DE ANZA RD SPC SD13	SAN DIEGO CA 921096861	LESSEE	25.000000000

Serial Number: WYW--- - 172764

Mer Twp	Rng	Sec	SType	Nr Suff	Subdivision	District/Resource Area	County	Mgmt Agency
06	0280N	0920W	013	ALIQ	SWSW;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT
06	0280N	0920W	023	ALIQ	SENE,NENW;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT
06	0280N	0920W	024	ALIQ	NWNE,NENW,S2NW;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT
06	0280N	0920W	024	LOTS	2,3,6-8;	LANDER FIELD OFFICE	FREMONT	BUREAU OF LAND MGMT

Serial Number: WYW--- - 172764

Act Date	Code	Action	Action Remarks	Pending Office
04/03/2006	387	CASE ESTABLISHED	PAR 65;	
04/04/2006	267	BID RECEIVED	\$944.00;	
05/19/2006	237	LEASE ISSUED		
06/01/2006	496	FUND CODE	05;145003	
06/01/2006	530	RLTY RATE - 12 1/2%		
06/01/2006	868	EFFECTIVE DATE		
12/02/2010	140	ASGN FILED		
01/25/2011	139	ASGN APPROVED	EFF 01/01/11; /A/	
06/01/2015	244	TERMINATED		
08/03/2015	140	ASGN FILED		DIV OF MINERALS & LANDS
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01/05/2016	284	REINSTATEMENT FILED	CLASS II;	

Line Nr Remarks

Serial Number: WYW--- - 172764

0001 STIPULATIONS:  
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0004 PROPERTIES AND/OR RESOURCES PROTECTED UNDER  
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0006 AMERICAN INDIAN RELIGIOUS FREEDOM ACT, NATIVE  
0007 AMERICAN GRAVES PROTECTION AND REPATRIATION  
0008 ACT, E.O. 13007, OR OTHER STATUTES AND  
0009 EXECUTIVE ORDERS. THE BLM WILL NOT APPROVE  
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0013 REQUIREMENTS OF THE NHPA AND OTHER  
0014 AUTHORITIES. THE BLM MAY REQUIRE MODIFICATION  
0015 TO EXPLORATION OR DEVELOPMENT PROPOSALS TO  
0016 PROTECT SUCH PROPERTIES, OR DISAPPROVE ANY  
0017 ACTIVITY THAT IS LIKELY TO RESULT IN ADVERSE  
0018 EFFECTS THAT CANNOT BE SUCCESSFULLY AVOIDED.

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CASE RECORDATION  
(LIVE) SERIAL REGISTER PAGE**

Run Date/Time: 05/19/16 07:30 AM

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0019	MINIMIZED OR MITIGATED.
0020	NSO (1) ENTIRE LEASE; (2) PROTECTING GREEN
0021	MOUNTAIN ACEC.
0022	/A/ 75% US ORE CORP TO MEERKAT WYOMING LLC 75%,
0023	US ORE CORP RET 25%:

**From:** Ferguson, Fred  
**To:** [Neil Kornze](#)  
**Subject:** FW: PLI Text  
**Date:** Thursday, May 19, 2016 3:58:22 PM  
**Attachments:** [PLI 2.0.docx](#)

---

Making sure you see this, too.

---

**From:** Fred Ferguson <[Fred.Ferguson@mail.house.gov](mailto:Fred.Ferguson@mail.house.gov)>  
**Date:** Wednesday, May 18, 2016 18:26 PM  
**To:** Tommy Beaudreau <[Tommy\\_Beaudreau@ios.doi.gov](mailto:Tommy_Beaudreau@ios.doi.gov)>, Nikki Buffa <[nicole\\_buffa@ios.doi.gov](mailto:nicole_buffa@ios.doi.gov)>  
**Subject:** PLI Text

Hey guys,

We are still working with various groups on language, but I wanted to get this into your hands sooner rather than later to build on the progress of our recent meeting and ensure the Department has ample time to review prior to any hearings that may be held in the future.

Also, per my emails from yesterday, we would like to begin the process for sharing mapping data and working on land exchange details. Please advise on next steps on these requests.

This draft is not for public consumption. Please keep internal and do not share.

All the best,  
Fred

**Fred Ferguson**  
Chief of Staff  
Rep. Jason Chaffetz (UT-03)  
202-226-7721 direct

May 18, 2016 -

[DISCUSSION DRAFT]

114th CONGRESS

2nd Session

**H. R. \_\_\_\_\_**

To provide greater conservation, recreation, and economic development and to provide greater local management of federal land use in Utah, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. Bishop introduced the following bill; which was referred to the Committee on \_\_\_\_\_

**A BILL**

To provide greater conservation, recreation, and economic development and to provide greater local management of federal land use in Utah, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. Short Title**

The Act may be cited as the Utah Public Lands Initiative Act.

May 18, 2016 -

## **SEC. 2. Table of Contents**

### *Division A – Conservation*

- Title I – Wilderness
- Title II – National Conservation Areas
- Title III – Watershed Management Areas
- Title IV – Special Management Areas
- Title V – Arches National Park Expansion
- Title VI – Jurassic National Monument
- Title VII – Wild and Scenic Rivers
- Title VIII – Ashley Karst National Geologic and Recreation Area

### *Division B – Opportunity*

- Title I – School Trust Land Consolidations
- Title II – Goblin Valley State Park
- Title III – Price Canyon State Forest
- Title IV – Deer Lodge Land Exchange
- Title V – Scofield Land Transfers
- Title VI – Land Conveyances
- Title VII – Land Disposals
- Title VIII – Canyon Country Recreation Zones
- Title IX – Red Rock Country Off-Highway Vehicle Trail
- Title X – Long-Term Native American Economic Development Certainty
- Title XI – Long-Term Energy Development Certainty
- Title XII – Long-Term Travel Management Certainty
- Title XIII – Long-Term Grazing Certainty

### *Division C – Local Planning*

- Title I – Local Participation and Planning

## **SEC. 3. Definitions.**

In this Act:

**FEDERAL LAND.** – Unless otherwise provided the term “federal land” means the lands or interests inland under the jurisdiction of the Department of the Interior or the Department of Agriculture.

# Division A – Conservation

## Title I – Wilderness

### SEC. 101. WILDERNESS DESIGNATIONS

In furtherance of the purposes of the Wilderness Act, and subject to valid existing rights, the following areas of the State are designated as wilderness and as components of the National Wilderness Preservation System pursuant to the Wilderness Act (16 U.S.C. 1131 et seq.).

- (A) CANDLAND MOUNTAIN.—Certain federal land in Emery County, Utah managed by the United States Forest Service comprising approximately 12,330 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_, which shall be known as the “Candland Mountain Wilderness”.
- (B) DESOLATION CANYON. --- Certain federal land in Duchesne, Uintah, Carbon, Emery, and Grand Counties managed by the Bureau of Land Management comprising approximately 473,272 acres, as generally depicted on the Utah PLI Wilderness Map and dated, which shall be known as the “Desolation Canyon Wilderness.”
- (C) HIGH UINTA. --- Certain federal land in Duchesne, Summit, and Uintah Counties, Utah managed by the United States Forest Service comprising approximately 26,701 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_, which shall be known as the “High Uinta Wilderness.”
- (D) MANCOS MESA.—Certain federal land in San Juan County, Utah managed by the Bureau of Land Management and the National Park Service comprising approximately 95,605 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_, which shall be known as the “Mancos Mesa Wilderness.”
- (E) CHEESEBOX CANYON.—Certain federal land in San Juan County, Utah managed by the Bureau of Land Management comprising approximately 14,441 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_, which shall be known as the “Cheesebox Canyon Wilderness.”
- (F) BUTLER WASH.—Certain federal land in San Juan County, Utah managed by the Bureau of Land Management comprising approximately 27,813 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_, which shall be known as the “Butler Wash Wilderness.”
- (G) DARK CANYON.—Certain federal land in San Juan County, Utah managed by the Bureau of Land Management comprising approximately 72,990 acres, as

May 18, 2016 -

generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_\_, which shall be known as the “Dark Canyon Wilderness.”

- (H) BEHIND THE ROCKS.—Certain federal land in San Juan and Grand Counties in Utah managed by the Bureau of Land Management comprising approximately 13,025 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_\_, which shall be known as the “Behind the Rocks Wilderness.”
- (I) BRIDGER JACK MESA.—Certain federal land in San Juan County, Utah managed by the Bureau of Land Management comprising approximately 6,333 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_\_, which shall be known as the “Bridger Jack Mesa Wilderness.”
- (J) CEDAR MESA.—Certain federal land in San Juan County, Utah managed by the Bureau of Land Management comprising approximately 223,566 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Cedar Mesa Wilderness.”
- (K) MIKES CANYON.—Certain federal land in San Juan County, Utah managed by the Bureau of Land Management and the National Park Service comprising approximately 30,549 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_\_, which shall be known as the “Mikes Canyon Wilderness.”
- (L) MULE CANYON.—Certain federal land in San Juan County, Utah managed by the Bureau of Land Management comprising approximately 5,859 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_\_, which shall be known as the “Mule Canyon Wilderness.”
- (M) MARSH PEAK.—Certain federal land in Uintah County, Utah managed by the United States Forest Service comprising approximately 15,032 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_\_, which shall be known as the “Marsh Peak Wilderness.”
- (N) CLIFF PEAK.—Certain federal land in Uintah County, Utah managed by the United States Forest Service comprising approximately 9,154 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_\_, which shall be known as the “Cliff Peak Wilderness.”
- (O) BULL CANYON.—Certain federal land in Uintah County, Utah managed by the Bureau of Land Management comprising approximately 599 acres, as generally depicted on the Utah PLI Wilderness Map and dated\_\_\_\_\_, which shall be known as the “Bull Canyon Wilderness.”
- (P) WHITE CANYON.—Certain federal land in San Juan County, Utah managed by the Bureau of Land Management comprising approximately 18,886 acres, as

May 18, 2016 -

generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “White Canyon Wilderness.”

(Q) MEXICAN MOUNTAIN.—Certain federal land in Emery County, Utah managed by the Bureau of Land Management comprising approximately 85,150 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Mexican Mountain Wilderness.”

(R) SIDS MOUNTAIN.—Certain federal land in Emery County, Utah managed by the Bureau of Land Management comprising approximately 82,406 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Sids Mountain Wilderness.”

(S) MUDDY CREEK.—Certain federal land in Emery County, Utah managed by the Bureau of Land Management comprising approximately 72,400 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Muddy Creek Wilderness.”

(T) SAN RAFAEL REEF.—Certain federal land in Emery County, Utah managed by the Bureau of Land Management comprising approximately 65,146 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “San Rafael Reef Wilderness.”

(U) CRACK CANYON WILDERNESS.—Certain federal land in Emery County, Utah managed by the Bureau of Land Management comprising approximately 27,191 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Crack Canyon Wilderness.”

(V) DEVILS CANYON.—Certain federal land in Emery County, Utah managed by the Bureau of Land Management comprising approximately 8,652 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Devils Canyon Wilderness.”

(W) NELSON MOUNTAIN.—Certain federal land in Emery County, Utah managed by the United States Forest Service comprising approximately 12,856 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Nelson Mountain Wilderness.”

(X) WILLIAM GRANSTAFF CANYON.—Certain federal land in Grand County, Utah managed by the Bureau of Land Management comprising approximately 8,983 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “William Granstaff Canyon Wilderness.”

(Y) MILL CREEK CANYON.—Certain federal land in Grand County, Utah managed by the Bureau of Land Management comprising approximately 12,358

acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Mill Creek Canyon Wilderness.”

(Z) LABYRINTH CANYON.—Certain federal land in Grand and Emery Counties in the state of Utah managed by the Bureau of Land Management comprising approximately 52,969 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Labyrinth Canyon Wilderness.”

(AA) CANYONLANDS.—Certain federal land in San Juan and Grand Counties in the State of Utah managed by the National Park Service comprising approximately 257,607 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Canyonlands Wilderness.”

(BB) ARCHES.—Certain federal land in Grand County, Utah managed by the National Park Service comprising approximately 76,259 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Arches Wilderness.”

(CC) FISHER TOWERS.—Certain federal land in Grand County, Utah managed by the Bureau of Land Management comprising approximately 1,190 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Fisher Towers Wilderness.”

(DD) MARY JANE CANYON.—Certain federal land in Grand County, Utah managed by the Bureau of Land Management comprising approximately 13,574 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Mary Jane Canyon Wilderness.”

(EE) GRANITE CREEK.—Certain federal land in Grand County, Utah managed by the Bureau of Land Management comprising approximately 25,104 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Granite Creek Wilderness.”

(FF) BOOK CLIFFS.—Certain federal land in Grand County, Utah managed by the Bureau of Land Management comprising approximately 175,491 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Book Cliffs Wilderness.”

(GG) WESTWATER.—Certain federal land in Grand County, Utah managed by the Bureau of Land Management comprising approximately 32,955 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Westwater Wilderness.”

(HH) BEAVER CREEK.—Certain federal land in Grand County, Utah managed by the Bureau of Land Management comprising approximately 48,514 acres, as



May 18, 2016 -

generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Beaver Creek Wilderness.”

(II) MOUNT PEALE.—Certain federal land in San Juan County, Utah managed by the United States Forest Service comprising approximately 4,302 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Mount Peale Wilderness.”

(JJ) HAMMOND CANYON.—Certain federal land in San Juan County, Utah managed by the United States Forest Service comprising approximately 7,594 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Hammond Canyon Wilderness.”

(KK) ARCH CANYON.—Certain federal land in San Juan County, Utah managed by the United States Forest Service comprising approximately 4,376 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Arch Canyon Wilderness.”

(LL) RANGE CREEK.—Certain federal land in Carbon County, Utah managed by the Bureau of Land Management comprising approximately 4,062 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Range Creek Wilderness.”

(MM) DINOSAUR.—Certain federal land in Uintah County, Utah managed by the National Park Service comprising approximately 52,349 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Dinosaur Wilderness.”

(NN) CEDAR MOUNTAIN. - Certain federal land in Emery County, Utah managed by the Bureau of Land Management comprising approximately 17,355 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Cedar Mountain Wilderness.”

(OO) INDIAN CREEK. - Certain federal land in San Juan County, Utah managed by the United States Forest Service comprising approximately 6,562 acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Indian Creek Wilderness.”

(PP) STEER GULCH. - Certain federal land in San Juan County, Utah managed by the United States Forest Service comprising approximately \_\_\_\_\_ acres, as generally depicted on the Utah PLI Wilderness Map and dated \_\_\_\_\_, which shall be known as the “Steer Gulch Wilderness.”

## **SEC. 102 MAPS AND LEGAL DESCRIPTIONS.**

(a) **IN GENERAL.** – Not later than two years from the date of enactment of this Act, the Secretary of the Interior and the Secretary of Agriculture as appropriate shall file a map and legal description of the wilderness areas with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(b) **FORCE AND EFFECT.**—Each map and legal description submitted under this section shall have the same force and effect as if included in this title, except that the Secretary of the Interior and the Secretary of Agriculture as appropriate may make any minor modifications of any clerical or typographical errors in the map or legal description.

(c) **PUBLIC AVAILABILITY.** – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the Bureau of Land Management, the National Park Service, and the United States Forest Service.

### **SEC. 103. WILDERNESS ADMINISTRATION.**

(a) **IN GENERAL.** —Subject to valid existing rights, each wilderness area established under section 101 shall be administered by the Secretary of the Interior or the Secretary of Agriculture as appropriate in accordance with the Wilderness Act (16 U.S.C. 1131 et seq.), except that—

(1) any reference in that Act to the effective date shall be considered to be a reference to the date of enactment of this Act.

(2) with respect to wilderness areas that are administered by the Secretary of the Interior, any reference in the Wilderness Act to the Secretary of Agriculture shall be considered to be a reference to the Secretary of the Interior.

(b) **FIRE, INSECTS, AND DISEASE.** — In accordance with section 4(d)(1) of the Wilderness Act , the Secretary of the Interior or the Secretary of Agriculture as appropriate may take such measures in the Wilderness as are necessary for the control of fire, insects, and diseases (including, as the Secretary determines to be appropriate, the coordination of the activities with a State or local agency).

(c) **WILDFIRE MANAGEMENT OPERATIONS.** - Nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment).

(d) **LIVESTOCK.** —

(a)The grazing of livestock in the Wilderness, if established before the date of enactment of this Act, shall be allowed to continue, subject to such reasonable regulations, policies, and practices as the Secretary considers to be necessary in accordance with—

(1) section 4(d)(4) of the Wilderness Act (16 U.S.C.1133(d)(4)); and

(2) the guidelines set forth in Appendix A of the report of the Committee on Interior and Insular Affairs of the House of Representatives accompanying H.R. 2570 of the 101st Congress (House Report 101–405).

(b) **UTAH DEPARTMENT OF AGRICULTURE**

In instances in which historic grazing areas, access, or use is disputed by the permittee, data and information provided by the Utah Department of Agriculture shall be given consideration by the Secretary of the Interior or the Secretary of Agriculture as appropriate to establish historic grazing areas, locations, or use.

(e) **OUTFITTING AND GUIDE ACTIVITIES** .—In accordance with section 4(d)(6) of the Wilderness Act (16 U.S.C. 1133(d)(5)), commercial services (including authorized outfitting and guide activities) within the wilderness areas are authorized to the extent necessary for realizing the recreational purposes of the areas.

(f) **FISH AND WILDLIFE**

(1) **MANAGEMENT ACTIVITIES**.—In furtherance of the purposes and principles of the Wilderness Act (16 U.S.C. 1131 et seq.), the Secretary may conduct any management activities in the Wilderness that are necessary to maintain or restore fish and wildlife populations and the habitats to support the populations, if the activities are carried out—

(A) consistent with relevant wilderness management plans; and

(B) in accordance with—

(i) the Wilderness Act (16 U.S.C. 1131 et seq.); and

(ii) the guidelines set forth in Appendix B of the report of the Committee on Interior and Insular Affairs of the House of Representatives accompanying H.R. 2570 of the 101st Congress (House Report 101–405), including the occasional and temporary use of Off-highway vehicle vehicles if the use, as determined by the Secretary, would promote healthy, viable, and more naturally distributed wildlife populations that would enhance wilderness values with the minimal impact necessary to reasonably accomplish those tasks.

(2) **EXISTING ACTIVITIES**.—Consistent with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)) and in accordance with the guidelines set forth in appendix B of the report of the Committee on Interior and Insular Affairs of the House of Representatives accompanying H.R. 2570 of the 101st Congress (House Report 101–405), the State may continue to use aircraft, including helicopters, to survey, capture, transplant, monitor, and provide water for wildlife populations in the Wilderness.

(g) **ACCESS** .—In accordance with section 5(a) of the Wilderness Act (16 U.S.C. 1134(a)), the Secretary of the Interior or the Secretary of Agriculture as appropriate shall provide the owner of State or private property within the boundary of a wilderness area adequate access to the property.

(h) **WILDLIFE WATER DEVELOPMENT PROJECTS** .— The Secretary shall authorize structures and facilities, including existing structures and facilities, for wildlife water development projects, including guzzlers, in the wilderness areas designated by this title if—

(1) the structures and facilities will enhance wilderness values by promoting healthy, viable, and more naturally distributed wildlife populations; and

(2) the visual impacts of the structures and facilities on the wilderness can be minimized.

(i) **HUNTING, FISHING, AND TRAPPING**.— (A) **IN GENERAL** .—The Secretary may designate areas in which, and establish periods during which, for reasons

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of public safety, administration, or compliance with applicable laws, no hunting, fishing, or trapping will be permitted in the Wilderness.

(B) CONSULTATION.—Except in emergencies, the Secretary shall consult with the appropriate State agency and notify the public before taking any action under subparagraph (A).

(j) WITHDRAWALS- Subject to valid existing rights, all public land within the areas established under this title, including any land or interest in land that is acquired by the United States within the wilderness area after the date of enactment of this Act, is withdrawn from--

- (1) entry, appropriation or disposal under the public land laws;
- (2) location, entry, and patent under the mining laws; and
- (3) operation of the mineral leasing, mineral materials, and geothermal leasing laws.

(k) TRAIL AND FENCE MAINTENANCE. – The Secretary of the Interior and Secretary of Agriculture shall work to ensure that existing trails and fence lines located in the lands identified in this title are adequately cleared and maintained.

#### **SEC. 104. WATER RIGHTS.**

(a) STATUTORY CONSTRUCTION.—Nothing in this title—

- (1) shall constitute either an express or implied reservation by the United States of any water rights with respect to the wilderness areas designated by section 101;
- (2) affects any water rights in the State of Utah existing on the date of enactment of this Act, including any water rights held by the United States.
- (3) establishes a precedent with regard to any future wilderness designations.

(b) EXISTING WATER INFRASTRUCTURE.—

- (1) Nothing in this Act shall be construed to limit motorized access and road maintenance by local municipalities and other water right holders for those maintenance activities necessary to guarantee the continued viability of water resource facilities that currently exist or which may be necessary in the future to prevent the degradation of the water supply in wilderness areas designated by section 101 subject to such reasonable regulations deemed necessary by the Secretary of Interior and Secretary of Agriculture.

#### **SEC. 105. MILITARY OVERFLIGHTS.**

Nothing in this title restricts or precludes—

- (1) low-level overflights of military aircraft over wilderness areas designated by section 101, including military overflights that can be seen or heard within wilderness areas;
- (2) flight testing and evaluation; or
- (3) the designation or creation of new units of special use airspace, or the establishment of military flight training routes, over wilderness areas.

#### **SEC. 106. ADJACENT MANAGEMENT.**

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(a) **IN GENERAL.**—Nothing in this title creates a protective perimeter or buffer zone around a wilderness area designated by section 101.

(b) **ACTIVITIES OUTSIDE WILDERNESS AREA.**—The fact that an activity or use on land outside a wilderness area can be seen, heard or smelled within the wilderness area shall not preclude the activity or use outside the boundary of the wilderness area.

### **SEC. 107. NATIVE AMERICAN TREATY RIGHTS.**

Nothing in this title diminishes the treaty rights of any Indian tribe.

### **SEC. 108. ACQUISITION OF LAND AND INTERESTS IN LAND.**

(a) **ACQUISITION.**—

(1) **IN GENERAL.**—The Secretary of the Interior or the Secretary of Agriculture as appropriate may acquire land or interest in land within the boundaries of the wilderness areas designated by section 101 only by donation, exchange, transfer from another federal agency, or purchase from a willing seller.

(2) **LAND EXCHANGE.**—At the request of the State, not later than 2 years after the date of enactment of this Act, the Secretary of the Interior or the Secretary of Agriculture as appropriate shall complete exchanges for State land located within the boundaries of the wilderness areas designated by this title.

(3) **NO CONDEMNATION.** – Within the areas designated by this title the use of eminent domain or condemnation shall be prohibited.

(b) **INCORPORATION IN WILDERNESS AREA.**—Any land or interest in land located inside the boundary of a wilderness area that is acquired by the United States after the date of enactment of this Act shall be added to, and administered as part of the wilderness area.

### **SEC. 109. WILDERNESS REVIEW.**

(a) **PUBLIC LAND.**—

(1) **FINDING.**—Congress finds that, for purposes of section 603 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782), the public land administered by the Bureau of Land Management in the following wilderness study areas, as depicted on the map entitled Utah PLI Wilderness map and dated \_\_\_\_\_, have been adequately studied for wilderness designation:

- A. 43,323-acre area known as Winter Ridge Wilderness Study Area;
- B. 7,051-acre area known as Jack Canyon Wilderness Study Area;
- C. 6,557-acre area known as Squaw and Papoose Wilderness Study Area;
- D. 20,404-acre area known as Desolation Canyon Wilderness Study Area included within the Desolation Canyon National Conservation Area as designated by this Act and as depicted on the map;

E. 2,517-acre area known as Daniels Canyon Wilderness Study Areas; and

F. 945-acre known as Cross Canyon Wilderness Study Area.

(2) RELEASE.—Any land managed by the Bureau of Land Management within the areas described in paragraph (1) that is not designated as wilderness by this title—

(A) shall not be subject to section 603(c) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782(c));

(B) shall be managed in accordance with land management plans adopted under section 202 of that Act (43 U.S.C. 1712); and

(C) shall no longer be subject to Secretarial Order No. 3310 issued by the Secretary of the Interior on December 22, 2010.

(D) shall be managed pursuant to this Act if released lands otherwise lie within a designated area pursuant to this Act.”

#### **SEC. 110. AIRSHEDS.**

(a) It is the intent of Congress that wilderness areas designated under section 101 shall not be designated as Class I airsheds under the Clean Air Act (42 USC 7401-7661) unless Class I status is agreed to by the State of Utah under existing authorities or the areas designated under section 101 are already managed as Class I airsheds.

## **Title II – National Conservation Areas**

#### **SEC. 201. NATIONAL CONSERVATION AREAS.**

(a) ESTABLISHMENT.—Subject to valid existing rights, the following areas in the State are hereby established as National Conservation Areas:

- (1) BEACH DRAW.—Certain federal land, comprising approximately 659 acres administered by the Bureau of Land Management in Uintah County, Utah as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Beach Draw National Conservation Area.”
- (2) DIAMOND MOUNTAIN.—Certain federal land, comprising approximately 30,391 acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Diamond Mountain National Conservation Area.”
- (3) DOCS VALLEY.—Certain federal land, comprising approximately 8,544 acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Docs Valley National Conservation Area.”

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(4) STONE BRIDGE DRAW.—Certain federal land, comprising approximately 2,415 acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Stone Bridge Draw National Conservation Area.”

(5) STUNTZ DRAW.—Certain federal land, comprising approximately 2,284 acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Stuntz Draw National Conservation Area.”

(6) SAN RAFAEL SWELL.—Certain federal land, comprising approximately 329,933 acres administered by the Bureau of Land Management in Emery County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “San Rafael Swell National Conservation Area.”

(7) LABYRINTH CANYON.—Certain federal land, comprising approximately 35,049 acres administered by the Bureau of Land Management in Emery County and Grand County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Labyrinth Canyon National Conservation Area.”

(8) MUDDY CREEK.—Certain federal land, comprising approximately 55,208 acres administered by the Bureau of Land Management in Emery County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Muddy Creek National Conservation Area.”

(9) COLORADO RIVER.—Certain federal land, comprising approximately 116,156 acres administered by the Bureau of Land Management in Grand County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Colorado River National Conservation Area.”

(10) INDIAN CREEK. - Certain federal land, comprising approximately \_\_\_\_ acres administered by the Bureau of Land Management in San Juan County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Indian Creek National Conservation Area.”

(11) BEARS EARS. - Certain federal land, comprising approximately \_\_\_\_ acres administered by the Bureau of Land Management and U.S. Forest Service in San Juan County, Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, to be known as the “Bears Ears National Conservation Area.”

**SEC. 202 MAP AND LEGAL DESCRIPTION. –**

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(a) **IN GENERAL.** – Not later than two years from the date the date of enactment of this Act, the Secretary of the Interior shall file a map and legal description of the National Conservation Areas established by sections 201, 205 and 206 of this Act with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(b) **FORCE AND EFFECT.**—Each map and legal description submitted under this section shall have the same force and effect as if included in this title, except that the Secretary of the Interior may make any minor modifications of any clerical or typographical errors in the map or legal description.

(c) **PUBLIC AVAILABILITY.** – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the Bureau of Land Management and the United States Forest Service.

## **SEC. 203. ADMINISTRATION OF NATIONAL CONSERVATION AREAS**

(a) **PURPOSES.** - In accordance with this title, the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.), and other applicable laws, the Secretary of the Interior shall manage the National Conservation Areas established by section 201 in a manner that:

- 1) Protects, conserves, and enhances the unique and nationally important historic, cultural, scientific, scenic, recreational, archaeological, natural, and educational resources of the Conservation Area;
- 2) Maintains and enhances cooperative and innovative management practices between resource managers, private landowners, and the public in the Conservation Area; and
- 3) Recognizes and maintains to the extent practicable historic uses of the Conservation Area.

(b) **MANAGEMENT PLANS.**

(1) **PLAN REQUIRED-** Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of each conservation area.

(2) **RECOMMENDATIONS AND CONSULTATION-** The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

(c) **USES-** The Secretary of the Interior shall allow only such uses of the conservation area that would further the purposes outlined in subsection (a) of this section and in consultation and coordination with the Public Lands Initiative Resource Advisory Councils established under Division C of this Act.

## **SEC. 204. GENERAL PROVISIONS.**

(a) **WITHDRAWALS-**

- (1) Subject to valid existing rights, all federal land within the National Conservation Areas established under sections 201, 205, and 206 , including any



land or interest in land that is acquired by the United States within the conservation area after the date of enactment of this Act, is withdrawn from--

- (1) entry, appropriation or disposal under the public land laws;
- (2) location, entry, and patent under the mining laws; and
- (3) operation of the mineral leasing, mineral materials, and geothermal leasing laws.

(2) EXCEPTION.—Notwithstanding the withdrawal in paragraph (1), for the Desolation Canyon National Conservation Area, White River National Conservation Area, and the Book Cliffs Sportsmens National Conservation Area, the Secretary of the Interior may lease oil and gas resources in accordance with the Mineral Leasing Act (30 U.S.C. 181 et seq.) subject to the following conditions:

(A) the area may be accessed only by directional drilling from a lease held on the date of enactment of this Act on land that is adjacent to, and outside of, the conservation area.

(B) the lease shall prohibit surface occupancy and surface disturbance for any mineral activities within the national conservation areas.

(b) FIRE, INSECTS, AND DISEASE .— In accordance with this title, in national conservation areas established under sections 201, 205, and 206 the Secretary of the Interior may take such measures in the NCA as are necessary for the control of fire, insects, and diseases (including, as the Secretary determines to be appropriate, the coordination of the activities with a state or local agency).

(c) WILDLAND FIRE OPERATIONS. —Nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment) in national conservation areas established under sections 201, 205, and 206 . subject to reasonable regulations as prescribed by the Secretary

(d) LIVESTOCK .—

(1) IN GENERAL .— Within the national conservation areas established under sections 201, 205, and 206, the grazing of livestock in which grazing is established before the date of enactment of this Act shall continue in accordance with the grazing permit that existed on January 1, 2016, subject to reasonable regulations as prescribed by the Secretary.

(2) PROTECTION OF EXISTING USES. Existing livestock grazing shall continue, to the greatest extent practicable, in accordance with the following guidelines:

(A) there shall be no curtailments of grazing in the areas designated by this title simply because an area is, or has been designated by this title, nor should designations be used as an excuse by administrators to slowly "phase out" grazing.

B) the number and type of livestock permitted to graze in areas designated by this title shall continue at stocking levels prescribed in the grazing permit in effect at the time an area is designated to the greatest extent practicable.

C) the maintenance of pre-established supporting facilities existing in an area prior to its classification as designated by this title (including fences, line cabins, water wells and pipelines, stock tanks and ponds, etc.), shall continue. Such

maintenance includes the use of Off-highway vehicle or mechanized tools and equipment.

D) the construction of new improvements or replacement of deteriorated facilities in areas designated by this title is permissible if in accordance with guidelines and management plans governing the area.

E) the use of Off-highway vehicle equipment for emergency purposes such as rescuing sick animals or the placement of feed in emergency situations is permissible.

F) Access to historic and traditional water sources for the purpose of supporting livestock shall be maintained.

G) the trailing and movement of domestic livestock where permitted prior to the enactment of this Act shall continue.

#### (4) UTAH DEPARTMENT OF AGRICULTURE

In instances in which historic grazing areas, access, or use is disputed by the permittee, data and information provided by the Utah Department of Agriculture shall be given consideration by the Secretary of the Interior or the Secretary of Agriculture as appropriate to establish historic grazing areas or use.

(e) EXISTING EASEMENTS AND RIGHTS-OF-WAY. – Nothing in this title precludes the Secretary of the Interior from renewing easements or rights-of-way in national conservation areas established under sections 201, 205, and 206 in existence on the date of enactment of this Act, in accordance with this Act and existing law.

(f) ADJACENT MANAGEMENT.—

(a) IN GENERAL.—Nothing in this title creates a protective perimeter or buffer zone around a Conservation area designated by sections 201, 205 and 206 .

(b) ACTIVITIES OUTSIDE CONSERVATION AREA.—The fact that an activity or use on land outside a conservation area established under sections 201, 205, and 206 can be seen, heard, or smelled within the conservation area shall not preclude the activity or use outside the boundary of the Conservation area.

(g) OUTFITTING AND GUIDE ACTIVITIES .— Commercial services (including authorized outfitting and guide activities) within the national conservation areas established under sections 201, 205, and 206 are authorized.

(h) FISH AND WILDLIFE .—Nothing in this title affects the jurisdiction of the State of Utah with respect to the management of fish and wildlife on federal land in the State, including the regulation of hunting, fishing, and trapping and use of helicopters to maintain healthy wildlife populations, within the national conservation areas established under sections 201, 205, and 206.

(i) ACCESS .—The Secretary of the Interior shall provide the owner of State or private property within the boundary of a conservation area established under sections 201, 205, and 206 access to the property.

(j) WILDLIFE WATER DEVELOPMENT PROJECTS .— Structures and facilities, including future and existing structures and facilities, for wildlife water development projects (including guzzlers) in the national conservation areas established under sections 201, 205, and 206 are authorized.

(k) HUNTING AND FISHING. – Within the national conservation areas established under sections 201, 205, and 206, hunting and fishing in areas where hunting and fishing has been allowed on lands and waters owned or managed by the Department of the Interior or Department of Agriculture before the date of enactment of this Act, shall continue.

(l). – WATER RIGHTS

(a) STATUTORY CONSTRUCTION.—Nothing in this title—

(1) shall constitute either an express or implied reservation by the United States of any water rights with respect to the National Conservation Areas designated by this title;

(2) affects any water rights in the State of Utah existing on the date of enactment of this Act, including any water rights held by the United States.

(3) establishes a precedent with regard to any future NCA designations.

(b) EXISTING WATER INFRASTRUCTURE.—

(1) Nothing in this Act shall be construed to limit motorized access and road maintenance by local municipalities and other water right holders for those maintenance activities necessary to guarantee the continued viability of water resource facilities that currently exist or which may be necessary in the future to prevent the degradation of the water supply in NCAs designated by this title subject to such reasonable regulations deemed necessary by the Secretary of Interior and Secretary of Agriculture.

(m) WILDERNESS REVIEW. –

(a) Congress finds that the national conservation areas described in sections 201, 205, and 206 have been adequately studied for wilderness character and wilderness designation pursuant to section 603 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782) and are no longer subject to the requirement of subsection (c) of such section pertaining to the management of wilderness study areas in a manner that does not impair the suitability of such areas for preservation as wilderness.

(b) The Secretary of the Interior may not promulgate or issue any system-wide regulation, directive, instruction memorandum or order that would direct management of the federal lands designated as national conservation areas in sections 201, 205, and 206 in a manner contrary to this title.

(n) VEGETATION MANAGEMENT.—Nothing in this title prevents the Secretary of the Interior from conducting vegetation management projects within the national conservation areas established under sections 201, 205, and 206 in a manner consistent with the purposes of the NCA.

(o) OFF-HIGHWAY VEHICLE VEHICLES.

(1) IN GENERAL- Except in cases in which Off-highway vehicle vehicles are needed for administrative purposes, including project construction and maintenance, or to respond to an emergency, the use of Off-highway vehicle vehicles shall be permitted only on designated routes within the national conservation areas.

(2) DESIGNATED ROUTES

(A) IN GENERAL- The Secretary of the Interior shall manage existing designated routes in a manner that--

- (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized on January 1, 2016;
- (ii) minimizes conflict with sensitive habitat or cultural or historical resources; and
- (iii) does not interfere with private property or water rights.

**(B) CLOSURE OR REROUTING-**

(i) **IN GENERAL-** A designated route may be temporarily closed or rerouted, for a period not to exceed two years, if the Secretary of the Interior, in consultation with the State, and relevant local government within the State determines that--

- (I) the designated route is damaging cultural resources or historical resources;
- (II) temporary closure of the designated route is necessary to repair the designated route or protect public safety.
- (III) modification of the designated route would not significantly affect access within the conservation area.
- (IV) all other options, other than a temporary closure or rerouting, have been exhausted.
- (V) an alternative route has been provided, which can include routes previously closed.

(ii) If temporary closure and rerouting options as outlined in section (i) above have been exhausted, and the designated route continues to damage sensitive habitat or cultural or historical resources, the minimum track of the designated route necessary to protect said resources may be permanently closed.

**(C) NOTICE-** The Secretary of the Interior shall provide information to the public regarding any designated routes that are open, have been rerouted, or are temporarily or permanently closed through--

- (i) use of appropriate signage within the Conservation Area;
- (ii) use of the internet and web resources.

**(3) PERMANENT ROAD CONSTRUCTION-**

(1) After the date of enactment of this Act, except as necessary for administrative purposes or to respond to an emergency, the Secretary of the Interior shall not construct any permanent road within the conservation area designated under section 201, 205, or 206

**(p) NO EFFECT ON NON-FEDERAL LAND OR INTERESTS IN NON-FEDERAL LAND-** Nothing in this title affects ownership, management, or other rights relating to non-federal land or interests in non-federal land.

**(q) SCIENTIFIC INVESTIGATIONS. —** The Secretary of Interior and Secretary of Agriculture shall provide for opportunities, including through partnerships with colleges, universities, schools, scientific institutions, non-profit organizations, researchers, and scientists to conduct research and provide educational and interpretive services within the National Conservation Areas established under 201, 205, and 206. Research findings from the national conservation areas may be used to develop land use solutions that meet human needs while maintaining ecological and economic viability in the region.

(r) RESEARCH AND INTERPRETIVE FACILITIES. —

(1) IN GENERAL. — The Secretary of Interior and Secretary of Agriculture may establish facilities for —

(A) the conduct of scientific research; and

(B) the interpretation of the historical, cultural, scientific, archeological, natural and educational resources of the national conservation areas.

(2) GRANTS; COOPERATIVE AGREEMENTS. —In carrying out subsection (s), the Secretary of the Interior and Secretary of Agriculture may make grants to, or enter into cooperative agreements with the State of Utah, local governmental entities, other institutions and organizations, and private entities to conduct research, develop scientific analyses, and carry out any other initiative relating to the restoration or conservation of the Conservation Areas.

(s) PARTNERSHIPS. —In recognition of the value of collaboration to foster innovation and enhance research and development efforts, the Secretary of the Interior and the Secretary of Agriculture shall encourage partnerships, including public-private partnerships, between and among Federal, State and local agencies, academic institutions, non-profit organizations and private entities.

(t) RECREATION. — The Secretary shall continue to authorize, maintain, and enhance the recreational use of the national conservation areas, including hunting, fishing, camping, hiking, backpacking, cross-country skiing, hang gliding, paragliding, rock climbing, canyoneering, sightseeing, nature study, horseback riding, mountain biking, rafting, Off-highway vehicle recreation on authorized routes, and other recreational activities, so long as such recreational use is consistent with the purposes of the conservation area, this section, and applicable management plans.

(u) ACQUISITION. —

(1) IN GENERAL.—The Secretary of the Interior or the Secretary of Agriculture as appropriate may acquire land or interest in land within the boundaries of the national conservation areas designated by section by this title only by donation, exchange, transfer from another federal agency, or purchase from a willing seller.

(2) LAND EXCHANGE.—At the request of the State, not later than 2 years after the date of enactment of this Act, the Secretary of the Interior or the Secretary of Agriculture as appropriate shall complete exchanges for State land located within the boundaries of the national conservation areas designated by this title.

(3) NO CONDEMNATION. — Within the areas designated by this title the use of eminent domain or condemnation shall be prohibited.

(b) INCORPORATION IN NATIONAL CONSERVATION AREA.—Any land or interest in land located inside the boundary of a national conservation area that is acquired by the United States after the date of enactment of this Act shall be added to, and administered as part of the national conservation area.

**SEC. 205. – BOOK CLIFFS SPORTSMENS NATIONAL CONSERVATION AREA**

(a) ESTABLISHMENT.—Subject to valid existing rights, certain federal land, comprising approximately 42,352 acres administered by the Bureau of Land Management in Uintah County in the State of Utah, as generally depicted on the map entitled Utah PLI National Conservation Area Map and dated \_\_\_\_\_, is established as “Book Cliffs Sportsmens National Conservation Area.”

(b) PURPOSES.—The purpose of the Book Cliffs Sportsmen’s National Conservation Area (referred to in this section as the “NCA”) is to protect hunting and fishing opportunities and habitat, manage and restore fish and wildlife habitat, and facilitate hunting and fishing opportunities in a natural environmental.

(c) MANAGEMENT PLAN. –

(1) PLAN REQUIRED- Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of the NCA.

(2) RECOMMENDATIONS AND CONSULTATION- The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Advisory Council. If the Secretary of the Interior does not incorporate the recommendations submitted by the Advisory Council into the management plan the Secretary of the Interior shall submit a written explanation before the effective date of the management plan to the House Committee on Natural Resources and Senate Committee on Energy and Natural Resources outlining the reasons for rejecting the recommendations of the Advisory Council.

(3) REQUIREMENTS- The management plan shall be written in accordance with subsection (b)

(4) Uses- The Secretary of the Interior shall allow only such uses of the NCA that would further the purposes of the NCA.

(d) BOOK CLIFFS SPORTSMEN’S NATIONAL CONSERVATION AREA ADVISORY COUNCIL. –

(1) ESTABLISHMENT.—Within 180 days after the date of enactment of this Act, the Secretary of the Interior shall establish the Book Cliffs Sportsmens National Conservation Area Advisory Council (referred to as the Advisory Council”) to:

(A) advise the Secretary of the Interior with respect to development and implementation of the NCA management plan to the greatest extent allowable by law.

(B) encourage and promote local participation in the decision making processes affecting the NCA.

(2) MEMBERSHIP.— The Advisory Council shall consist of 11 members.

(3) MEMBERS.—The Secretary of the Interior shall appoint one member from each of the from the following groups:

(i) State Division of Wildlife Resources Director or designee.

(ii) Game bird hunting organizations.

- (iii) Wildlife conservation organizations.
- (iv) Big game hunting organizations.
- (v) a cold water fishing organization.
- (vi) the tourism, outfitter, or guiding industry.
- (vii) the hunting or shooting equipment retail industry.
- (viii) Ute Tribe representative.
- (ix) The agriculture industry.
- (x) the ranching industry designee from Uintah County.
- (xi) Uintah County Commission Chairman or its designee.

(4) ELIGIBILITY.—The Secretary of the Interior shall determine that all individuals appointed to the Advisory Council, and the organization or industry each individual represents, support sustainable-use hunting, wildlife conservation, and recreational shooting.

(1) TERMS.—

(A) IN GENERAL.— Except for the initial appointees, members of the Advisory Council shall be appointed for a term of 4 years. Members shall not be appointed for more than 3 consecutive or nonconsecutive terms.

(2) TERMS OF INITIAL APPOINTEES.—The Secretary of the Interior shall appoint the initial members of the Advisory Council as follows:

- (i) 5 members shall be appointed for a term of 4 years;
- (ii) 4 members shall be appointed for a term of 3 years; and
- (iii) 2 members shall be appointed for a term of 2 years.

(5) PRESERVATION OF PUBLIC ADVISORY STATUS.—No individual may be appointed as a member of the Advisory Council while serving as an officer or employee of the Federal Government.

(6) VACANCY AND REMOVAL.—

(A) IN GENERAL.—Any vacancy on the Advisory Committee shall be filled in the manner in which the original appointment was made.

(B) REMOVAL.—Advisory Committee members shall serve at the discretion of the Secretary of the Interior and may be removed at any time for good cause.

(7) CONTINUATION OF SERVICE.—Each member may continue to serve after the expiration of the term of office to which such member was appointed until a successor has been appointed.

(8) CHAIR.—The Chair of the Advisory Council shall be appointed to a 3-year term by the Secretary of the Interior from among the members of the Advisory Council. An individual appointed to the Advisory Council under (4)(2)(iii) shall be eligible to serve as Chair, but may serve for two years. An individual may not be appointed as Chair for more than 2 consecutive or nonconsecutive terms.

(9) PAY AND EXPENSES.—Members of the Advisory Council shall serve without pay, but each member of the Advisory Council may be reimbursed for travel and lodging incurred through attending meetings of the Advisory Council (including approved workgroup or subgroup meetings) in the same amounts and under the same conditions as Federal employees in accordance with section 5703 of title 5, United States Code.

(10) MEETINGS.—

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- (A) IN GENERAL.—The Advisory Council shall meet at the call of the Secretary of the Interior, the chair, or a majority of the members, but not less frequently than twice annually.
- (B) OPEN MEETINGS.—Each meeting of the Advisory Council shall be open to the public.
- (C) PRIOR NOTICE OF MEETINGS.—Timely notice of each meeting of the Advisory Committee shall be published in the Federal Register and be submitted to publications of general circulation.
- (D) SUBGROUPS.—The Advisory Council may establish such workgroups or subgroups as it deems necessary for the purpose of compiling information or conducting research. However, such workgroups or subgroups may not conduct business without the direction of the Advisory Council.
- (11) QUORUM.—Seven members of the Advisory Council shall constitute a quorum.
- (12) EXPENSES.—The expenses of the Advisory Council that the Secretary of the Interior determine to be reasonable and appropriate shall be paid by the Secretary of the Interior.
- (13) ADMINISTRATIVE SUPPORT AND TECHNICAL SERVICES.—The Secretary of the Interior shall provide to the Advisory Council the administrative support and technical services.
- (14) ANNUAL REPORT.—
- (1) REQUIRED.—Not later than September 30 of each year, the Advisory Council shall submit a report to the Secretary of the Interior, the Committee on Natural Resources of the House of Representatives, and the Committee on Energy and Natural Resources of the Senate. If circumstances arise in which the Advisory Council cannot meet the September 30 deadline in any year, the Secretary of the Interior shall advise the Chair of each such Committee of the reasons for such delay and the date on which the submission of the report is anticipated.
- (2) CONTENTS.—The report required by paragraph (1) shall describe—
- (A) the activities of the Advisory Committee during the preceding year;
- (B) the reports and recommendations made by the Advisory Council to the Secretary of the Interior during the preceding year; and
- (C) an accounting of actions taken by the Secretary of the Interior as a result of the recommendations.
- (15) VEGETATION MANAGEMENT: Within the NCA, the Secretary of the Interior may authorize vegetation management including through mechanical means to the extent necessary to control fire, insects, or disease to promote and improve wildlife habitat and diversity as consistent with the purposes of the NCA.

## **SEC. 206. - BEARS EARS NATIONAL CONSERVATION AREA ADDITIONAL PROVISIONS**

(a) FINDINGS.—

Congress finds the following:



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- (1) The lands within Bears Ears National Conservation Area have been utilized by Native Americans for thousands of years.
- (2) The unique, intact archaeological record found throughout the Bear's Ears National Conservation Area is sacred to numerous Native American tribes and Pueblos and is of great significance to American history.
- (3) Native American Tribes and Pueblos maintain deep connections and commitments to the lands within the Bears Ears National Conservation Area and continue to rely on and utilize these lands for practicing ceremonies, spiritual rejuvenation, gathering herbs, firewood and cedar poles, hunting for game, and caretaking of sacred places.
- (4) Many local residents, many with early pioneer heritage, have similarly strong attachments to the land and associated lifestyles, both vocational and avocational. Many visitors develop similar attachments and appreciation for these landscapes.

(b) ADDITIONAL PURPOSES

ADDITIONAL PURPOSES. - In accordance with this title, the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.), and other applicable laws, the Secretary of the Interior shall manage the Bears Ears National Conservation Areas established by section 201 in a manner that:

- (A) Provides for traditional access by indigenous persons for culturally significant subsistence, including but not limited to traditional gathering and hunting, and cultural and religious uses within the National Conservation Area;
- (B) Develops policies, consistent with the Native American Graves Repatriation and Protection Act, to minimize disturbance of human remains from permitted uses of the National Conservation Area;
- (C) Integrates Native American Traditional Ecological Knowledge (TEK)(36 *CFR* 219.19) to improve social, economic, and ecological sustainability in accordance with US Forest Service 2012 Planning Rule regulations, (FSH 1909.12, Zero code & Ch10);

(c) COOPERATING AGENCIES

COOPERATING AGENCIES. - The Secretaries shall designate and involve as cooperating agencies interested Tribes and Pueblos that trace their culture and heritage to the lands within the Bear's Ears National Conservation Area in accordance with the National Environmental Policy Act (42 U.S.C. 4321 et seq.).

(d) TRIBAL EMPLOYMENT

In employing individuals to perform any construction, maintenance, interpretation, or other service in the Bear's Ears National Conservation Area, the Secretaries shall, insofar as practicable, give priority consideration to members of Native American tribes that meet publically posted job qualifications and criteria consistent with standard federal hiring practices.

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(e) **NATIVE AMERICAN LIASION**

The Secretary of the Interior shall appoint a staff member to serve as a liaison to the Native American tribes that enter into cooperating agency status pursuant to subsection (c). The liaison shall work to ensure the voice and perspective of the cooperating tribal entity is represented in the implementation management of the NCA. This Native American liaison shall serve on the San Juan County Advisory Council, created under Division C of this Act, in the position slotted for a federal land management agency.

**SEC. 207 – INDIAN CREEK NATIONAL CONSERVATION AREA  
ADDITIONAL PROVISIONS**

(a) **ADDITIONAL PURPOSE:**

1. Create an experimental range that allows for flexibility in grazing management to promote rangeland health and/or to respond to research needs.
2. Promotes scientific research and conducts research projects on the interactive affects of land use and the environment; and

**SEC. 208- ADDITIONAL PROVISIONS FOR DOCS VALLEY, STONE BRIDGE  
DRAW, STUNTZ DRAW, BEACH DRAW, MCCOOK RIDGE, AND DIAMOND  
MOUNTAIN NATIONAL CONSERVATION AREAS**

(a) Nothing in this title shall effect existing or future sage grouse conservation projects, including the management of vegetation through mechanical means within the Doc Valley, Stone Bridge Draw, Stuntz Draw, Beach Draw, and Diamond Mountain National Conservation Areas established under section 201.

**Title III – Watershed Management Areas**

**SEC. 301. WATERSHED MANAGEMENT AREAS**

- (a) **ESTABLISHMENT.**—The following watershed management areas are hereby established in the State of Utah, subject to valid existing rights:
- (1) **ASHLEY SPRING.**—The “Ashley Spring Watershed Management Area”, consisting of approximately 10,951 acres of the Ashley National Forest in Uintah County, Utah, as generally depicted on the map entitled Utah PLI Special Management Area Map and dated \_\_\_\_\_.
  - (2) **DRY FORK.**—The “Dry Fork Watershed Management Area”, consisting of approximately 9,641 acres of the Ashley National Forest in Uintah County, Utah, as generally depicted on the map entitled Utah PLI Special Management Area Map and dated \_\_\_\_\_.
  - (3) **CASTLE VALLEY.**—The “Castle Valley Watershed Management Area”, consisting of approximately 34,248 acres of the Manti-LaSal National Forest in Grand County, Utah, as generally depicted on the map entitled Utah PLI Special Management Area Map and dated \_\_\_\_\_.

- (4) WIDDOP MOUNTAIN.—The “Widdop Mountain Watershed Management Area”, consisting of approximately 8,025 acres of the Ashley National Forest in Summit County, Utah, as generally depicted on the map entitled Utah PLI Special Management Area Map and dated \_\_\_\_\_.
- (5) EAST FORK SMITHS FORK.—The “East Fork Smiths Fork Watershed Management Area”, consisting of approximately 3,178 acres of the Ashley National Forest in Summit County, Utah, as generally depicted on the map entitled Utah PLI Special Management Area Map and dated \_\_\_\_\_.

(b) MAP AND LEGAL DESCRIPTION. –

(1) IN GENERAL. – Two years after the date of enactment of this Act, the Secretary of Agriculture shall file a map and legal description of the Watershed Management Areas with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources and the Committee on Agriculture, Nutrition, and Forestry of the Senate.

(2) EFFECT. – The map and legal description prepared under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary of Agriculture may correct minor errors in the map or legal description.

(3) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the United States Forest Service.

**SEC. 302. ADMINISTRATION OF WATERSHED MANAGEMENT AREAS.**

(a) PURPOSES.—The purposes of the watershed management areas are —

- (1) to ensure the protection of the quality of water from the watershed management areas;
- (2) to allow visitors to enjoy the scenic, natural, cultural, recreational, and wildlife values of the watershed management areas;
- (3) to provide for the management, development, and use of drinking water within the watershed areas;
- (4) to allow for the reintroduction of beavers in appropriate watershed management areas;
- (5) to allow for reintroduction of flora (land and aquatic), bird, fish and animal fauna in special management areas and watershed management areas;
- (6) to provide for the restoration of watershed and re-establish ecosystem health in areas damaged by threatened by insects, or disease; and
- (7) to provide for the restoration of ecosystems damaged or threatened by overpopulation of overpopulation of any plant, aquatic or animal species.

(B) MANAGEMENT.—

- (1) IN GENERAL.—The Secretary shall manage the watershed areas—
  - (A) in a manner consistent with the purposes described in subsection (a);
  - (B) in accordance with—

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- (i) the laws (including regulations) generally applicable to the National Forest System;
- (ii) this section; and
- (iii) any other applicable law (including regulations).

(c) **MANAGEMENT PLAN** .—

(1) **PLAN REQUIRED**- Not later than 2 years after the date of enactment of this Act, the Secretary of Agriculture shall develop a management plan for the long-term management of each watershed management area.

(2) **RECOMMENDATIONS AND CONSULTATION**- The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

(3) **USES**- The Secretary of the Interior shall allow only such uses of the watershed management area that would further the purposes outlined in subsection (a) of this section and in consultation and coordination with the Public Lands Initiative Resource Advisory Councils established under Division C of this Act.

**SEC. 303 GENERAL PROVISIONS.**

(a) **MOTORIZED VEHICLES**.—

(1) **IN GENERAL**- Except in cases in which motorized vehicles are needed for administrative purposes or to respond to an emergency, the use of motorized vehicles shall be permitted only on designated routes within the Watershed Management Areas.

(b) **NO EFFECT ON NON-FEDERAL LAND OR INTERESTS IN NON-FEDERAL LAND**- Nothing in this title affects ownership, management, or other rights relating to non-federal land or interests in non-federal land.

(c) **ROAD CONSTRUCTION**- The Secretary shall be permitted to construct roads for administrative or emergency purposes, or if a temporary road is needed to facilitate fuel reduction for water protection purposes.

(d) **OVERSNOW VEHICLES** .—Where permitted prior to the date of enactment of this Act the Secretary of Agriculture shall authorize the use of snowmobiles and other oversnow vehicles within the Watershed Management Areas when there is at least six inches of snow coverage.

(e) **FIRE, INSECTS, AND DISEASE** .— In accordance with this title, the Secretary of Agriculture may—

- (A) in consultation with state, local, and water districts who own or control water

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resources within Watershed Management Areas, the Secretary of Agriculture may carry out measures to manage wildland fire and treat hazardous fuels, insects, and diseases in the Watershed Management Areas to protect or improve water quality or to maintain or restore the characteristics of ecosystem composition and structure.

(f) WILDLAND FIRE OPERATIONS. – Nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment) or affects the authority of the Secretary of Agriculture to authorize mechanical thinning of trees or underbrush to protect or improve water quality or to maintain or restore the characteristics of ecosystem composition and structure.

(g) POST-FIRE REHABILITATION.—The Secretary may conduct post-fire rehabilitation in the watershed areas, consistent with this title and in accordance with applicable law.

(h) VEGETATION MANAGEMENT.—The Secretary of Agriculture shall conduct vegetation management projects within the Watershed Management Areas if projects protect or improve water quality or maintain or restore the characteristics of ecosystem composition and structure.

(i) TIMBER HARVESTING.—Within the Watershed Management Areas, timber harvesting may be utilized if the primary purpose is to restore or improve forest health and watershed function or to further the purposes described in this title.

(j) LIVESTOCK GRAZING .—

(1) IN GENERAL .— Within the watershed management areas established under sections 301, the grazing of livestock in which grazing is established before the date of enactment of this Act shall continue in accordance with the grazing permit that existed on January 1, 2016, subject to reasonable regulations as prescribed by the Secretary.

(2) PROTECTION OF EXISTING USES. Existing livestock grazing shall continue, to the greatest extent practicable, in accordance with the following guidelines:

(A) there shall be no curtailments of grazing in the areas designated by this title simply because an area is, or has been designated by this title, nor should designations be used as an excuse by administrators to slowly "phase out" grazing.

B) the number and type of livestock permitted to graze in areas designated by this title shall continue at stocking levels prescribed in the grazing permit in effect at the time an area is designated to the greatest extent practicable.

C) the maintenance of pre-established facilities existing in an area prior to its classification as designated by this title (including fences, line cabins, water wells and pipelines, stock tanks and ponds, etc.), shall continue.

Such maintenance includes the use of Off-highway vehicle or mechanized tools and equipment.

D) the construction of new improvements or replacement of deteriorated facilities in areas designated by this title is permissible if in accordance with guidelines and management plans governing the area.

E) the use of Off-highway vehicle equipment for emergency purposes such as rescuing sick animals or the placement of feed in emergency situations is permissible.

F) Access to historic and traditional water sources for the purpose of supporting livestock shall be maintained.

G) the trailing and movement of domestic livestock where permitted prior to the enactment of this Act shall continue

(5) UTAH DEPARTMENT OF AGRICULTURE

In instances in which historic grazing locations, access, or use is disputed by the permittee, data and information provided by the Utah Department of Agriculture shall be given consideration by the Secretary of Agriculture to establish historic access, locations, or use.

(k) EXISTING EASEMENTS AND RIGHTS-OF-WAY. – Nothing in this Act precludes the Secretary of Agriculture from renewing easements or rights-of-way in existence as of the date of enactment of this Act, in accordance with this Act and existing law.

(l) ADJACENT MANAGEMENT.—

(a) IN GENERAL.—Nothing in this title creates a protective perimeter or buffer zone around a Watershed Management area designated by section 301.

(m) ACTIVITIES OUTSIDE WATERSHED MANAGEMENT AREA.—The fact that an activity or use on land outside a Watershed Management area can be seen, heard, or smelled within the Watershed Management area shall not preclude the activity or use outside the boundary of the Watershed Management area.

(n) OUTFITTING AND GUIDE ACTIVITIES .— Commercial services (including authorized outfitting and guide activities) within the Watershed Management Areas are authorized.

(o) FISH AND WILDLIFE .—Nothing in this title affects the jurisdiction of the State of Utah with respect to the management of fish and wildlife on federal land in the State, including the regulation of hunting, fishing, and trapping within the Watershed Management Area.

(p) ACCESS .—The Secretary of Agriculture shall provide the owner of State or private property within the boundary of a Watershed Management Area reasonable access to the owner's property.

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(q) **WILDLIFE WATER DEVELOPMENT PROJECTS** .— Structures and facilities, including future and existing structures and facilities, for wildlife water development projects (including guzzlers) in the Watershed Management Areas are authorized.

(r) **HUNTING AND FISHING**. –

Within the Watershed Management Areas in where hunting and fishing on lands and waters owned of managed by the Department of Agriculture was allowed before the date of enactment of this Act, shall continue.

(s) **WATER RIGHTS**. –

(a) **STATUTORY CONSTRUCTION** .—Nothing in this title—

(1) shall constitute either an express or implied reservation by the United States of any water rights with respect to the Watershed Management Areas designated by this title;

(2) affects any water rights in the State of Utah existing on the date of enactment of this Act, including any water rights held by the United States.

(3) establishes a precedent with regard to any future Watershed Management Area designations.

(b) **EXISTING WATER INFRASTRUCTURE**.—

(1) Nothing in this Act shall be construed to limit motorized access and road maintenance by local municipalities and other water right holders for those maintenance activities necessary to guarantee the continued viability of water resource facilities that currently exist or which may be necessary in the future to prevent the degradation of the water supply in Watershed Management Areas designated by section 101 subject to such reasonable regulations deemed necessary by the Secretary of Interior and Secretary of Agriculture.

(t) **WITHDRAWAL** .—

(1) **IN GENERAL** .—Subject to valid rights in existence on the date of enactment of this title, the Federal land within the Watershed Management Areas designated by section 301 are withdrawn from—

(a) all forms of entry, appropriation, and disposal under the federal land laws;

(b) location, entry, and patent under the mining laws; and

(c) operation of the mineral leasing, mineral materials, and geothermal leasing laws

(u) **ASHLEY SPRING AND DRY FORK**.-- The management plans for the Ashley Spring and Dry Fork management areas shall include provisions for the development of containment ponds, water pipes, and other improvements to deliver water to the Ashley Valley should the flow of Ashley Spring become diminished or impaired.

## **Title IV –Special Management Areas**

### **SEC. 401. HIGH UINTAS SPECIAL MANAGEMENT AREA.**

ESTABLISHMENT.—Subject to valid existing rights, the approximately 20,683 acres of the Ashley National Forest in Uintah and Duchesne County, Utah as generally depicted on the map entitled “Utah PLI High Uintas Special Management Area Map” and dated \_\_\_\_\_.

- (a) PURPOSES—The purposes of the High Uintas Special Management Area (referred to in this title as the Area) is to maintain the presently existing wilderness character of the area and to all for the continued use of winter Off-highway vehicle vehicles.

**SEC. 402. – HIGH UINTAS SPECIAL MANAGEMENT AREA MAP AND LEGAL DESCRIPTION.**

(1) IN GENERAL. – Not later than two years after the date of enactment of this Act, the Secretary of Agriculture shall file a map and legal description of the High Uintas Special Management Area with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(2) EFFECT. – The map and legal description prepared under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary of Agriculture may correct minor errors in the map or legal description.

(3) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the United States Forest Service.

**SEC. 403. ADMINISTRATION OF THE HIGH UINTAS SPECIAL MANAGEMENT AREA.**

- (a) ADMINISTRATION .—

(1) IN GENERAL .—The Secretary of Agriculture shall administer the High Uintas Special Management Area in accordance with—

- (a) the National Forest Management Act of 1976 (16 U.S.C. 1600 et seq.);
- (b) this title; and
- (c) other applicable laws.

- (b) MANAGEMENT PLAN. –

(1) PLAN REQUIRED- Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of each watershed management area.

(2) RECOMMENDATIONS AND CONSULTATION- The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

(3) USES- The Secretary of the Interior shall allow only such uses of the special management area that would further the purposes outlined in subsection 401(a) of this Title and in consultation and coordination with the Public Lands Initiative



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Resource Advisory Councils established under Division C of this Act. Other uses of the special management areas shall:

- (A) maintain the presently existing wilderness character of the special management area.
- (B) allow for non motorized recreational opportunities to occur within the Area including skiing, biking, hiking, fishing, hunting, horseback riding, snowshoeing, and camping;
- (C) allow for the continued use and access of Off-highway vehicle winter vehicles including snowmobiles
- (D) prohibit mineral development;
- (E) prohibit new permanent road construction; and
- (F) prohibit commercial timber harvesting.

#### **SEC. 404. HIGH UINTAS SPECIAL MANAGEMENT AREA GENERAL PROVISIONS.**

(a) **WITHDRAWALS-**

(1) Subject to valid existing rights, all federal land within the High Uintas Special Management Area established under sections 401, including any land or interest in land that is acquired by the United States within the conservation area after the date of enactment of this Act, is withdrawn from--

- (1) entry, appropriation or disposal under the public land laws;
- (2) location, entry, and patent under the mining laws; and
- (3) operation of the mineral leasing, mineral materials, and geothermal leasing laws.

(b) **FIRE, INSECTS, AND DISEASE .—** In accordance with this title, the Secretary of the Agriculture may take such measures in the High Uintas Special Management Area as are necessary for the control of fire, insects, and diseases (including, as the Secretary determines to be appropriate, the coordination of the activities with a state or local agency).

(c) **WILDLAND FIRE OPERATIONS. —** Nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment) or affects the authority of the Secretary of Agriculture to authorize mechanical thinning of trees or underbrush to protect or improve water quality or to maintain or restore the characteristics of ecosystem composition and structure.

(d) **LIVESTOCK .—**

(1) **IN GENERAL .—** Within the High Uintas Special Management Area the grazing of livestock in which grazing is established before the date of enactment of this Act shall continue in accordance with the grazing permit that existed on January 1, 2016, subject to reasonable regulations as prescribed by the Secretary.

(2) PROTECTION OF EXISTING USES. Existing livestock grazing shall continue, to the greatest extent practicable, in accordance with the following guidelines:

(A) there shall be no curtailments of grazing in the areas designated by this title simply because an area is, or has been designated by this title, nor should designations be used as an excuse by administrators to slowly "phase out" grazing.

B) the number and type of livestock permitted to graze in areas designated by this title shall continue at stocking levels prescribed in the grazing permit in effect at the time an area is designated to the greatest extent practicable.

C) the maintenance of pre-established facilities existing in an area prior to its classification as designated by this title (including fences, line cabins, water wells and pipelines, stock tanks and ponds, etc.), shall continue. Such maintenance includes the use of Off-highway vehicle or mechanized tools and equipment.

D) the construction of new improvements or replacement of deteriorated facilities in areas designated by this title is permissible if in accordance with guidelines and management plans governing the area.

E) the use of Off-highway vehicle equipment for emergency purposes such as rescuing sick animals or the placement of feed in emergency situations is permissible.

F) Access to historic and traditional water sources for the purpose of supporting livestock shall be maintained.

G) the trailing and movement of domestic livestock where permitted prior to the enactment of this Act shall continue

(4) UTAH DEPARTMENT OF AGRICULTURE

In instances in which historic grazing areas, access, or use is disputed by the permittee, data and information provided by the Utah Department of Agriculture shall be given consideration by the Secretary of the Interior or the Secretary of Agriculture as appropriate to establish historic grazing areas or use.

(e) ADJACENT MANAGEMENT.—

(a) IN GENERAL.—Nothing in this title creates a protective perimeter or buffer zone around the High Uintas Special Management Area.

(b) ACTIVITIES OUTSIDE THE AREA.—The fact that an activity or use on land outside the High Uintas Special Management Area can be seen, heard, or smelled within the Area shall not preclude the activity or use outside the boundary of the Area.

(f) OUTFITTING AND GUIDE ACTIVITIES .— Commercial services (including authorized outfitting and guide activities) within the High Uintas Special Management Area are authorized.

(g) FISH AND WILDLIFE .—Nothing in this title affects the jurisdiction of the State of Utah with respect to the management of fish and wildlife on federal land in the State, including the regulation of hunting, fishing, and trapping and use of helicopters to maintain healthy wildlife populations, within the High Uintas Special Management Area

(h) ACCESS .—The Secretary of the Interior shall provide the owner of State or private property within the boundary of the High Uintas Special Management Area.

(i) WILDLIFE WATER DEVELOPMENT PROJECTS .— Structures and facilities, including future and existing structures and facilities, for wildlife water development projects (including guzzlers) in the High Uintas Special Management Area are authorized.

(j) HUNTING AND FISHING. – Within the Area, hunting and fishing, in areas where hunting and fishing has been allowed on lands and waters owned of managed by the Department of Agriculture before the date of enactment of this Act, shall continue.

(k). – WATER RIGHTS

(a) STATUTORY CONSTRUCTION .—Nothing in this title—

- (1) shall constitute either an express or implied reservation by the United States of any water rights with respect to the High Uintas Special Management Area;
- (2) affects any water rights in the State of Utah existing on the date of enactment of this Act;
- (3) establishes a precedent with regard to any future national conservation areas designations.

(b) UTAH WATER LAW. –The Secretary of the Interior shall follow the procedural and substantive requirements of State law to obtain and hold any water rights not in existence on the date of the enactment of this Act with respect to the High Uintas Special Management Area.

(c) EFFECTS ON STATE WATER RIGHTS. – The Secretary of the Interior and Secretary of Agriculture shall not take any action that adversely affects –

- (1) any water rights granted by the State;
  - (2) the authority of the State in adjudicating water rights;
  - (3) definitions established by the State with respect to the term “beneficial use” or “priority of rights”;
  - (4) terms and conditions for groundwater withdrawal;
  - (5) the use of groundwater resources that are in accordance with State law;
- or
- (6) other rights or obligations of the State as established under State law.

(d) EXISTING WATER INFRASTRUCTURE.—

- (1) Nothing in this Act shall be construed to limit Off-highway vehicle access and road maintenance by local municipalities for those maintenance activities necessary to guarantee the continued viability of water resource facilities that currently exist or which may be necessary in

the future to prevent the degradation of the water supply in the High Uintas Special Management Area.

(2) Nothing in this Act shall be construed to encumber, transfer, impair, or limit any water right, or recognized beneficial use, including access to, development, and use of livestock water rights as defined by State law.

(e) DEFINITION. – The term “water resource facilities” means irrigation and pumping facilities, reservoirs, water conservation works, aqueducts, canals, ditches, pipelines, wells, hydropower projects, transmission and other ancillary facilities, and other water diversion, storage, and carriage structures.

(l) PERMANENT ROAD CONSTRUCTION-

(1) After the date of enactment of this Act, except as necessary for administrative purposes or to respond to an emergency, the Secretary of Agriculture shall not construct any permanent road within the High Uintas Special Management Area

(m) TEMPORARY ROAD CONSTRUCTION -- Except as necessary to meet the minimum requirements for the administration of the High Uintas Special Management Area, and to protect public health and safety, the establishment of temporary roads is prohibited.

(n) USE OF MOTORIZED OR MECHANIZED VEHICLES -- Except as necessary to meet the minimum requirements for the administration of the High Uintas Special Management Area and to protect public health and safety the use of Off-highway vehicle or mechanized vehicles is prohibited.

(o) COMMERCIAL TIMBER HARVESTING – Commercial timber harvesting within the High Uintas Special Management Area is prohibited.

(p) OVERSNOW VEHICLES .—The Secretary of Agriculture shall authorize the use of snowmobiles and other oversnow vehicles within the High Uintas Special Management Area when there is at least six inches of snow coverage.

**SEC. 405. LITTLE WEST FORK BLACKS SPECIAL MANAGEMENT AREA.**

(A) ESTABLISHMENT.—Subject to valid existing rights, the approximately 8,231.25 acres of the Wasatch Cache National Forest in Summit County, Utah as generally depicted on the map entitled “Utah PLI Little West Fork Blacks Special Management Area Map” and dated \_\_\_\_\_.

(B) MAP AND LEGAL DESCRIPTION. –

(1) IN GENERAL. – Two years after the date of enactment of this Act, the Secretary of Agriculture shall file a map and legal description of the Little West Fork Blacks Special Management Area with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources and the Committee on Agriculture, Nutrition, and Forestry of the Senate.

(2) EFFECT. – The map and legal description prepared under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary of Agriculture may correct minor errors in the map or legal description.

(3) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the United States Forest Service.

**SEC. 406. ADMINISTRATION OF LITTLE WEST FORK BLACKS SPECIAL MANAGEMENT AREA.**

(a) PURPOSE .— Little West Fork Blacks Special Management Area is to manage, maintain, and restore watershed and ecosystem function and aquatic habitat within the Area.

(b) ADMINISTRATION .—

(A) IN GENERAL .—The Secretary of Agriculture shall administer the Little West Fork Blacks Special Management Area

- (i) in a manner that promotes, protects, and manages the resources of the Little West Fork Blacks Special Management Area described in subsection (a); and
- (ii) in accordance with—

- (I) the National Forest Management Act of 1976 (16 U.S.C. 1600 et seq.);
- (II) this Act; and
- (III) other applicable laws.

(c) MANAGEMENT PLAN .—

(1) PLAN REQUIRED- Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of each watershed management area.

(2) RECOMMENDATIONS AND CONSULTATION- The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

(3) USES- The Secretary of the Interior shall allow only such uses of the special management area that would further the purposes outlined in subsection 406(a) of this Title and in consultation and coordination with the Public Lands Initiative Resource Advisory Councils established under Division C of this Act. Other uses of the special management areas shall:

(A) include skiing, biking, hiking, fishing, hunting, horseback riding, snowmobiling, motorcycle riding, off-highway vehicle use, snowshoeing, and camping.

(B) allow for reintroduction of flora (land and aquatic), bird, fish and animal fauna in special management areas;

(C) restore watershed and re-establish ecosystem health in areas damaged by threatened by insects, or disease;

(D) restore balance of ecosystem damaged or threatened by overpopulation of overpopulation of any plant, aquatic or animal species.

(E) Allow fuel reduction and forest health treatment to restore watershed and ecosystem function, reduce hazardous fuels, and to protect property in the wildland urban interface.

**SEC. 407 LITTLE WEST FORK BLACKS SPECIAL MANAGEMENT AREA  
GENERAL PROVISIONS.**

(a) OFF-HIGHWAY VEHICLE VEHICLES.—

(1) IN GENERAL- Except in cases in which Off-highway vehicle vehicles and non-mechanized vehicles are needed for administrative purposes or to respond to an emergency, the use of Off-highway vehicle vehicles shall be permitted only on designated routes within the Little West Fork Blacks Special Management Areas.

(2) MANAGEMENT-

(A) IN GENERAL- The Secretary of Agriculture shall manage existing designated routes in a manner that--

(i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized on January 1, 2016;

(ii) minimizes conflict with sensitive habitat or cultural or historical resources;  
and

(iii) does not interfere with private property or water rights.

(B) CLOSURE OR REROUTING.

(i) IN GENERAL- A designated route may be closed or rerouted, if the Secretary of Agriculture, in consultation with the State, or relevant local government within the State, subject to subparagraph (C), determines that--

(I) the designated route is damaging cultural resources or historical resources;

(II) temporary closure of the designated route is necessary to repair the designated route or protect public safety.

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- (III) modification of the designated route would not significantly affect access within the conservation area.
- (IV) (IV) all other options, other than a temporary closure or rerouting, have been exhausted.
- (V) an alternative route has been provided, which can include routes previously closed.

(C) NOTICE- The Secretary of Agriculture shall provide information to the public regarding any designated routes that are open, have been rerouted, or are temporarily closed through--

- (i) use of appropriate signage within the Special Management Areas.;
- (ii) use of the internet and web resources.

(b) NO EFFECT ON NON-FEDERAL LAND OR INTERESTS IN NON-FEDERAL LAND- Nothing in this title affects ownership, management, or other rights relating to non-federal land or interests in non-federal land.

(c) PERMANENT ROAD CONSTRUCTION- Except as necessary for administrative purposes or to respond to an emergency, the Secretary of Agriculture shall not construct any permanent road within the Special Management Areas after the date of enactment of this Act.

(d) TEMPORARY ROAD CONSTRUCTION. – Temporary road construction shall be permitted to fulfill the purposes of the area, including for fuel reduction and forest health management treatments, including prescribed burns.

(e) OVERSNOW VEHICLES .—The Secretary of Agriculture shall authorize the use of snowmobiles and other oversnow vehicles within the Special Management Areas when there is at least six inches of snow coverage.

(f) FIRE, INSECTS, AND DISEASE .— In accordance with this title, the Secretary of Agriculture may—

- (A) carry out measures to manage wildland fire and treat hazardous fuels, insects, and diseases in the Special Management Areas; and
- (B) coordinate those measures with the appropriate State or local agency.

(h) WILDLAND FIRE OPERATIONS. – Consistent with the purposes of this Title, nothing in this title precludes the Secretary of Agriculture from authorizing a Federal, State, or local agency from conducting pre-suppression and suppression. wildfire management operations (including operations using aircraft or mechanized equipment

(i) LIVESTOCK GRAZING .—

- (1) IN GENERAL .—Within the Special Management Areas, the grazing of livestock in which grazing is established before the date of enactment of this Act

shall continue in accordance with the grazing permit that existed on January 1, 2016, subject to reasonable regulations as prescribed by the Secretary.

(2) PROTECTION OF EXISTING USES. Existing livestock grazing shall continue, to the greatest extent practicable, in accordance with the following guidelines:

(A) there shall be no curtailments of grazing in the areas designated by this title simply because an area is, or has been designated by this title, nor should designations be used as an excuse by administrators to slowly "phase out" grazing.

B) the number and type of livestock permitted to graze in areas designated by this title shall continue at stocking levels prescribed in the grazing permit in effect at the time an area is designated to the greatest extent practicable.

C) the maintenance of pre-established facilities existing in an area prior to its classification as designated by this title (including fences, line cabins, water wells and pipelines, stock tanks and ponds, etc.), shall continue. Such maintenance includes the use of Off-highway vehicle or mechanized tools and equipment.

D) the construction of new improvements or replacement of deteriorated facilities in areas designated by this title is permissible if in accordance with guidelines and management plans governing the area.

E) the use of Off-highway vehicle equipment for emergency purposes such as rescuing sick animals or the placement of feed in emergency situations is permissible.

F) Access to historic and traditional water sources for the purpose of supporting livestock shall be maintained.

G) the trailing and movement of domestic livestock where permitted prior to the enactment of this Act shall continue.

### (3) UTAH DEPARTMENT OF AGRICULTURE

In instances in which historic grazing locations, access, or use is disputed by the permittee, data and information provided by the Utah Department of Agriculture shall be given consideration by the Secretary of Agriculture to establish historic access, locations, or use.

(j) EXISTING EASEMENTS AND RIGHTS-OF-WAY. – Nothing in this Act precludes the Secretary of Agriculture from renewing easements or rights-of-way in existence as of the date of enactment of this Act, in accordance with this Act and existing law.

### (k) ADJACENT MANAGEMENT.—

(a) IN GENERAL.—Nothing in this title creates a protective perimeter or buffer zone around the Little West Fork Blacks Special Management Area designated by this section.

(b) ACTIVITIES OUTSIDE SPECIAL MANAGEMENT AREA.—The fact that an activity or use on land outside the Little West Fork Blacks Special Management Area can be seen, heard, or smelled within the Little West Fork Blacks Special Management Area



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shall not preclude the activity or use outside the boundary of Little West Fork Blacks Special Management Area

(l) **OUTFITTING AND GUIDE ACTIVITIES** .— As permitted as of January 1, 2016 Commercial services (including authorized outfitting and guide activities) within the Little West Fork Blacks Special Management Area are authorized

(m) **FISH AND WILDLIFE** .—Nothing in this title affects the jurisdiction of the State of Utah with respect to the management of fish and wildlife on federal land in the State, including the regulation of hunting, fishing, and trapping within the Little West Fork Blacks Special Management Area.

(n) **ACCESS** .—Consistent with the purposes of the Title, and as authorized as of the date of enactment of this Title, The Secretary of Agriculture shall provide the owner of State or private property within the boundary of the Little West Fork Blacks Special Management Area access to the owner’s property.

(o) **HUNTING AND FISHING**. – Within the Little West Fork Blacks Special Management Area where hunting and fishing on lands and waters owned or managed by the Department of the Interior or Department of Agriculture was allowed before the date of enactment of this Act, shall continue.

(p) **WATER RIGHTS**. –

(a) **STATUTORY CONSTRUCTION** .—Nothing in this title—

(1) shall constitute either an express or implied reservation by the United States of any water rights with respect to the Special Management Areas designated by section 301;

(2) affects any water rights in the State of Utah;

(3) establishes a precedent with regard to any future Special Management Areas designations.

(b) **UTAH WATER LAW**. –The Secretary of Agriculture shall follow the procedural and substantive requirements of State law to obtain and hold any water rights not in existence on the date of the enactment of this Act with respect to the Special Management Areas.

(c) **EFFECTS ON STATE WATER RIGHTS**. – The Secretary of the Interior and Secretary of Agriculture shall not take any action that adversely affects –

(1) any water rights granted by the State;

(2) the authority of the State in adjudicating water rights;

(3) definitions established by the State with respect to the term “beneficial use” or

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“priority of rights”;

(4) terms and conditions for groundwater withdrawal;

(5) the use of groundwater resources that are in accordance with State law; or

(6) other rights or obligations of the State as established under State law.

(d) EXISTING WATER INFRASTRUCTURE.—

(1) Nothing in this title shall be construed to limit Off-highway vehicle access and road maintenance by local municipalities for those maintenance activities necessary to guarantee the continued viability of water resource facilities that currently exist or which may be necessary in the future to prevent the degradation of the water supply in the Little West Fork Blacks Special Management Area designated by this section.

(2) Nothing in this Act shall be construed to encumber, transfer, impair, or limit any water right, or recognized beneficial use, including access to, development, and use of livestock water rights as defined by State law.

(e) DEFINITION. – The term “water resource facilities” means irrigation and pumping facilities, reservoirs, water conservation works, aqueducts, canals, ditches, pipelines, wells, hydropower projects, transmission and other ancillary facilities, and other water diversion, storage, and carriage structures.

(q) VEGETATION MANAGEMENT.—Consistent with the purposes of the Little West Fork Blacks Special Management Area, nothing in this title prevents the Secretary of Agriculture from conducting vegetation management projects within the Little West Fork Blacks Special Management Area.

(r) COMMERCIAL TIMBER HARVEST.—Consistent with the purposes of the Little West Fork Blacks Special Management Area within the Little West Fork Blacks Special Management Area, commercial timber harvest is not prohibited if the primary purpose is to restore or improve forest health and watershed function or to further the purposes described in this title

(s) WITHDRAWAL .—

(1) IN GENERAL .—Subject to valid rights in existence on the date of enactment of this title ,the Federal land within the Little West Fork Blacks Special Management Area designated by this section are withdrawn from—

(a) all forms of entry, appropriation, and disposal under the federal land laws;

(b) location, entry, and patent under the mining laws; and

(c) operation of the mineral leasing, mineral materials, and geothermal leasing laws.

(t) ACCESS.—Nothing in this section prohibits the Secretary from authorizing reasonable access to private land inside or adjacent to the Little West Fork Blacks Special

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Management Area including the construction of permanent roads within the Little West Fork Blacks Special Management Area

**SEC. 407. – DESOLATION CANYON, NINE MILE CANYON, AND WHITE RIVER SPECIAL MANAGEMENT AREAS**

(a) ESTABLISHMENT.—Subject to valid existing rights, the following areas in the State are hereby established as Special Management Areas:

(1) WHITE RIVER.—Certain federal land, comprising approximately 16,785 acres administered by the Bureau of Land Management in Uintah County, Utah as generally depicted on the map entitled Utah PLI Special Management Area Map and dated \_\_\_\_\_, to be known as the “White River Special Management Area.”

(2) NINE MILE CANYON.—Certain federal land, comprising approximately 41,301 acres administered by the Bureau of Land Management in Carbon County and Duchesne County, Utah, as generally depicted on the map entitled Utah PLI Special Management Area Map and dated \_\_\_\_\_, to be known as the “Nine Mile Canyon Special Management Area.”

(3) DESOLATION CANYON.—Certain federal land, comprising approximately 8,770 acres administered by the Bureau of Land Management in Carbon County, Utah, as generally depicted on the map entitled Utah PLI Special Management Area Map and dated \_\_\_\_\_, to be known as the “Desolation Canyon Special Management Area.”

(b) PURPOSES—The purposes of the Desolation Canyon, Nine Mile Canyon, and White River Special Management Areas established under 407(a) in a manner that:

- 1) Protects, conserves, and enhances the unique and nationally important historic, cultural, scientific, scenic, recreational, archaeological, natural, and educational resources of the Conservation Area;
- 2) Maintains and enhances cooperative and innovative management practices between resource managers, private landowners, and the public in the Conservation Area; and
- 3) Recognizes and maintains to the extent practicable historic uses of the Conservation Area.

**SEC. 408. – DESOLATION CANYON, NINE MILE CANYON, AND WHITE RIVER SPECIAL MANAGEMENT AREA MAP AND LEGAL DESCRIPTION.**

(1) IN GENERAL. – Not later than two years after the date of enactment of this Act, the Secretary of Agriculture shall file a map and legal description of the Desolation Canyon, Nine Mile Canyon, and White River Special Management Areas with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

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(2) EFFECT. – The map and legal description prepared under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary of Agriculture may correct minor errors in the map or legal description.

(3) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the United States Forest Service.

**SEC. 409. – ADMINISTRATION OF THE DESOLATION CANYON, NINE MILE CANYON, AND WHITE RIVER SPECIAL MANAGEMENT AREAS.**

(a) MANAGEMENT PLAN. –

(1) PLAN REQUIRED- Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of each watershed management area.

(2) RECOMMENDATIONS AND CONSULTATION- The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

**SEC. 410. DESOLATION CANYON, NINE MILE CANYON, AND WHITE RIVER SPECIAL MANAGEMENT AREA GENERAL PROVISIONS**

(a) The general provisions of Title II section 204 shall apply to the Special Management Areas.

(b) EXCEPTION.—Notwithstanding the withdrawal of 204(a) for the Desolation Canyon Special Management Area, White River Special Management Area, and the Nine Mile Canyon Special Management Area, the Secretary of the Interior may lease oil and gas resources in accordance with the Mineral Leasing Act (30 U.S.C. 181 et seq.) subject to the following conditions:

(A) the area may be accessed only by directional drilling from a lease held on the date of enactment of this Act on land that is adjacent to, and outside of, the conservation area.

(B) the lease shall prohibit surface occupancy and surface disturbance for any mineral activities within the national conservation areas.

(c) NINE MILE CANYON ADDITIONAL PROVISIONS. –

1. Energy development, including access needs for energy development, within the Nine Mile Canyon Special Management Area shall be allowed under the terms of the West Tavaputs Plateau Project Final Environmental Impact Statement and Record of Decision of July 2, 2010.

2. The management plan required under Sec. 409 of this Title for the Nine Mile Canyon Special Management Area shall be developed jointly between Carbon and Duchesne County Advisory Councils.

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3. Upon enactment of this Title, the current ACEC designation shall be permanently removed from Nine Mile Canyon.

## **Title V - ARCHES NATIONAL PARK EXPANSION**

### **SEC. 501. ARCHES NATIONAL PARK EXPANSION**

(A) Section 1 of Public Law 92-155 is amended—

(1) by inserting the following after paragraph (2)—

“(3) Effective on the date of enactment of the Utah Public Lands Initiative Act, the boundary of the park shall include the area consisting of approximately 19,255 acres and depicted as Arches Expansion on the map entitled “Utah PLI Park and Monument Map” and dated \_\_\_\_\_.”;

(2) by redesignating paragraph (3) as paragraph (4); and

(3) in paragraph (4), as so designated by paragraph (2) of this provision, by striking “(1) and (2)” and inserting instead “(1), (2) and (3)”.

### **SEC. 502. – EXISTING TRAILS**

(a) The public shall have continued access Off-highway vehicle access to the Klondike Bluffs, Dry Mesa, Winter Camp Ridge (to the overlook of Salt Wash), The Highlands (pipeline to the overlook of Salt Wash), and The Eagle's Nest trails, subject to reasonable regulations as prescribed by the Secretary.

(b) The National Park Service shall enter into a cooperative agreement with Ride with Respect that provides for continued public access of the trails outlined in this section, maintains the conservation qualities of the Park, and provides a framework for maintenance cost sharing.

(c) Where practicable, mountain biking shall be permitted and promoted within the trails outlined in subsection (a).

### **SEC. 503 – TRANSPORTATION PLANNING**

(a) The National Park Service shall work to create a northern entrance, which is being facilitated by the expansion outlined in 501(a), that enhances the visitor experience and alleviates traffic congestion at the current Park entrance.

## **Title VI - JURASSIC NATIONAL MONUMENT**

### **SEC. 601. JURASSIC NATIONAL MONUMENT**

(a) PURPOSES. - To conserve, protect, interpret, and enhance for the benefit of present and future generations the unique and nationally important paleontological, scientific, educational, and recreational resources, there is established in Emery County, Utah,

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subject to valid existing rights, the Jurassic National Monument (referred to in this title as the “Monument”).

(b) BOUNDARIES .—The Monument shall consist of approximately 867 acres of federal land in Emery County, Utah as generally depicted on the map entitled “Utah PLI Park and Monument Map” and dated \_\_\_\_\_

(c) MAP ; LEGAL DESCRIPTION .—

(1) IN GENERAL. – Two years after the date of enactment of this Act, the Secretary of the Interior shall file a map and legal description of the Special Management Areas with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(2) EFFECT. – The map and legal description prepared under paragraph (b) shall have the same force and effect as if included in this title, except that the Secretary of the Interior may correct minor errors in the map or legal description.

(3) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the Bureau of Land Management.

(d) ACQUISITION OF LAND .—

(1) IN GENERAL. – The Secretary of the Interior may acquire land or interests in land within the boundaries of the Monument only by donation, exchange, or purchase from a willing seller.

(2) LAND EXCHANGE. – At the request of the State, not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall complete exchanges for State land located within the boundaries of the Monument designated by this title.

(3) NO CONDEMNATION. – Within the areas designated by this title the use of eminent domain or condemnation shall be prohibited.

(e) WITHDRAWALS .—Subject to valid existing rights, any land within the Monument or any land or interest in land that is acquired by the United States for inclusion in the Monument after the date of enactment of this section is withdrawn from—

(i) entry, appropriation, or disposal under the federal land laws;

(ii) location, entry, and patent under the mining laws; and

(iii) operation of the mineral leasing laws, geothermal leasing laws, and minerals materials laws.

(f) MANAGEMENT PLAN. –

(1) PLAN REQUIRED- Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of the national monument.

(2) RECOMMENDATIONS AND CONSULTATION- The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

(c) USES- The Secretary of the Interior shall allow only such uses of the national monument that would further the purposes outlined in subsection (a) of this section and in consultation and coordination with the Public Lands Initiative Resource Advisory

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Councils established under Division C of this Act. Other uses of the national monument may:

- (A) address transportation issues to and from the Monument; and
- (B) codify the current Special Recreation Management Area boundary.

(g) **ADMINISTRATION** .—The Secretary of the Interior shall administer the Monument in accordance with---

- (1) the Management Plan; and
- (2) any other applicable laws.

(h) **ADJACENT MANAGEMENT**.—

(a) **IN GENERAL**.—Nothing in this title creates a protective perimeter or buffer zone around a Monument designated by this Act.

(b) **ACTIVITIES OUTSIDE MONUMENT**.—The fact that an activity or use on land outside the Monument can be seen, heard, or smelled within the Monument shall not preclude the activity or use outside the boundary of the Monument.

## **TITLE VII - WILD AND SCENIC RIVERS**

### **SEC. 701 - WILD AND SCENIC RIVERS**

(a) Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1274(a)) is amended by adding at the end the following:

“(213) **COLORADO RIVER**. The following segments in the State of Utah, to be administered by the Secretary of the Interior as follows:

- (A) The approximately 14.4 mile segment from Westwater Canyon from River Mile 125 to River Mile 112 as a wild river.
- (B) The approximately 8 mile segment from River Mile 112 to Cisco Wash as a scenic river.
- (C) The approximately 33.1 mile segment from the Confluence of the Colorado River with the Dolores River to River Mile 49 near Potash as a recreational river.
- (D) The approximately 5.7 mile segment from River Mile 44.5 to River mile 38.5 as a scenic river.
- (E) The approximately 3.7 mile segment from River Mile 37.5 to River Mile 34 at the Canyonlands National Park boundary as a scenic river.
- (F) The approximately 5.5 mile river segment from River Mile 44 to River Mile 38.5 as a scenic river.
- (G) The approximately 6.5 river segment of the Colorado River from River Mile 37.5 to the boundary of Canyonlands National Park at River Mile 31 as a scenic river.

“(214) **DOLORES RIVER**. The following segments in the State of Utah, to be administered by the Secretary of the Interior as follows:

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- (A) The approximately 5.9 mile segment from the Colorado State line to Fisher Creek as a recreational river.
- (B) The approximately 6.3 mile segment from Fisher Creek to Bridge Canyon as a scenic river
- (C) The approximately 9.9 mile segment from Bridge Canyon to the Colorado River as a recreational river.

“(215) GREEN RIVER. The following segments in the State of Utah, to be administered by the Secretary of the Interior as follows:

- (A) The approximately 50 mile river segment from River Mile 97 at the confluence with the San Rafael River to Canyonlands National Park Boundary as a scenic river.
- (B) The approximately 44.5 miles from Nine Mile Creek to Chandler Canyon as a wild river
- (C) The approximately 8 miles from Chandler Creek to Florence Creek as a scenic river.
- (D) The approximately 19 miles from Florence Creek to the Nefertiti Boat Ramp as a wild river.
- (E) The approximately 62 miles from the northern border of the Desolation Canyon Wilderness, designated under this Act, in Uintah County, Utah to the Carbon County line as a recreation river.

“(216) DARK CANYON, UTAH. The approximately 18.7 miles of the Dark Canyon River from the forest boundary to the Lake Powell below Young’s Canyon to be administered by the Secretary of the Interior as a wild river.

**(b) ADJACENT MANAGEMENT.—**

(a) **IN GENERAL.—**Nothing in this title creates a protective perimeter or buffer zone around a wild and scenic river designated by this title.

(b) **ACTIVITIES OUTSIDE WILD AND SCENIC RIVER.—**The fact that an activity or use on land outside a wild and scenic river designated under this section can be seen, heard, or smelled within the wild and scenic river shall not preclude the activity or use outside the boundary of the wild and scenic river.

(c) The Secretary of the Interior may acquire land or interest in land within the boundaries of the wild and scenic river areas designated by this title only by donation, exchange, or purchase from a willing seller.”

(d) **NO CONDEMNATION. –** Within the areas designated by this title the use of eminent domain or condemnation shall be prohibited.

(e) **OUTFITTING AND GUIDE ACTIVITIES.—** Commercial services (including authorized outfitting and guide activities) within the wild and scenic rivers are authorized.

**(f) MAPS AND LEGAL DESCRIPTION**

(1) **IN GENERAL. –** Not later than two years after the date of enactment of this Act, the Secretary of the Interior shall file a map, entitled Utah PLI Wild and Scenic Rivers, and legal description of the rivers with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.



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(2) EFFECT. – The map and legal description prepared under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary of the Interior may correct minor errors in the map or legal description.

(3) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the United States Forest Service.

## **TITLE VIII – ASHLEY KARST NATIONAL GEOLOGIC AND RECREATION AREA**

### **SEC. 801. ASHLEY KARST NATIONAL GEOLOGIC AND RECREATION AREA.**

(a) ESTABLISHMENT.—Subject to valid existing rights, the approximately 110,839 acres generally depicted on the map entitled Utah PLI Special Management Area Map and dated \_\_\_\_\_, are hereby established as the “Ashley Karst National Geologic and Recreation Area”.

(b) PURPOSES—The purposes of the Ashley Karst National Geologic and Recreation Area (referred to in this title as the Area) are to provide recreational opportunities, protection and management of water resources, utilize commercial forest products, and withdraw minerals from development.

### **SEC. 802. – MAP AND LEGAL DESCRIPTION.**

(1) IN GENERAL. – Not later than two years after the date of enactment of this Act, the Secretary of Agriculture shall file a map and legal description of the Area with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(2) EFFECT. – The map and legal description prepared under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary of Agriculture may correct minor errors in the map or legal description.

(3) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the United States Forest Service.

### **SEC. 803. ADMINISTRATION.**

(a) ADMINISTRATION .—

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(1) IN GENERAL .—The Secretary of Agriculture shall administer the Area in accordance with—

- (a) the National Forest Management Act of 1976 (16 U.S.C. 1600 et seq.);
- (b) this title; and
- (c) other applicable laws.

(2) MANAGEMENT PLAN .—

(a) PLAN REQUIRED- Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of the Area.

(b) RECOMMENDATIONS AND CONSULTATION- The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

(c) USES- The Secretary of Agriculture shall allow only such uses of the Area that would further the purposes outlined in subsection 801(b) of this section and in consultation and coordination with the Public Lands Initiative Resource Advisory Councils established under Division C of this Act. Other uses of the Area shall:

(A) provide for recreational opportunities to occur within the Area including skiing, biking, hiking, fishing, hunting, horseback riding, snowmobiling, designated trails for motorcycle riding and off-highway vehicle use, snowshoeing, camping, and other recreational activities consistent with this title;

(C) provide for appropriate forest management, utilizing commercial harvesting for hazardous fuels reduction, wildland fire control, control of insects and disease, and watershed health;

(D) prohibit mineral development; and

(E) promote the long-term protection and management of the water resources and underground karst system; and

(F) comply with Sections 801 and 804 .

## **SEC. 804 GENERAL PROVISIONS.**

(a) OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—

(1) IN GENERAL- The use of Off-highway vehicle and mechanized vehicles shall be permitted within the Area.

(2) MANAGEMENT-

(A) IN GENERAL- The Secretary of Agriculture shall designate existing routes in a manner that--

(i) utilizes Forest Service roads existing as of January 1, 2016 and also new roads authorized by this Act;

(ii) minimizes conflict with sensitive habitat or cultural or historical resources;

(iii) does not interfere with private property or water rights.

(B) CLOSURE OR REROUTING-

(i) IN GENERAL- A designated route may be temporarily closed or rerouted, for a period not to exceed two years, if the Secretary of Agriculture, in consultation with the State, or relevant local government within the State determines that--

(I) the designated route is damaging cultural resources or historical resources;

(II) temporary closure of the designated route is necessary to repair the designated route or protect public safety.

(III) modification of the designated route would not significantly affect access within the conservation area.

(IV) all other options, other than a temporary closure or rerouting, have been exhausted.

(V) an alternative route has been provided.

(C) NOTICE- The Secretary of Agriculture shall provide information to the public regarding any designated routes that are open, have been rerouted, or are temporarily closed through--

(i) use of appropriate signage within the Area; and

(ii) use of the internet and web resources.

(3) PRIORITY ROUTES – Marsh Peak South Road and South Fork Road, as depicted on the Utah PLI Special Management Area Map, shall be open for Off-highway vehicle use. Administrative Access shall be allowed for the Forest Service, State and local governments, and water companies to access Whiterocks Lake for general and emergency maintenance purposes.

(b) TRAIL CONSTRUCTION.—

(1) FEASIBILITY STUDY.—Not later than 180 days after the date of enactment of this Act, the Secretary of Agriculture shall study the feasibility and public interest of constructing new routes as needed to further mechanized and hiking recreational opportunities.

(2) CONSTRUCTION.—

(A) CONSTRUCTION AUTHORIZED.— If the Secretary of Agriculture determines that the construction of a route is feasible the Secretary of Agriculture may provide for the construction of the route.

(B) USE OF VOLUNTEER SERVICES AND CONTRIBUTIONS.—A route may be constructed under this subsection through the acceptance of volunteer services and contributions from non-federal sources.

(c) NO EFFECT ON NON-FEDERAL LAND OR INTERESTS IN NON-FEDERAL LAND- Nothing in this title affects ownership, management, or other rights relating to non-federal land or interests in non-federal land located within the Area.

(d) OVERSNOW VEHICLES .—The Secretary of Agriculture shall authorize the use of snowmobiles and other oversnow vehicles within the Area when there is at least six inches of snow coverage.

(e) FIRE, INSECTS, AND DISEASE .— In accordance with this title, the Secretary of Agriculture may—

(1) carry out any measures to manage wildland fire and treat hazardous fuels, insects, and diseases in the Area; and

(2) coordinate those measures with the appropriate State or local agency.

(f) WILDLAND FIRE OPERATIONS. – Nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations

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(including operations using aircraft or mechanized equipment) or interfere with the authority of the Secretary of Agriculture to authorize mechanical thinning of trees or underbrush to prevent or control the spread of wildfires or the use of mechanized equipment for wildfire pre-suppression and suppression.

(g) LIVESTOCK GRAZING.—

(1) IN GENERAL.—Within the Area, Within the Area, the grazing of livestock in which grazing is established before the date of enactment of this Act shall continue in accordance with the grazing permit that existed on January 1, 2016, subject to reasonable regulations as prescribed by the Secretary.

(2) PROTECTION OF EXISTING USES. Existing livestock grazing shall continue, to the greatest extent practicable, in accordance with the following guidelines:

(A) there shall be no curtailments of grazing in the areas designated by this title simply because an area is, or has been designated by this title, nor should designations be used as an excuse by administrators to slowly "phase out" grazing.

B) the number and type of livestock permitted to graze in areas designated by this title shall continue at stocking levels prescribed in the grazing permit in effect at the time an area is designated to the greatest extent practicable.

C) the maintenance of pre-established facilities existing in an area prior to its classification as designated by this title (including fences, line cabins, water wells and pipelines, stock tanks and ponds, etc.), shall continue. Such maintenance includes the use of Off-highway vehicle or mechanized tools and equipment.

D) the construction of new improvements or replacement of deteriorated facilities in areas designated by this title is permissible if in accordance with guidelines and management plans governing the area.

E) the use of Off-highway vehicle equipment for emergency purposes such as rescuing sick animals or the placement of feed in emergency situations is permissible.

F) Access to historic and traditional water sources for the purpose of supporting livestock shall be maintained.

G) the trailing and movement of domestic livestock where permitted prior to the enactment of this Act shall continue

(3) UTAH DEPARTMENT OF AGRICULTURE - In instances in which historic grazing locations, access, or use is disputed by the permittee, data and information provided by the Utah Department of Agriculture shall be given consideration by the Secretary of Agriculture to establish historic access, locations, or use.

(h) EXISTING EASEMENTS AND RIGHTS-OF-WAY. – Nothing in this title precludes the Secretary of Agriculture from renewing easements or rights-of-way

in existence on the date of enactment of this Act, in accordance with this Act and existing law.

(i) ADJACENT MANAGEMENT.—

(a) IN GENERAL.—Nothing in this title creates a protective perimeter or buffer zone around the Area designated by section 801.

(b) ACTIVITIES OUTSIDE AREA.—The fact that an activity or use on land outside the Area can be seen, heard, or smelled within the Area shall not preclude the activity or use outside the boundary of the Area.

(j) OUTFITTING AND GUIDE ACTIVITIES .— Commercial services (including authorized outfitting and guide activities) within the Area are authorized.

(k) FISH AND WILDLIFE .—Nothing in this title affects the jurisdiction of the State of Utah with respect to the management of fish and wildlife on federal land in the State, including the regulation of hunting, fishing, and trapping within the Area.

(l) ACCESS .—The Secretary of Agriculture shall provide the owner of State or private property within the boundary of the Area access to the property.

(m) WILDLIFE WATER DEVELOPMENT PROJECTS .— Structures and facilities, including future and existing structures and facilities, for wildlife water development projects (including guzzlers) in the Area are authorized

(n) HUNTING AND FISHING. –

Within the Area in where hunting and fishing on lands and waters owned of managed by the Department of Agriculture was allowed before the date of enactment of this Act, shall continue.

(o) WATER RIGHTS. –

(a) STATUTORY CONSTRUCTION .—Nothing in this title—

(1) shall constitute either an express or implied reservation by the United States of any water rights with respect to the Area designated by section 801;

(2) affects any water rights in the State;

(3) establishes a precedent with regard to any future designations.

(4) shall restrict or prohibit the upstream diversion of water rights held under Utah State law nor shall any claim of resource damages

arise due to the rightful diversion or depletion of streams or rivers affecting the Area.

(b) UTAH WATER LAW. –The Secretary of Agriculture shall follow the procedural and substantive requirements of State law to obtain and hold any water rights not in existence on the date of the enactment of this Act with respect to the Area.

(c) EFFECTS ON STATE WATER RIGHTS. – The Secretary of the Interior and Secretary of Agriculture shall not take any action that adversely affects –

- (1) any water rights granted by the State;
- (2) the authority of the State in adjudicating water rights;
- (3) definitions established by the State with respect to the term “beneficial use” or “priority of rights”;
- (4) terms and conditions for groundwater withdrawal;
- (5) the use of groundwater resources that are in accordance with State law; or
- (6) other rights or obligations of the State as established under State law.

(d) EXISTING WATER INFRASTRUCTURE.—

(1) Nothing in this title shall be construed to limit Off-highway vehicle access and road maintenance by local municipalities for those maintenance activities necessary to guarantee the continued viability of water resource facilities that currently exist or which may be necessary in the future to prevent the degradation of the water supply in the Area designated by section 801.

(2) Nothing in this Act shall be construed to encumber, transfer, impair, or limit any water right, or recognized beneficial use, including access to, development, and use of livestock water rights as defined by State law.

(e) DEFINITION. – The term “water resource facilities” means irrigation and pumping facilities, reservoirs, water conservation works, aqueducts, canals, ditches, pipelines, wells, hydropower projects, transmission and other ancillary facilities, and other water diversion, storage, and carriage structures.

(p) VEGETATION MANAGEMENT.—Nothing in this title prevents the Secretary of Agriculture from conducting vegetation management projects within the Area.

(q) WITHDRAWAL .—

(A) IN GENERAL .—Subject to valid rights in existence on the date of enactment of this Act the federal land within the Area is withdrawn from—

- (i) all forms of entry, appropriation, and disposal under the federal land laws;
- (ii) location, entry, and patent under the mining laws; and
- (iii) operation of the mineral leasing, mineral materials, and geothermal leasing laws.

(r) FEES .— Except for improved campgrounds, within the Area the United States Forest Service is prohibited from the collecting or requiring fees for access or use.

DOI



# Division B – Opportunity

## Title I – School Trust Land Consolidations

(a) FINDINGS.—Congress finds that the land exchange authorized and directed by this Act furthers public objectives referenced in section 206 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1716) including –

- (A) Promoting better management of federal conservation areas by removing inheld state trust land sections;
- (B) Securing Federal ownership and protection of land with significant wildlife, recreational, scenic, cultural and other public values;
- (C) Assisting the State of Utah and local governments in economic development and community expansion through the consolidation of state trust lands in manageable blocks near several Utah communities; and
- (D) Advancing public education through increased opportunity for economic development of Utah school trust lands, in furtherance of the land grants made under the Utah Enabling Act, Act of July 16, 1894 (28 Stat. 107, chapter 138).

(b) PURPOSE – It is the purpose of this title to authorize, direct, facilitate, and expedite the exchange of land between the State of Utah and the United States.

### SEC. 102. DEFINITIONS.

In this Act:

(1) MAPS.—The term “Maps” means the following maps prepared by the Bureau of Land Management:

- (a) Land Conveyances - Carbon County dated [date]
- (b) Land Conveyances – Duchesne County dated [date]
- (c) Land Conveyances - Emery County dated [date]
- (d) Land Conveyances – Grand County dated [date]
- (e) Land Conveyances – San Juan County dated [date]
- (f) Land Conveyances – Uintah County dated [date]

(2) NON-FEDERAL LAND.—The term “non-Federal land” means the lands identified on the Maps as “State Trust Land Proposed for Transfer to United States”, “State Trust Lands – Surface Only Proposed for Transfer to United States” and “State Trust Lands -- Minerals Only Proposed for Transfer to United States” located in Carbon, Duchesne, Emery, Grand, San Juan and Uintah counties, Utah, as generally depicted on the Maps.

(3) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

(4) STATE.—The term “State” means the State of Utah, acting as trustee under the Utah State School and Institutional Trust Lands Management Act (Utah Code Ann. 53C–1–101 et seq) through the Utah School and Institutional Trust Lands Administration.

### SEC. 103. EXCHANGE OF LAND; RESERVATION OF INTERESTS.

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- (a) In General.--If the State offers to convey to the United States title to the non-Federal land, the Secretary shall, subject to the provisions of this title--
- (1) accept the offer; and
  - (2) on receipt of the right, title, and interest of the State in and to the non-Federal land, convey to the State all right, title, and interest of the United States in and to the Federal land.
- (b) Valid Existing Rights.--The exchange authorized under subsection (a) shall be subject to valid existing rights.
- (c) Costs – Costs of the land exchange shall be allocated in accordance with section 206(f)(2)(B) of FLPMA (43 U.S.C. 1716(f)(2)(B)).
- (d) Title Approval.--Title to the Federal land and non-Federal land to be exchanged under this section shall be in a format acceptable to the Secretary and the State.
- (e) Reservation of Interest in Potash.--
- (1) In general.--With respect to Federal land that contains potash resources, the Secretary shall reserve an interest in all potash resources.
  - (2) Extent of interest.--The interest reserved by the United States under paragraph 1 shall consist of--
    - (A) 50 percent of any bonus bid or other payment received by the State as consideration for securing any lease or authorization to develop potash resources;
    - (B) 50 percent of the amount that would have been received by the Federal Government under the royalty rate applicable on July 1, 2015 if the potash resources had been retained in Federal ownership; and
    - (C) 50 percent of any other payment received by the State pursuant to any lease or authorization to develop the potash resources.
  - (3) Upon receipt of any funds from potash leasing and development on lands in which the Secretary has reserved an interest, the State shall pay the Secretary amounts attributable to the reserved interest of the United States in accordance with paragraph (4).
  - (4) Payment.—
    - (A) Any amounts due under paragraph (3) shall be paid by the State to the United States not less than quarterly.
    - (B) The State may deduct an administrative fee of three per cent from all payments due to the United States under paragraph (2).
  - (5) No obligation to lease.--The State shall not be obligated to lease or otherwise develop potash resources in which the United States retains an interest under this subsection.
- (f) Reservation of Wellbore Interest in Oil and Gas
- (1) In general.—The Secretary shall reserve a wellbore interest in each oil and gas well on Federal land that has been determined by the Secretary to be capable of production in paying quantities as of the date of conveyance.
  - (2) Extent of interest.—The wellbore interest reserved to the United States under paragraph (1) shall consist of all royalties attributable to any zones or horizons that are being produced from an oil and gas well located on Federal land as of the date of conveyance.

(3) Upon receipt of any funds attributable to the reserve wellbore interest of the United States, the State shall pay the Secretary all such amounts in accordance with paragraph (4).

(4) Payment.—

(A) Any amounts due under paragraph (2) shall be paid by the State to the United States not less than quarterly.

(B) The State may deduct an administrative fee of three per cent from all payments due to the United States under paragraph (2)

(5) Termination of Reserved Interest.—The reserved wellbore interests of the United States in oil and gas shall automatically terminate on the date that is ten years after the enactment of this Act.

(6) Sharing of Revenue. The United States shall share all revenue received with respect to its reserved wellbore mineral interest in oil and gas with the State of Utah in accordance with 30 U.S.C. 191(a).

(g) Appurtenant Water Rights.--Any conveyance of a parcel of Federal land or non-Federal land under this Act shall include the conveyance of water rights appurtenant to the parcel conveyed.

## **SEC. 104. APPRAISALS**

(a) Equal Value Exchange.—

(1) In general.--The value of the Federal land and non-Federal land to be exchanged under this Act—

(A) shall be equal; or

(B) shall be made equal in accordance with section 5.

(b) Appraisals.--The value of the Federal land and the non-Federal land shall be determined by appraisals conducted by 1 or more independent appraisers retained by the State, with the consent of the Secretary.

(c) Applicable law.--The appraisals conducted under paragraph (1) ---

(A) shall be conducted in accordance with section 206 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1716); and

(b) shall utilize nationally recognized appraisal standards, including, to the extent appropriate, the Uniform Appraisal Standards for Federal Land Acquisitions.

(d) Approval.--The appraisals conducted under paragraph (1) shall be submitted to the Secretary and the State for approval.

(e) Adjustment.--

(1) In general.--If value is attributed to any parcel of Federal land because of the presence of minerals subject to leasing under the Mineral Leasing Act (30 U.S.C. 181 et seq.), the value of the parcel (as otherwise established under this subsection) shall be reduced by the estimated value of the payments that would have been made to the State of Utah from bonuses, rentals, and royalties that the United States would have received if such minerals were leased pursuant to the Mineral Leasing Act (30 U.S.C. 181 et seq.).

(2) Limitation.--An adjustment under subparagraph (A) shall not be considered as a property right of the State.

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(f) Valuation of Lands with Reserved Minerals.--Federal land in which the Secretary reserves an interest under subsections 103(3)3(e) and 103(3)(f) shall be appraised—

(1) without regard to the presence of potash; and

(2) taking into account the reserved wellbore interest of the United States, if any.

(g) Duration.—The appraisals conducted under paragraph (1) shall remain valid until the date of the completion of the exchange authorized under this title.

(h) Availability of appraisals.—

(1) In general.--All final appraisals, appraisal reviews, and determinations of value for land to be exchanged under this section shall be available for public review at the Utah State Office of the Bureau of Land Management at least 30 days before the conveyance of the applicable parcels.

(2) Publication.--The Secretary or the State, as applicable, shall publish in a newspaper of general circulation in Salt Lake County, Utah, a notice that the appraisals are available for public inspection.

(i) Dispute resolution.—

(1) If, by the date that is 90 days after the date of submission of an appraisal for review and approval under this subsection, the Secretary or State do not agree to accept the findings of the appraisals with respect to any parcel of Federal land or non-Federal land, the dispute shall be resolved in accordance with section 206(d)(2) of FLPMA (43 U.S.C. 1716(d)(2)).

(2) If agreement has not been reached with respect to the exchange of an individual parcel of Federal land or non-Federal land, the Secretary and the State may agree to set aside the individual parcel to allow the exchange of the other parcels of Federal land and non-Federal land to proceed.

(j) Conveyance of Parcels in Phases.—

(1) In General.—Notwithstanding that appraisals for all of the parcels of Federal land and non-Federal land may not have been approved, parcels of the Federal land and non-Federal land may be exchanged in phases as may be mutually determined by the Secretary and the State.

(2) Ledger. -- The Secretary and the State may agree to utilize a ledger account to make equal the value of lands conveyed by each party in one or more phases, provided that the overall exchange shall be made equal as provided in section 105.

(3) Authority.— It is the intent of Congress that the Secretary may exercise broad discretionary authority in the processing of the land exchange to expedite the final conveyance of the Federal and non-Federal land.

## **SEC. 105. – EQUALIZATION OF VALUES.**

(a) Surplus of federal land.—

If the value of the Federal land exceeds the value of the non-Federal land, the value of the Federal land and non-Federal land shall be equalized by –

(1) the State conveying to the United States State trust land located within any of the wilderness areas or national conservation areas in Washington County, Utah, established under subtitle O of title I of the Omnibus Public Land Management Act of 2009 (Public Law 111–11; 123 Stat. 1075) that has an appraised value

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- equal to the difference between the value of the Federal land; and the value of the non-Federal land;
  - (2) the reduction in acreage of the Federal land as the State and the Secretary may agree;
  - (3) the State making a cash payment to the United States; or
  - (4) any combination of the methods described in paragraphs (1)-(3) as the State and the Secretary may mutually agree.
- (b) Surplus of non-federal land.—If the value of the non-Federal land exceeds the value of the Federal land, the value of the Federal land and the non-Federal land shall be equalized by –
- (1) the reduction in acreage of the non-Federal land as the State and the Secretary may mutually agree.

## **SEC. 106. WITHDRAWAL OF FEDERAL LANDS PRIOR TO EXCHANGE**

Subject to valid existing rights, during the period beginning on the date of enactment of this Act and ending on the earlier of the date that the Federal land is removed from the exchange or the date on which the Federal land is conveyed, the Federal land is withdrawn from mineral location, entry or patent under the mining laws, from leasing and entry under the mineral leasing laws, and from mineral material disposal.

## **SEC. 107. NEPA AND FLPMA COMPLIANCE.**

- (1) Public Interest. -- The land exchange authorized and directed by this title is in the public interest.
- (2) Scoping and Analysis. -- Notwithstanding any other law, in preparing an environmental assessment or environmental impact statement required under section 102 of the National Environmental Policy Act of 1969 (42 U.S.C. 4332) with respect to the land exchange contemplated by this Act:
  - (A) the Secretary is not required to identify any actions other than the proposed action and the no action alternative; and
  - (B) the Secretary is not required to analyze the environmental effects of alternative conveyances or actions other than the offer submitted by the State under subsection 103(a).
- (3) Presumption of Plan Adequacy.—Conveyances of Federal land to the State in accordance with this Act are presumed to comply with any land use plan enacted under section 202 of FLPMA (43 U.S.C. 1712).

## **SEC. 108. STATUS AND MANAGEMENT OF LAND AFTER EXCHANGE.**

- (a) ADMINISTRATION OF NON-FEDERAL LAND.—
  - (1) IN GENERAL.—Subject to paragraph (2) and in accordance with section 206(c) of FLPMA (43 U.S.C. 1716(c)), the non-Federal land acquired by the United States under this Act shall become part of, and be managed as part of, the Federal administrative unit or area in which the land is located.
- (b) GRAZING PERMITS.—

(1) **IN GENERAL.**—If land acquired under this Act is subject to a lease, permit, or contract for the grazing of domestic livestock in effect on the date of acquisition, the entity acquiring the land shall allow the grazing to continue for the remainder of the term of the lease, permit, or contract, subject to the related terms and conditions of user agreements, including permitted stocking rates, grazing fee levels, access rights, and ownership and use of range improvements.

(2) **RENEWAL.**—To the extent allowed by Federal or State law, on expiration of any grazing lease, permit, or contract described in paragraph (1), the holder of the lease, permit, or contract shall be entitled to a preference right to renew the lease, permit, or contract.

(3) **BASE PROPERTIES.**—If land conveyed by the State under this Act is used by a grazing permittee or lessee to meet the base property requirements for a Federal grazing permit or lease, the land shall continue to qualify as a base property for the remaining term of the lease or permit and the term of any renewal or extension of the lease or permit.

(c) **HAZARDOUS MATERIALS.**—

(1) **IN GENERAL.**—The Secretary and the State shall make available for review and inspection any record relating to hazardous materials on the land to be exchanged under this Act.

(2) **COSTS.**—The costs of remedial actions relating to hazardous materials on land acquired under this Act shall be paid by those entities responsible for the costs under applicable law.

**SEC. 109. – LANDS WITHIN HISTORIC UNCOMPAHGRE RESERVATION.**

In the event that a court of competent jurisdiction issues a final judgment against the United States determining that the public lands within the boundaries of the historic Uncompahgre Reservation currently managed by the Bureau of Land Management are or should be tribal trust lands of the Ute Indian Tribe of the Uintah and Ouray Reservation, then ---

(a) within one year of the final judgment, the State of Utah shall relinquish all lands acquired by the State under this Act that are located within the historic Uncompahgre Reservation to the United States for the benefit of the Tribe; and

(b) upon such relinquishment, the State of Utah may select unappropriated public lands of equal value elsewhere in Utah in the manner provided by section 6 of the Utah Enabling Act, Act of July 16, 1894, ch. 138, 28 Stat. 107.

**SEC. 110. – BOOK CLIFFS CONSERVATION AREA.** – The non-Federal mineral estate acquired by the United States in the area depicted on the Grand County map as the Book Cliffs Conservation Area is withdrawn from the operation of the mineral entry, leasing and mineral material disposal laws until otherwise determined by Congress.

## **Title II – Goblin Valley State Park**

**SEC. 201. LAND CONVEYANCE**

(a) LAND CONVEYANCE. – At the request of the State of Utah, the Secretary of the Interior shall convey, without consideration, the approximately 9,994 acres of Bureau of Land Management land identified as “Utah PLI Goblin Valley State Park Map,” on the map entitled Utah PLI Goblin Valley State Park Expansion Map and dated \_\_\_\_\_, to the Utah State Parks and Recreation Division of the Department of Natural Resources.

**SEC. 202. COOPERATIVE MANAGEMENT OF GOBLIN VALLEY.**

(a) IN GENERAL.—At the request of the State, in accordance with this section, the Secretary of the Interior shall enter into a cooperative agreement with the State for the management of the federal land described in subsection (b).

(b) DESCRIPTION OF LAND.—The area subject to the cooperative agreement is federal land managed by the Bureau of Land Management in Emery County, Utah comprising approximately 156,540 acres, identified as “Goblin Valley Cooperative Management Area” on the map entitled Utah PLI Goblin Valley State Park Map and dated \_\_\_\_\_.

(c) PURPOSES. - The purposes of the Goblin Valley Cooperative Management Area is to promote outdoor recreation, such as off-highway vehicle use, mountain biking, rock climbing, and hiking.

(d) TERMS.—The cooperative agreement shall—

(1) clarify the roles, responsibilities, and limitations, of the Secretary of the Interior and the State with regard to recreation management within the federal land;

(2) extend only to recreational activities, including Off-highway vehicle and non-Off-highway vehicle, within the federal land, and shall not affect other land management within the federal land, or recreational activities outside the federal land;

(3) require that recreational activities within the federal land shall continue to be managed in accordance with—

(A) the San Rafael Swell National Conservation Area and Crack Canyon Wilderness Area established by this Act; and

(B) applicable federal laws.

(4) require new route and trail construction for motorized and non-motorized use to further recreational opportunities and/or minimize resource conflict, when and where appropriate;

(4) address the establishment, distribution, and uses of, any revenues generated by recreational activities (including entrance fees) on federal lands within the Goblin Valley Cooperative Management Area; and

(5) specify that the State agency administering the federal land shall be the Utah State Parks and Recreation Division of the Department of Natural Resources.

**Title III – Price Canyon State Forest**

**SEC. 301. DEFINITIONS.**

In this title:

- (1) MAPS.—The term “Map” means the map titled Utah PLI Price Canyon State Forest Map.
- (2) FEDERAL LAND. – The term “federal land” means the 13,321-acres owned by the Bureau of Land Management and identified as “BLM Lands Proposed for Transfer to State Sovereign Land” located in Carbon County, Utah, as generally depicted on the map entitled “Utah PLI Price Canyon State Forest Map” and date \_\_\_\_\_
- (3) NON-FEDERAL LAND.—The term “non-federal land” means the 14,939-acres identified on the Map as “State Sovereign Land Proposed for Transfer to BLM” located in Grand, and San Juan Counties, Utah, as generally depicted on the
- (4) SECRETARY.—The term “Secretary” means the Secretary of the Interior.
- (5) STATE.—The term “State” means the State of Utah’s Division of Forestry, Fire, and State Lands.

**SEC. 302. EXCHANGE OF LAND.**

- (a) In General.-- It is the purpose of this title to consolidate intermingled State sovereign lands in an area of Carbon County, Utah to create the State of Utah’s first State Forest.
- (b) If the State offers to convey to the United States title to the non-federal land, the Secretary of the Interior shall--
  - (1) accept the offer; and
  - (2) on receipt of the right, title, and interest of the State in and to the non-federal land, convey to the State all right, title, and interest of the United States in and to the federal land.
- (c) VALID EXISTING RIGHTS.--The exchange authorized under subsection (a) shall be subject to valid existing rights.
- (d) TITLE APPROVAL.--Title to the federal land and non-federal land to be exchanged under this section shall be in a format acceptable to the Secretary of the Interior and the State.

**SEC. 303. LIVESTOCK GRAZING.**

- (a) LIVESTOCK GRAZING--- Within the lands acquired by the state under this title in which grazing is established before the date of enactment of this Act, the grazing of livestock shall continue at levels existing as of January 1, 2016, subject to reasonable regulations as prescribed by the Secretary.

## **Title IV – Deer Lodge Land Exchange**

**SEC. 401 Definitions**

In this title:

- (a) ASSOCIATION.—The term “Association” means the Deer Lodge Homeowners Association.



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(b) FEDERAL LAND.—The term “federal land” means the approximately 156 acres of National Forest System land in Daggett County, Utah, identified as “Deer Lodge Cabin Site” on the map entitled “Utah PLI Deer Lodge Land Exchange Map” and dated \_\_\_\_\_.

(c) NON-FEDERAL LAND.—The term “non-federal land” means the parcel of approximately 77 acres of private land located in Uintah County, Utah and identified as “Land to Be Acquired by USFS” on the map entitled “Utah PLI Deer Lodge Land Exchange Map” and dated \_\_\_\_\_

(d) SECRETARY.—The term “Secretary” means the Secretary of Agriculture.

#### **SEC. 402 LAND EXCHANGE.**

(a) CONVEYANCE OF LAND.—No less than two years after enactment of this title, if the Association offers to convey to the United States all right, title, and interest of the Association in and to the non-federal land, the Secretary of Agriculture shall convey to the Association, without consideration, all right, title, and interest of the United States in and to the federal land, subject to valid existing rights.

(b) COMPLIANCE WITH EXISTING LAW.— Except as otherwise provided in this title, the Secretary of Agriculture shall carry out the land exchange under this title in accordance with section 206 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1716).

#### **SEC. 403 CONDITIONS OF EXCHANGE.**

(a) TITLE.—As a condition of the land exchange under this title, title to the non-federal land to be acquired by the Secretary of Agriculture under this title shall be acceptable to the Secretary of Agriculture.

(b) TERMS AND CONDITIONS.—As a condition of the land exchange under this title, the Association shall agree to retain as undeveloped open space the approximately 40 acres of meadow area identified as “Open Space” as generally depicted on the map entitled “Utah PLI Deerlodge Land Exchange” and dated \_\_\_\_\_.”

## **Title V – Scofield Land Transfers**

#### **SEC. 501. DEFINITIONS.**

In this title:

(1) CARBON COUNTY.—

The term “Carbon County” means Carbon County, Utah, within which the Scofield Reservoir property is located.

(2) CLAIMANT.—The term “claimant” means any person or entity (or a successor in interest to a person or entity) that, according to the records in the office of the Recorder for Carbon , Utah, as of the date of enactment of this Act, claims title to, or an interest in, the federal land.

(3) FEDERAL LAND.—

(A) IN GENERAL.—The term “federal land” means the land acquired by Price River Water Conservation District and transferred to the United States for use in the construction and operation of Scofield Dam and Reservoir located between the normal water surface elevation and the property boundary elevation in the Scofield Reservoir basin.

(B) EXCLUSIONS.—The term “federal land” does not include any mineral or subsurface rights to the land described in subparagraph (A); or the 205 acres of land adjoining the Scofield Reservoir, as adjudicated in the case styled United States v. Dunn (557F.3d 1165 (10th Cir. 2009)).

(4) LIFE ESTATE.—The term “life estate” means if the claimant is a person, an interest of the claimant in the federal land that will revert to the United States on the date of the death of the claimant; and (B) if the claimant is an entity, an interest in the federal land of a person designated by the claimant that will revert to the United States on the date of the death of the designated person.

(5) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

## **SEC. 502. CONVEYANCE OF SCOFIELD PROJECT LAND.**

(a) The Secretary of the Interior shall convey all right and title to the federal land, or a life estate in the federal land, without consideration, to any valid claimant that submits a request to the Secretary of the Interior not later than 18 months after the enactment of this Act. If the Secretary of the Interior does not act upon the request within 18 months from the date of enactment of this act, the federal land shall be transferred to the claimant.

(b) CONVEYANCE REQUIREMENTS- A conveyance under this title shall be subject to—

(A) provisions under which the claimant shall agree to indemnify and hold harmless the United States for all claims by the claimant or others arising from--

- (i) the design, construction, operation, maintenance, or replacement of Scofield Dam and Reservoir;
- (ii) the survey of claims, description of claims, delineation of boundaries, conveyance documents, conveyance process, and recording of deeds associated with the conveyance; and
- (iii) any damages associated with any structure or chattel of the claimant that may be displaced in a flood event;

(B) the United States retaining a flood easement as well as an access easement for purposes of monitoring and enforcing the requirements of subparagraph (c) with respect to the entire portion of federal land conveyed; and

(C) deed restrictions requiring that--

(i) to prevent any structure on the portion of the federal land conveyed from being displaced during a flood event, the claimant shall--

(I) secure or tie down all existing structures; and

(II) if replacing or rebuilding such a structure, limit the replacement or rebuilding to the number and type of structures in existence on the date of enactment of this Act; and

(ii) all activities carried out by the claimant under clause (i) with respect to a structure to be carried out in accordance with applicable standards for structures that may be submerged, flooded, or inundated, as contained in--

(I) the International Building Code (as adopted by Utah Administrative Code R156-56); or

(II) any other building code or engineering standard that is--

(aa) similar to the International Building Code;

(bb) widely used; and

(cc) nationally recognized.

(c) If the claimant is a willing seller, the Secretary of the Interior may offer the claimant fair market value for the land in lieu of a conveyance of all right and title to the federal land.

## **Title VI – Land Conveyances**

### **SEC. 601. Land Conveyances.**

(a) IN GENERAL.—Notwithstanding the land use planning requirements of sections 202 and 203 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1712, 1713), upon the request of the specified local entity in the county in which the conveyance will occur, the Secretary of the Interior or the Secretary of Agriculture as appropriate shall convey the following federal land to that entity, without consideration:

(1) CANYONLANDS FIELDS AIRPORT - The approximately 561 acres of land depicted as “Canyonlands Fields Airport,” on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_, to Grand County, Utah for use as an airport

(2) MOAB TAILINGS PROJECT – Upon completion of the Moab Uranium Mill Tailings Remedial Action (UMTRA) Project, the approximately 474 acres of land depicted as “UMTRA Conveyance,” on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_, shall be conveyed, without consideration, to Grand County, Utah.

(3) HUNTINGTON AIRPORT EXPANSION.—The approximately 1,398 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_ as

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“Huntington Airport,” to Emery County, Utah, for expansion of the Huntington Municipal Airport.

(4) EMERY COUNTY RECREATION AREA.—The approximately 479 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_ as “Emery County Recreation Area,” to Emery County, Utah for public recreational purposes.

(5) EMERY COUNTY SHERIFF SUBSTATION.—The approximately 643 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_, as “Emery County Sheriffs Substation,” to Emery County, Utah for a substation for the Emery County Sheriff’s Office.

(6) BLANDING OUTDOOR RECREATION AREA.---The approximately 5,197 acres of land depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_, as “Blanding Outdoor Recreation Area,” to Blanding City, Utah for use as an outdoor recreation area.

(7) CAL BLACK AIRPORT.—The approximately 1,916 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Cal Black Airport,” to San Juan County, Utah for a municipal airport.

(8) BLUFF AIRPORT.—The approximately 1,406 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Bluff Airport,” to San Juan County, Utah, for a municipal airport.

(9) MONTICELLO WATER STORAGE AND TREATMENT PLANT.—The approximately 164 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Monticello Water Storage and Treatment Plant,” to Monticello City, Utah, for a water storage and treatment plant.

(10) BLANDING SHOOTING RANGE.—The approximately 21 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_, as “Blanding Shooting Range,” to San Juan County, Utah, for a public shooting range.

(11) FANTASY CANYON.—The approximately 160 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_, as “Fantasy Canyon” to the State of Utah, for public recreation.

(12) PARK CITY CONVEYENCE I – The approximately 2.5 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Park City Conveyance I,” to Park City, Utah, for public recreation and open space.

(13) PARK CITY CONVEYENCE II – The approximately 1 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Park City Conveyance II,” to Park City, Utah, for public recreation and open space.

(14) LISBON VALLEY -- The approximately 398 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Lisbon Valley,” to Utah State University, Utah, for education and research.

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(15) WELLINGTON -- The approximately 645 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Wellington,” to Utah State University, for education and research.

(16) RANGE CREEK RESEARCH STATION EXPANSION-- The approximately 1,663 acres depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Range Creek Research Station Expansion,” to the University of Utah, for education and research.

(17) ASHLEY SPRING ZONE.—The approximately 1,102 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Ashley Spring,” to Uintah County, Utah, for use as open space and for watershed protection and drinking water development.

(18) SEEP RIDGE UTILITY CORRIDOR. – The approximately \_\_\_\_\_ acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Seep Ridge Utility Corridor,” to the State of Utah, for use as rights-of-way for public utilities.

(19) BLUFF RIVER RECREATION AREA. - The approximately 177 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_ as “Bluff River Recreation Area,” to San Juan County, for use as recreation and municipal facilities.

(20) EMERY INFORMATION CENTER. – The approximately 80 acres generally depicted on the map entitled Utah PLI Land Conveyances Map and dated \_\_\_\_\_, as “Emery County Information Center,” to Emery County, Utah for an information and visitor center to promote public lands.

(b) MAP AND LEGAL DESCRIPTIONS.—

(1) IN GENERAL. – Not later than two years after the date of enactment of this Act, the Secretary of the Interior and the Secretary of Agriculture shall file a map and legal description of the Land Conveyances with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(2) FORCE AND EFFECT.—Each map and legal description submitted under this section shall have the same force and effect as if included in this title, except that the Secretary of the Interior or the Secretary of Agriculture as appropriate may make any minor modifications of any clerical or typographical errors in the map or legal description.

(3) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the Bureau of Land Management and the United States Forest Service.

(c) REVERSION.—If any parcel conveyed under subsection (a) ceases to be used for the purpose for which it was conveyed or any other public purpose, the land shall revert to the United States, if the Secretary of the Interior or the Secretary of Agriculture as appropriate determines that the reversion is in the best interest of the United States.

## **Title VII – Land Disposals**

### **SEC. 701. LAND DISPOSALS.**

- (a) Disposal. -- Subject to valid existing rights, the Secretary of the Interior shall dispose of federal lands identified as “Lands for Disposal” on the map entitled “Utah PLI Land Disposal Map” and dated \_\_\_\_\_ within two years.

## **Title VIII – CANYON COUNTRY RECREATION ZONES**

### **SEC 801. ESTABLISHMENT**

(a) ESTABLISHMENT.—Subject to valid existing rights, and to enhance existing and future recreational opportunities and use the following areas in Grand County, Uintah County, and San Juan County, Utah are hereby established as Recreation Zones:

- (1) KLONDIKE RECREATION ZONE.—Certain federal land, comprising approximately 24,968 acres administered by the Bureau of Land Management in Grand County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Klondike Recreation Zone.”
- (2) MONITOR AND MERRIMAC RECREATION ZONE.—Certain federal land, comprising approximately 17,370 acres administered by the Bureau of Land Management in Grand County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Monitor and Merrimac Recreation Zone.”
- (3) GOLDBAR RECREATION ZONE.—Certain federal land, comprising approximately 23,050 acres administered by the Bureau of Land Management in Grand County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Goldbar Recreation Zone.”
- (4) BIG FLAT RECREATION ZONE.—Certain federal land, comprising approximately 25,311 acres administered by the Bureau of Land Management in Grand County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Big Flat Recreation Zone.”
- (5) MINERAL CANYON RECREATION ZONE.—Certain federal land, comprising approximately 19,809 acres administered by the Bureau of Land Management in Grand County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Mineral Canyon Recreation Zone.”
- (6) DEE PASS AND UTAH RIMS RECREATION ZONE.—Certain federal land, comprising approximately 210,116 acres administered by the Bureau of Land

Management in Grand County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Dee Pass and Utah Rims Recreation Zone.”

- (7) YELLOW CIRCLE.—Certain federal land, comprising approximately 7,040 acres administered by the Bureau of Land Management in San Juan County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Yellow Circle Recreation Zone.”
- (8) CAMEO CLIFFS.—Certain federal land, comprising approximately 48,025 acres administered by the Bureau of Land Management in San Juan County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Cameo Cliffs Recreation Zone.”
- (9) JENSEN HILLS.—Certain federal land, comprising approximately \_\_\_\_\_ acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Jensen Hills Recreation Zone.”
- (10) RED MOUNTAIN.—Certain federal land, comprising approximately \_\_\_\_\_ acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Red Mountain Recreation Zone.”
- (11) DEVILS HOLE.—Certain federal land, comprising approximately \_\_\_\_\_ acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Devils Hole Recreation Zone.”
- (12) BOURDETTE DRAW.—Certain federal land, comprising approximately \_\_\_\_\_ acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Bourdette Draw Recreation Zone.”
- (13) RED WASH.—Certain federal land, comprising approximately \_\_\_\_\_ acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI Recreation Zones Map and dated \_\_\_\_\_ to be known as the “Red Wash Recreation Zone.”

**SEC. 802. MAP AND LEGAL DESCRIPTION.**

(a) IN GENERAL. – Not later than two years from the date the date of enactment of this Act, the Secretary of the Interior shall file a map and legal description of the recreation zones established by sections 801 of this Act with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(b) FORCE AND EFFECT.—The map and legal description submitted under this section shall have the same force and effect as if included in this title, except that the

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Secretary of the Interior may make any minor modifications of any clerical or typographical errors in the map or legal description.

(c) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the Bureau of Land Management.

### **SEC. 803. GENERAL PROVISIONS.**

(a) FIRE, INSECTS, AND DISEASE .— In accordance with this title, the Secretary of the Interior may—

(1) carry out any measures to manage wildland fire and treat hazardous fuels, insects, and diseases in the recreation zones; and

(2) coordinate those measures with the appropriate State or local agency.

(b) WILDLAND FIRE OPERATIONS. – Nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment) or interferes with the authority of the Secretary of the Interior to authorize mechanical thinning of trees or underbrush to prevent or control the spread of wildfires or the use of mechanized equipment for wildfire pre-suppression and suppression.

(c) LIVESTOCK GRAZING. —

(1) IN GENERAL .—Within the recreation planning areas, the grazing of livestock in which grazing is established before the date of enactment of this Act shall continue in accordance with the grazing permit that existed on January 1, 2016, subject to reasonable regulations as prescribed by the Secretary.

(2) PROTECTION OF EXISTING USES. Existing livestock grazing shall continue, to the greatest extent practicable, in accordance with the following guidelines:

(A) there shall be no curtailments of grazing in the areas designated by this title simply because an area is, or has been designated by this title, nor should designations be used as an excuse by administrators to slowly "phase out" grazing.

B) the number and type of livestock permitted to graze in areas designated by this title shall continue at stocking levels prescribed in the grazing permit in effect at the time an area is designated to the greatest extent practicable.

C) the maintenance of pre-established facilities existing in an area prior to its classification as designated by this title (including fences, line cabins, water wells and pipelines, stock tanks and ponds, etc.), shall continue. Such maintenance includes the use of Off-highway vehicle or mechanized tools and equipment.

D) the construction of new improvements or replacement of deteriorated facilities in areas designated by this title is permissible if in accordance with guidelines and management plans governing the area.

E) the use of Off-highway vehicle equipment for emergency purposes such as rescuing sick animals or the placement of feed in emergency situations is permissible.



F) Access to historic and traditional water sources for the purpose of supporting livestock shall be maintained.

G) the trailing and movement of domestic livestock where permitted prior to the enactment of this Act shall continue

(3) UTAH DEPARTMENT OF AGRICULTURE

In instances in which historic grazing areas, access, or use is disputed by the permittee, data and information provided by the Utah Department of Agriculture shall be given priority consideration by the Secretary of the Interior to establish historic grazing, locations, or use.

(d) EXISTING EASEMENTS AND RIGHTS-OF-WAY. – Nothing in this title precludes the Secretary of the Interior from renewing easements or rights-of-way in existence as of the date of enactment of this Act, in accordance with this title and existing law.

(f) ADJACENT MANAGEMENT.—

(1) IN GENERAL.—Nothing in this title creates a protective perimeter or buffer zone around any recreation zone designated by this title.

(2) ACTIVITIES OUTSIDE THE RECREATION ZONES.—The fact that an activity or use on land outside a recreation zone can be seen, heard, or smelled within the recreation zone shall not preclude the activity or use outside the boundary of the recreation zone.

(e) OUTFITTING AND GUIDE ACTIVITIES .— Commercial services (including authorized outfitting and guide activities) within the recreation zones are authorized.

(f) FISH AND WILDLIFE .—Nothing in this title affects the jurisdiction of the State of Utah with respect to the management of fish and wildlife on federal land in the State, including the regulation of hunting, fishing, and trapping within the recreation zones.

(g) ACCESS .—The Secretary of the Interior shall provide the owner of State or private property within the boundary of a recreation zones access to the property.

(h) WILDLIFE WATER DEVELOPMENT PROJECTS .— Structures and facilities, including future and existing structures and facilities, for wildlife water development projects (including guzzlers) in the recreation zones are authorized

(i) HUNTING, FISHING, AND RECREATIONAL AND TARGET SHOOTING. – Within the recreation zones in where hunting, fishing, and recreational and target shooting on lands and waters owned of managed by the Department of the Interior was allowed before the date of enactment of this Act, shall continue.

(j) WATER RIGHTS. –

(a) STATUTORY CONSTRUCTION .—Nothing in this title—

(1) shall constitute either an express or implied reservation by the United States of any water rights with respect to the recreation zones designated by this title;

(2) affects any water rights in the State of Utah;

(3) establishes a precedent with regard to any future recreation zone.

(b) UTAH WATER LAW. –The Secretary of the Interior shall follow the procedural and substantive requirements of State law to obtain and hold any water rights not in existence on the date of the enactment of this Act with respect to the recreation zones.

(c) EXISTING WATER INFRASTRUCTURE.—Nothing in this Act shall be construed to limit Off-highway vehicle access and road maintenance by local municipalities for those maintenance activities necessary to guarantee the continued viability of water resource facilities that currently exist or which may be necessary in

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the future to prevent the degradation of the water supply in recreation zones designated by this title.

(d) DEFINITION. – The term “water resource facilities” means irrigation and pumping facilities, reservoirs, water conservation works, aqueducts, canals, ditches, pipelines, wells, hydropower projects, transmission and other ancillary facilities, and other water diversion, storage, and carriage structures.

(k) VEGETATION MANAGEMENT.—Nothing in this title prevents the Secretary of the Interior from conducting vegetation management projects within the recreation zones.

(l) WILDERNESS REVIEW. –

(a) Congress finds and directs that the recreation zones described in section 801 have been adequately studied for wilderness character and wilderness designation pursuant to sections 201 and 603 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782) and are no longer subject to the requirement of subsection (c) of such section pertaining to the management of wilderness study areas in a manner that does not impair the suitability of such areas for preservation as wilderness.

(b) The Secretary of the Interior may not promulgate or issue any system-wide regulation, directive, instruction memorandum or order that would direct management of the federal lands identified in section 801 in a manner contrary to subsection (m).

(m) MANAGEMENT PLAN. –

(1) PLAN REQUIRED- Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of each recreation zone.

(2) RECOMMENDATIONS AND CONSULTATION- The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

(c) USES- The Secretary of the Interior shall allow only such uses of the recreation zones that would further the purposes and uses outlined within each Zone and in consultation and coordination with the Public Lands Initiative Resource Advisory Councils established under Division C of this Act.

#### **SEC. 804. GOLDBAR RECREATION ZONE ADDITIONAL PROVISIONS**

(a) PURPOSES.---The purposes of the Goldbar Recreation Zone are to promote outdoor recreation, such as off-highway vehicle use, mountain biking, and hiking, provide for the construction of new non-Off-highway vehicle trails, and to prevent future energy and mineral leases or claims, and to manage and protect indigenous plants.

(b) ADMINISTRATION.---

(1) IN GENERAL.--- The Secretary of the Interior shall administer the Goldbar Recreation Zone in accordance with---

(a) this title

(b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and

(c) other applicable laws.

(2) USES .— Uses and management of the Zone shall:

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- (A) coordinate and consults with State and local government entities
- (B) provide for recreational opportunities to occur within the Goldbar Recreation Zone including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and camping
- (C) prohibit future mineral and energy leasing or claims.
- (D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.
- (E) protects and manages indigenous plants.
- (F) comply with Section 803.

**(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—**

- (A) **IN GENERAL-** The Secretary of the Interior shall manage existing designated routes in a manner that--
  - (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016..
  - (ii) allows for adjustment to the travel management plan within the regular amendment process.
  - (iii) allows for the construction of new non-Off-highway vehicle trails.

**SEC. 805. MONITOR AND MERRIMAC RECREATION ZONE ADDITIONAL PROVISIONS.**

(a) **PURPOSES.**---The purposes of the Monitor and Merrimac Recreation Zone are to promote outdoor recreation, such as off-highway vehicle use, mountain biking, rock climbing, and hiking, provide for the construction of new Off-highway vehicle and non-Off-highway vehicle trails, and to prevent future energy and mineral leases or claims,

(b) **ADMINISTRATION.**---

(1) **IN GENERAL.**--- The Secretary of the Interior shall administer the Monitor and Merrimac Recreation Zone in accordance with---

- (a) this title
- (b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) and
- (c) other applicable laws.

(2) **USES .—** Uses and management of the Zone shall:

- (A) coordinate and consults with State and local government entities
- (B) provide for recreational opportunities to occur within the Monitor and Merrimac Recreation Zone including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing
- (C) prohibit future mineral and energy leasing.
- (D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.
- (E) comply with Section 803 .

**(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—**

(A) IN GENERAL- The Secretary of the Interior shall manage existing designated Off-highway vehicle routes in a manner that--

- (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.
- (ii) allows for adjustment to the travel management plan within the regular amendment process.
- (iii) allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.

## **SEC. 806 KLONDIKE RECREATION ZONE ADDITIONAL PROVISIONS**

(a) PURPOSES.---The purposes of the Klondike Recreation Zone are to promote outdoor recreation, such as off-highway vehicle use, mountain biking, rock climbing, and hiking, provide for the construction of new non-Off-highway vehicle trails, and to prevent future energy and mineral leases or claims,

(b) ADMINISTRATION.---

(1) IN GENERAL.--- The Secretary of the Interior shall administer the Klondike Recreation Zone in accordance with---

- (a) this title
- (b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and
- (c) other applicable laws

(2) USES .— Uses and management of the Zone shall:

- (A) coordinate and consults with State and local government entities
- (B) provide for recreational opportunities to occur within the Klondike Recreation Zone including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing
- (C) prohibit future mineral and energy leasing.
- (D) provide for new route and trail construction for non-Off-highway vehicle use to further recreational opportunities.
- (E) provide managerial flexibility to route Off-highway vehicle trails in a way that minimizes conflict with non-Off-highway vehicle trails.
- (E) comply with Section 803 .

(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—

(A) IN GENERAL- The Secretary of the Interior shall manage existing designated routes in a manner that--

- (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016, including off-highway vehicle use of Sovereign Trail System.
- (ii) allows for adjustment to the travel management plan within the regular amendment process.
- (iii) allows for the construction of new non-Off-highway vehicle trails.

**SEC. 807 BIG FLAT RECREATION ZONE ADDITIONAL PROVISIONS**

(a) **PURPOSES.**---The purposes of the Big Flat Recreation Zone are to promote outdoor recreation, such as off-highway vehicle use, mountain biking, rock climbing, and hiking, to promote mineral development, and provide for new Off-highway vehicle route construction.

(b) **ADMINISTRATION.**---

(1) **IN GENERAL.**--- The Secretary of the Interior shall administer the Big Flat Recreation Zone in accordance with---

- (a) this title
- (b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and
- (c) other applicable laws.

(2) **USES .**— Uses and management of the Zone shall:

- (A) coordinate and consults with State and local government entities
- (B) provide for recreational opportunities to occur within the Big Flat Recreation Zone including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing
- (C) provide for future mineral leasing with No Surface Occupancy stipulations
- (D) prevent the retirement of mineral leases.
- (E) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.
- (F) comply with Section 803 .

(3) **MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.**—

(A) **IN GENERAL.** The Secretary of the Interior shall manage existing designated routes in a manner that--

- (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.
- (ii) Allows for adjustment to the travel management plan within the regular amendment process.
- (iii) Allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.

**SEC. 808 MINERAL CANYON RECREATION ZONE ADDITIONAL PROVISIONS.**

(a) **PURPOSES.**---The purposes of the Mineral Canyon Recreation Zone are to promote non-Off-highway vehicle outdoor recreation, such mountain biking, rock climbing, and hiking, to prevent future energy or mineral leases or claims, and provide for new non-Off-highway vehicle route construction, maintain boating access, maintain airstrip access, and maintain access and use of country borrow areas.

(b) **ADMINISTRATION.**---

(1) **IN GENERAL.**--- The Secretary of the Interior shall administer the Mineral Canyon Recreation Zone:

- (i) in accordance with---

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- (ii) this title;
- (iii) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and
- (iv) other applicable laws.

(2) USES .— Uses and management of the Zone shall:

- (A) coordinate and consults with State and local government entities;
- (B) provide for non Off-highway vehicle recreational opportunities to occur within the Mineral Canyon Recreation Zone including, biking, and hiking,
- (C) prevent future energy or mineral leasing or claims
- (D) provide for new route and trail construction for non-Off-highway vehicle use to further recreational opportunities.
- (E) maintain access for boating
- (F) maintain access for aircraft to the existing airstrip
- (G) maintain access and use to the county borrow areas.
- (H) comply with Section 803 .

(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—

(A) IN GENERAL- The Secretary of the Interior shall manage existing designated routes in a manner that--

- (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.
- (ii) allows for adjustment to the travel management plan within the regular amendment process.
- (iii) allows for the construction of new non-Off-highway vehicle trails.

**SEC. 809. DEE PASS AND UTAH RIMS RECREATION ZONE ADDITIONAL PROVISIONS.**

(a) PURPOSES.---The purposes of the Dee Pass and Utah Rims Recreation Zones are to promote off-highway vehicle recreation and to provide for the construction of new Off-highway vehicle trails and non-Off-highway vehicle trails, and to promote energy and mineral leasing and development.

(b) ADMINISTRATION.---

(1) IN GENERAL.--- The Secretary of the Interior shall administer the Dee Pass and Utah Rims Recreation Zones in accordance with---

- (a) this title
- (b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and
- (c) other applicable laws;

(2) USES .— Uses and management of the Zone shall:

- (A) coordinate and consults with State and local government entities
- (B) provide for recreational opportunities to occur within the Dee Pass and Utah Rims Recreation Zones including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing

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- (C) Provide future mineral and energy leasing and development in a manner that minimizes impacts to outdoor recreation.
- (D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.
- (E) comply with Section 803 .

**(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—**

- (A) **IN GENERAL-** The Secretary of the Interior shall manage existing designated routes in a manner that--
  - (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.
  - (ii) Allows for adjustment to the travel management plan within the regular amendment process.
  - (iii) Allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.

**(4) WHITE WASH CROSS COUNTRY TRAVEL AREA.—** The approximately \_\_\_\_\_ acres identified as the “White Wash Cross Country Travel Area”, on the map entitled “Utah PLI Recreation Zones Map” and dated \_\_\_\_\_ is open to cross country Off-highway vehicle travel.

**SEC. 810. YELLOW CIRCLE MINE AND CAMEO CLIFFS ADDITIONAL PROVISIONS**

(a) **PURPOSES.**---The purposes of the Yellow Circle Mine and Cameo Cliffs Recreation Zones are to promote off-highway vehicle use and to provide for the construction of new Off-highway vehicle and non-Off-highway vehicle trails, and to promote energy and mineral leasing and development.

(b) **ADMINISTRATION.**---

(1) **IN GENERAL.**--- The Secretary of the Interior shall administer the Yellow Circle Mine and Cameo Cliffs Recreation Zone in accordance with---

- (a) this title
- (b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and
- (c) other applicable laws

(2) **USES .—** Uses and management of the Zone shall:

- (A) coordinate and consults with State and local government entities
- (B) provide for recreational opportunities to occur within the Yellow Circle Mine and Cameo Cliffs including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing
- (C) Provide future mineral and energy leasing and development in a manner that minimizes impacts to outdoor recreation.
- (D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.
- (E) comply with Section 803 .

**(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—**

- (A) **IN GENERAL-** The Secretary of the Interior shall manage existing designated Off-highway vehicle routes in a manner that--
- (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.
  - (ii) Allows for adjustment to the travel management plan within the regular amendment process.
  - (iii) Allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.

**SEC. 811. JENSEN HILLS RECREATION ZONE ADDITIONAL PROVISIONS.**

(a) **PURPOSES.**---The purposes of the Jensen Hills Recreation Zone is to promote off-highway vehicle recreation and to provide for the construction of new Off-highway vehicle trails and non-Off-highway vehicle trails, and to promote energy and mineral leasing and development.

(b) **ADMINISTRATION.**---

(1) **IN GENERAL.**--- The Secretary of the Interior shall administer the Jensen Hills Recreation Zone in accordance with---

- (a) this title
- (b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and
- (c) other applicable laws;

(2) **USES .**— Uses and management of the Zone shall:

- (A) coordinate and consults with State and local government entities
- (B) provide for recreational opportunities to occur within the Jensen Hills Recreation Zones including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing
- (C) Allow future mineral and energy leasing and development in a manner that minimizes impacts to outdoor recreation.
- (D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.
- (E) comply with Section 803 .
- (F) Allows cross country Off-highway vehicle travel

**(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—**

- (A) **IN GENERAL-** The Secretary of the Interior shall manage existing designated routes in a manner that--
- (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.
  - (ii) Allows for adjustment to the travel management plan within the regular amendment process.



- (iii) Allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.
- (iv) Allows for continued cross country Off-highway vehicle travel in areas where it is authorized as of January 1, 2016

**SEC. 812. DOCS BEACH RECREATION ZONE ADDITIONAL PROVISIONS.**

(a) **PURPOSES.**---The purposes of the Docs Beach Recreation Zone is to promote off-highway vehicle recreation and to provide for the construction of new Off-highway vehicle trails and non-Off-highway vehicle trails, and to promote energy and mineral leasing and development.

(b) **ADMINISTRATION.**---

(1) **IN GENERAL.**--- The Secretary of the Interior shall administer the Docs Beach Recreation Zone in accordance with---

- (a) this title
- (b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and
- (c) other applicable laws;

(2) **USES .**— Uses and management of the Zone shall:

- (A) coordinate and consults with State and local government entities
- (B) provide for recreational opportunities to occur within the Jensen Hills Recreation Zones including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing
- (C) Allows future mineral and energy leasing and development in a manner that minimizes impacts to outdoor recreation.
- (D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.
- (E) comply with Section 803 .
- (F) Allows cross country Off-highway vehicle travel

(3) **MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.**—

(A) **IN GENERAL.**- The Secretary of the Interior shall manage existing designated routes in a manner that--

- (i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.
- (ii) Allows for adjustment to the travel management plan within the regular amendment process.
- (iii) Allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.
- (iv) Allows for continued cross country Off-highway vehicle travel in areas where it is authorized as of January 1, 2016

**SEC. 813. RED MOUNTAIN RECREATION ZONE ADDITIONAL PROVISIONS.**

(a) **PURPOSES.**---The purposes of the Red Mountain Recreation Zone is to promote off-highway vehicle recreation and to provide for the construction of new Off-highway vehicle

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trails and non-Off-highway vehicle trails, and to promote energy and mineral leasing and development.

(b) ADMINISTRATION.---

(1) IN GENERAL.--- The Secretary of the Interior shall administer the Red Mountain Recreation Zone in accordance with---

(a) this title

(b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and

(c) other applicable laws;

(2) USES .— Uses and management of the Zone shall:

(A) coordinate and consults with State and local government entities

(B) provide for recreational opportunities to occur within the Red Mountain Recreation Zones including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing

(C) Allow future mineral and energy leasing and development in a manner that minimizes impacts to outdoor recreation.

(D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.

(E) comply with Section 803 .

(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—

(A) IN GENERAL- The Secretary of the Interior shall manage existing designated routes in a manner that--

(i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.

(ii) Allows for adjustment to the travel management plan within the regular amendment process.

(iii) Allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.

**SEC. 814. DEVILS HOLE RECREATION ZONE ADDITIONAL PROVISIONS.**

(a) PURPOSES.---The purposes of the Devils Hole Recreation Zone is to promote off-highway vehicle recreation and to provide for the construction of new Off-highway vehicle trails and non-Off-highway vehicle trails, and to promote energy and mineral leasing and development.

(b) ADMINISTRATION.---

(1) IN GENERAL.--- The Secretary of the Interior shall administer the Devils Hole Recreation Zone in accordance with---

(a) this title

(b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and

(c) other applicable laws;

(2) USES .— Uses and management of the Zone shall:

(A) coordinate and consults with State and local government entities

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(B) provide for recreational opportunities to occur within the Jensen Hills Recreation Zones including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing

(C) Allows future mineral and energy leasing and development in a manner that minimizes impacts to outdoor recreation.

(D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.

(E) comply with Section 803 .

(F) Allows cross country Off-highway vehicle travel

**(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—**

(A) IN GENERAL- The Secretary of the Interior shall manage existing designated routes in a manner that--

(i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.

(ii) Allows for adjustment to the travel management plan within the regular amendment process.

(iii) Allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.

(iv) Allows for continued cross country Off-highway vehicle travel in areas where it is authorized as of January 1, 2016

**SEC. 815. BOURDETTE DRAW RECREATION ZONE ADDITIONAL PROVISIONS.**

(a) PURPOSES.---The purposes of the Bourdette Draw Recreation Zone is to promote off-highway vehicle recreation and to provide for the construction of new Off-highway vehicle trails and non-Off-highway vehicle trails, and to promote energy and mineral leasing and development.

(b) ADMINISTRATION.---

(1) IN GENERAL.--- The Secretary of the Interior shall administer the Bourdette Draw Recreation Zone in accordance with---

(a) this title

(b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and

(c) other applicable laws;

(2) USES .— Uses and management of the Zone shall:

(A) coordinate and consults with State and local government entities

(B) provide for recreational opportunities to occur within the Jensen Hills Recreation Zones including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing

(C) Allow future mineral and energy leasing and development in a manner that minimizes impacts to outdoor recreation.

(D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.

(E) comply with Section 803 .

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(F) Allows cross country Off-highway vehicle travel

**(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—**

(A) IN GENERAL- The Secretary of the Interior shall manage existing designated routes in a manner that--

(i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.

(ii) Allows for adjustment to the travel management plan within the regular amendment process.

(iii) Allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.

(iv) Allows for continued cross country Off-highway vehicle travel in areas where it is authorized as of January 1, 2016

**SEC. 816. RED WASH RECREATION ZONE ADDITIONAL PROVISIONS.**

(a) PURPOSES.---The purposes of the Red Wash Recreation Zone is to promote off-highway vehicle recreation and to provide for the construction of new Off-highway vehicle trails and non-Off-highway vehicle trails, and to promote energy and mineral leasing and development.

(b) ADMINISTRATION.---

(1) IN GENERAL.--- The Secretary of the Interior shall administer the Red Wash Recreation Zone in accordance with---

(a) this title

(b) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and

(c) other applicable laws;

(2) USES .— Uses and management of the Zone shall:

(A) coordinate and consults with State and local government entities

(B) provide for recreational opportunities to occur within the Red Wash Recreation Zones including, biking, hiking, off-highway vehicle use, including motorcycling, ATV riding, and four-wheeling, and rock climbing

(C) Allow future mineral and energy leasing and development in a manner that minimizes impacts to outdoor recreation.

(D) provide for new route and trail construction for Off-highway vehicle and non-Off-highway vehicle use to further recreational opportunities.

(E) comply with Section 803 .

(F) Allow cross country Off-highway vehicle travel

**(3) MANAGEMENT OF OFF-HIGHWAY VEHICLE AND MECHANIZED VEHICLES.—**

(A) IN GENERAL- The Secretary of the Interior shall manage existing designated routes in a manner that--

(i) is consistent with Off-highway vehicle and mechanized use of the designated routes that is authorized as of January 1, 2016.

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- (ii) Allows for adjustment to the travel management plan within the regular amendment process.
- (iii) Allows for the construction of new Off-highway vehicle and non-Off-highway vehicle trails.
- (iv) Allows for continued cross country Off-highway vehicle travel in areas where it is authorized as of January 1, 2016

#### **SEC. 817 – HOLE-IN-THE-ROCK TRAIL.**

(a) This Act adds to the National Historic Trail System the corridor known as “The Hole-in-the-Rock Trail” to be managed as a historic trail and to remain in the ownership of current land management agencies.

(b) MANAGEMENT PLAN. –

(1) PLAN REQUIRED- Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of the historic trail.

(2) RECOMMENDATIONS AND CONSULTATION- The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

(c) USES- The Secretary of the Interior shall allow only such uses of the national historic trail that would further the purposes and uses outlined within this subsection and in consultation and coordination with the Public Lands Initiative Resource Advisory Councils established under Division C of this Act.

(c) Purposes and Uses

A. The purposes of the National Hole in the Rock Trail is to promote cultural, recreational – motorized and non-motorized, and historic values.

B. The Hole in the Rock Foundation and shall be a cooperating agency regarding trail management.

#### **SEC. 818 – RECAPTURE CANYON**

(a) San Juan County, Utah’s application for a Title V Right-of-Way, originally submitted on March 30, 2006 and later amended on November 13, 2012, is approved.

(b) The purposes of the Title V Right-of-Way, as stated by the County’s application, is to perform routine maintenance to existing trails and routes in an effort to encourage travel in the canyon to remain on a single established route through the canyon that minimizes impacts to the surrounding environment.

(c) The BLM decision to temporarily close Recapture Canyon to off-highway vehicle on September 12, 2007 is dissolved, as the right-of-way approved in subsection (a) will create a mechanism for proper management and maintenance of the area.

**SEC. 819. – BIG BURRITO NON-MOTORIZED TRAIL**

(a) The 9.3 mile proposed non-motorized trail within the Sand Flats Recreation Area, approved by the BLM Moab Field Office on December 18, 2016 and commonly known as the Big Burrito non-motorized trail, is hereby authorized to move forward and shall be constructed within 6 months of enactment of this Act.

**TITLE IX -- RED ROCK COUNTRY OFF-HIGHWAY VEHICLE TRAIL.**

**SEC. 901 DEFINITIONS.**—In this title:

- (1) COUNTY.—The term “County” means Grand and San Juan Counties, Utah.
- (2) SECRETARY.—The term “Secretary” means the Secretary of the Interior.
- (3) TRAIL.—The term “Trail” means the Red Rock Country Off-Highway Vehicle Trail established under subsection (b).
- (4) FEDERAL LAND. – The term “federal land” means land owned by the Bureau of Land Management.

**SEC. 902 DESIGNATION.**—

(1) IN GENERAL.— the Secretary of the Interior shall designate a trail system in Grand and San Juan Counties, Utah—

- (A) for use by Off-highway vehicle off-highway vehicles; and
- (B) to be known as the “Red Rock Country Off-Highway Vehicle Trail”.

(2) REQUIREMENTS.—In designating the trail, the Secretary of the Interior shall prioritize a long distance route for off-highway vehicles that—

(A) as generally depicted on the map entitled Utah PLI Recreation Plans Map and date\_\_\_\_\_;

(B) connects the federal land adjacent to Moab, Utah to the federal land adjacent to Grand Junction, Colorado through the Utah Rims Recreation Area;

(C) connects the federal land adjacent to Moab, Utah to the federal land adjacent to Green River, Utah through the Dee Pass Recreation Area;

(D) connects the federal land adjacent to Moab, Utah to the federal land adjacent to Monticello, Utah through the Cameo Cliffs Recreation Zone;

(E) utilizes existing routes, where feasible, which may include the Kokopelli’s Trail and the Orange Trail and Trail 1, consistent with this paragraph;

(F) minimizes the use of graded roads;

(G) creates a recreational experience that provides—

- (i) opportunities for scenic vistas;
- (ii) challenging terrain for off-highway vehicle travel;
- (iii) connections to other existing trail systems or trails;

- (iv) minimal conflicts between Off-highway vehicle and non-Off-highway vehicle user; and
- (v) Off-highway vehicle singletrack and doubletrack options where feasible.

(3) MAP.—A map that depicts the trail shall be on file and available for public inspection in the appropriate offices of the Bureau of Land Management.

#### **SEC. 903 MANAGEMENT-**

(A) IN GENERAL- The Secretary of the Interior shall manage future designated routes in a manner that--

- (i) is consistent with Section 902 ;
- (ii) does not interfere with private property or water rights.

(B) CLOSURE OR RELOCATING-

(i) IN GENERAL- A designated route may be temporarily closed or detoured, for a period not to exceed two years, if the Secretary of the Interior, in consultation with the State, or relevant local government within the State determines that--

- (I) the designated route is damaging cultural resources or historical resources;
- (II) temporary closure of the designated route is necessary to repair the designated route or protect public safety.
- (III) modification of the designated route would not significantly affect access within the given area.
- (IV) all other options, other than a temporary closure or rerouting, have been exhausted.
- (V) a new alternative route, which can include routes previously closed, has been provided to effectively relocate the trail.

(C) NOTICE- The Secretary of the Interior shall provide information to the public regarding any designated routes that are open, have been relocated, or are temporarily closed through--

- (i) use of appropriate signage within the trail;
- (ii) use of the internet and web resources.

(3) NO EFFECT ON NON-FEDERAL LAND OR INTERESTS IN NON-FEDERAL LAND- Nothing in this title affects ownership, management, or other rights relating to non-federal land or interests in non-federal land.

(d) TRAIL CONSTRUCTION.—

(1) FEASIBILITY STUDY.—Not later than 180 days after the date of enactment of this Act, the Secretary of the Interior shall study the feasibility and public interest in constructing new routes as part of a the Red Rock County Off-Highway Vehicle Trail System to further Off-highway vehicle recreational opportunities.

(2) CONSTRUCTION.—

(A) CONSTRUCTION AUTHORIZED.— If the Secretary of the Interior determines that the construction of a route is feasible, construction is authorized.

(B) USE OF VOLUNTEER SERVICES AND CONTRIBUTIONS.—A route may be constructed under this subsection through the acceptance of volunteer services and contributions from non-federal sources to eliminate the need for federal expenditures to construct the route.

(3) COMPLIANCE.—In carrying out this subsection, the Secretary of the Interior shall comply with—

(A) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and

(B) this title; and

(C) other applicable law.

## **Title X – Long-Term Native American Economic Development Certainty**

### **SEC. 1001. Native American Economic Development in San Juan County, Utah**

(a) McCracken Mesa Mineral Transfer. The federal minerals located within the Aneth Extension of the Navajo Nation shall be transferred to the Utah Navajo Trust Fund.

(b) The Act of March 1, 1933, H.R. 11735, Public No. 403, is hereby amended to state the following:

Should oil or gas be produced in paying quantities within the lands hereby added to the Navajo Reservation, 37.5 62.5 per centum of the net royalties accruing therefrom derived from tribal leases shall be paid to the State of Utah: Provided, that the 37.5 62.5 per centum of said royalties shall be expended by the State of Utah in the tuition of Indian children in white schools and/or in the building or maintenance of roads across the lands described in section 1 hereof, or for the benefit of the Indian residing therein.

### **SEC. 1002. Ute Indian Tribe Economic Development Area**

(a) Hill Creek Mineral Transfer. The federal minerals located within the Hill Creek Extension of the Ute Tribe shall be transferred to the Ute Tribe.

## **Title XI – Long-Term Energy Development Certainty**

### **SEC. 1101. – ENERGY PLANNING AREAS.**



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(a) ESTABLISHMENT.—Subject to valid existing rights, and to enhance energy development in lands not designated for conservation purposes, the following areas in Uintah, Carbon, Duchesne, and San Juan Counties are hereby established as Energy Zones:

- (1) UINTAH COUNTY ENERGY ZONE.—Certain federal land, comprising approximately \_\_\_ acres administered by the Bureau of Land Management in Uintah County, Utah, as generally depicted on the map entitled Utah PLI Energy Zones Map and dated \_\_\_\_\_ to be known as the “Uintah County Energy Zone.”
- (2) DUCHESNE COUNTY ENERGY ZONE.—Certain federal land, comprising approximately \_\_\_ acres administered by the Bureau of Land Management in Duchesne County, Utah, as generally depicted on the map entitled Utah PLI Energy Zones Map and dated \_\_\_\_\_ to be known as the “Duchesne County Energy Zone.”
- (3) CARBON COUNTY ENERGY ZONE.—Certain federal land, comprising approximately \_\_\_ acres administered by the Bureau of Land Management in Carbon County, Utah, as generally depicted on the map entitled Utah PLI Energy Zones Map and dated \_\_\_\_\_ to be known as the “Carbon County Energy Zone.”
- (4) SAN JUAN COUNTY ENERGY ZONE.—Certain federal land, comprising approximately \_\_\_ acres administered by the Bureau of Land Management in San Juan County, Utah, as generally depicted on the map entitled Utah PLI Energy Zones Map and dated \_\_\_\_\_ to be known as the “San Juan County Energy Zone.”
- (5) GRAND COUNTY ENERGY ZONE.—Certain federal land, comprising approximately \_\_\_ acres administered by the Bureau of Land Management in Carbon County, Utah, as generally depicted on the map entitled Utah PLI Energy Zones Map and dated \_\_\_\_\_ to be known as the “Grand County Energy Zone.”

#### **SEC. 1102. MAP AND LEGAL DESCRIPTION.**

(a) IN GENERAL. – Not later than two years from the date the date of enactment of this Act, the Secretary of the Interior shall file a map and legal description of the energy zones established by sections 1101 of this Act with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(b) FORCE AND EFFECT.—The map and legal description submitted under this section shall have the same force and effect as if included in this title, except that the Secretary of the Interior may make any minor modifications of any clerical or typographical errors in the map or legal description.

(c) PUBLIC AVAILABILITY. – A copy of the map and legal description shall be on file and available for public inspection in the appropriate offices of the Bureau of Land Management.

#### **SEC. 1103. GENERAL PROVISIONS**

(a) PURPOSES.—The purposes of the Energy Zone are to—

- (1) designate Federal lands within the areas identified in section 1101 for the primary purpose of energy and mineral development.
- (2) promote the use of best practices for the timely evaluation, exploration, leasing, development, production, and transportation of energy (including

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renewable energy) and mineral resources and the inspection and enforcement of such activities; and

(3) ensure that the development of energy and mineral resources is carried out in a manner pursuant to the multiple use provisions within sections 102 and 103 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701, 1702) and other provisions of law; and

(4) Provide for multiple-uses of the lands within the energy zone, including outdoor recreation and livestock grazing, to the greatest extent practicable.

**(b) MANAGEMENT PLAN.—**

(1) **PLAN REQUIRED-** Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior shall develop a management plan for the long-term management of the energy zones.

(2) **RECOMMENDATIONS AND CONSULTATION-** The Secretary of the Interior shall prepare the management plan in consultation and coordination with the Public Lands Initiative Planning Advisory Councils established under Division C of this Act.

(c) **USES-** The Secretary of the Interior shall allow only such uses of the energy zones that would further the purposes outlined in subsection (a) of this section and in consultation and coordination with the Public Lands Initiative Resource Advisory Councils established under Division C of this Act.

(c) **INTERIM MANAGEMENT.**—During the period of time preceding the final adoption of the Plan, the Secretary, acting through the relevant Record of Decision and Approved Resource Management Plan and the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) and pursuant to this Act.

(e) **MANAGEMENT.**—The Secretary shall manage the Energy Zone in accordance with—

(1) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.);

(2) the Energy Policy and Conservation Act (P.L. 94-163, 42 U.S.C. 6201); the Energy Policy Act of 2005 (P.L. 109-58, 42 U.S.C. 15801);

(3) this Act; and

(3) any other applicable law.

**(d) LEASING OUTSIDE OF THE ENERGY PLANNING AREAS**

Nothing in this title precludes leasing or resource development of BLM managed lands not described in subsection 1101 from occurring under regular order pursuant to the Mineral Leasing Act or other federal energy development laws.

**(e) MASTER LEASING PLANS**

(a) A Master Leasing Plan shall only be implemented within Uintah, Duchesne, Carbon, Grand, or San Juan Counties if the Public Lands Advisory Council established under Division C of this Act find the relevant Master Leasing Plan to be compatible and viable with the provisions of this Act.

**(f) Completion of Administrative Land Exchange Process**

1. The land exchange application, referred to as UTU-78673 pending before the Moab Field Office, shall be considered in the public interest and completed.

## **Title XII – Long-Term Travel Management Certainty**

### **SEC. 1201. RIGHTS-OF-WAY FOR CERTAIN ROADS.**

(a) **IN GENERAL.**— Subject to valid existing rights and consistent with this section, the Secretary of the Interior shall grant a right-of-way to the state for public travel and access upon the following roads:

(1) all roads claimed as Class B identified as rights-of-way in judicial actions in the federal court system as of January 1, 2016, in Uintah, Summit, Duchesne, Carbon, Emery, Grand, and San Juan counties.

(b) **APPLICABLE LAW.**—A right-of-way granted under subsection (a) shall be granted in perpetuity, except in the case of abandonment, and shall not require the payment of rental.

(c) **ADMINISTRATION**

(i) Each right-of-way granted by the Secretary under the provisions of this Title shall be perpetual, and shall consist of the full geographic extent authorized by Utah state law in effect as of January 1, 2016.

(ii) The appropriate holder of each right-of-way granted pursuant to this Title may be abandoned pursuant to state law.

(d) **FUTURE CLAIMS.** – Nothing in this section precludes the state or county from applying for future or existing rights-of-way on existing or new roads.

### **SEC. 1202. GRAND COUNTY COUNCIL RECOMMENDATIONS FOR CERTAIN ROADS.**

The recommendations of the Grand County Council, as depicted on the map titled “Grand County PLI Final Map 4-17-2015”, for Hey Joe Canyon, Tenmile Canyon, and Mineral Canyon roads shall be implemented by the Secretary of the Interior, with the seasonal closures beginning the Tuesday following Memorial Day through Labor Day.

## **Title XIII – Long-Term Grazing Certainty**

### **Sec. 1301 – Current Permitted Use**

Unless otherwise specified by this Act, on federal lands managed by the Secretary of Agriculture or the Secretary of the Interior in Summit, Duchesne, Uintah, Grand, Emery,

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Carbon, and San Juan Counties the grazing of domestic livestock shall continue at current permitted levels.

**Sec 1302-- Bighorn Sheep**

On federal lands managed by the Secretary of Agriculture or the Secretary of the Interior in Summit, Duchesne, Uintah, Grand, Emery, Carbon, and San Juan Counties, the viability or existence of bighorn sheep shall not be used to remove or alter the use of domestic sheep or cattle where such use was permitted as of January 1, 2016. If conflicts between bighorn sheep and domestic livestock can be resolved, and if current permittees consent to the terms of any resolution, the Utah Department of Wildlife Resources may conduct whatever means necessary to resolve such conflicts.

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## **DIVISION C – LOCAL PARTICIPATION**

### **Title I— LOCAL PARTICIPATION AND PLANNING**

#### **SEC. 2001. – Creation of Management Plans**

(a) **ESTABLISHMENT.** In order to facilitate the creation of the management plans for the National Conservation Areas, Special Management Areas, Watershed Management Areas, National Monument, Geologic Area, Recreation Zones, and Energy Planning Areas designated by this Act, there is created in each of the following counties, Summit, Duchesne, Uintah, Grand, Carbon, San Juan, and Emery Counties a Public Lands Initiative Planning Advisory Council.

(b) **PURPOSES.**—The Purpose of the County Public Lands Initiative Advisory Councils are to facilitate an open and transparent process for the creation of the management plans for the areas designated under this Act that require a management plan.

(c) **MANAGEMENT PLAN.** –

(1) **PLAN REQUIRED-** Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior and the Secretary of Agriculture shall develop management plans for the long-term management of each of the areas designated by this Act that require a management plan.

(2) **RECOMMENDATIONS AND CONSULTATION-** The Secretary of the Interior and the Secretary of Agriculture shall prepare the management plans in consultation and coordination with the County Public Lands Initiative Advisory Councils. If the Secretary of the Interior does not incorporate the recommendations submitted by the Advisory Council into the management plans, the Secretary of the Interior and Secretary of Agriculture shall submit a written explanation before the effective date of the management plan to the House Committee on Natural Resources and Senate Committee on Energy and Natural Resources outlining the reasons for rejecting the recommendations of the Advisory Council.

(3) **REQUIREMENTS-** Each management plan shall--

(A) Describe the appropriate uses and management of the designated area, as described by the purposes, uses, and additional provisions outlined in each relevant Title; and

(B) Include interpretive and educational materials regarding the recreational, cultural, economic, and biological resources of the region within which the designated area is located.

(C) Conform management plans for designated areas that cross County boundaries.

#### **SEC. 2002. - The Public Lands Initiative Planning Advisory Council**

(a) **County Public Lands Initiative Planning Advisory Council.** –

(1) **ESTABLISHMENT.**—Within 180 days after the date of enactment of this Act, the Secretary of the Interior shall establish in each of the Counties,

a Public Lands Initiative Advisory Council. (referred to as the Advisory Council”) to:

(A) advise the Secretary of the Interior and the Secretary of Interior and Secretary of Agriculture with respect to development and implementation of the management plans created under this Act to the greatest extent allowable by law.

(B) encourage and promote local participation in the decision making processes affecting the areas designated by this Act.

(2) MEMBERSHIP.— The Advisory Council shall consist of 11 members.

(3) MEMBERS.—The Secretary of the Interior shall appoint a member from each of the following groups:

(i) Two designees from the local county governing commission or council;

(ii) One representative of Native American interests;

(iii) One representative of the Utah Department of Natural Resources;

(iv) One local representative of a federal land management agency;

(v) One representative of the conservation community;

(vi) One representative of the off-highway vehicle community;

(vii) One representative of the agriculture community;

(viii) One representative of the energy development community;

(ix) One representative of the sportsmen community; and

(x) One representative of the outdoor recreation community.

(4) ELIGIBILITY.—The Secretary of the Interior shall determine that all individuals appointed to the Advisory Council, and the organization or industry each individual represents, support the mission of the group they are slotted to represent.

(1) TERMS.—

(A) IN GENERAL.— Except for the initial appointees, members of the Advisory Council shall be appointed for a term of 4 years. Members shall not be appointed for more than 3 consecutive or nonconsecutive terms.

(2) TERMS OF INITIAL APPOINTEES.—The Secretary of the Interior shall appoint the initial members of the Advisory Council as follows:

(i) 5 members shall be appointed for a term of 4 years;

(ii) 4 members shall be appointed for a term of 3 years; and

(iii) 2 members shall be appointed for a term of 2 years.

(5) PRESERVATION OF PUBLIC ADVISORY STATUS.—No individual may be appointed as a member of the Advisory Council while serving as an officer or employee of the Federal Government.

(6) VACANCY AND REMOVAL.—

(A) IN GENERAL.—Any vacancy on the Advisory Committee shall be filled in the manner in which the original appointment was made.

(B) REMOVAL.—Advisory Committee members shall serve at the discretion of the Secretary of the Interior and may be removed at any time for good cause.

May 18, 2016 -

(7) CONTINUATION OF SERVICE.—Each member may continue to serve after the expiration of the term of office to which such member was appointed until a successor has been appointed.

(8) CHAIR.—The Chair of the Advisory Council shall be appointed to a 3-year term by the Secretary of the Interior from among the members of the Advisory Council. An individual appointed to the Advisory Council under (4)(2)(iii) shall be eligible to serve as Chair, but may serve for two years. An individual may not be appointed as Chair for more than 2 consecutive or nonconsecutive terms.

(9) PAY AND EXPENSES.—Members of the Advisory Council shall serve without pay, but each member of the Advisory Council may be reimbursed for travel and lodging incurred through attending meetings of the Advisory Council (including approved workgroup or subgroup meetings) in the same amounts and under the same conditions as Federal employees in accordance with section 5703 of title 5, United States Code.

(10) MEETINGS.—

(A) IN GENERAL.—The Advisory Council shall meet at the call of the Secretary of the Interior, the chair, or a majority of the members, but not less frequently than twice annually.

(B) OPEN MEETINGS.—Each meeting of the Advisory Council shall be open to the public.

(C) PRIOR NOTICE OF MEETINGS.—Timely notice of each meeting of the Advisory Committee shall be published in the Federal Register and be submitted to publications of general circulation.

(D) SUBGROUPS.—The Advisory Council may establish such workgroups or subgroups as it deems necessary for the purpose of compiling information or conducting research. However, such workgroups or subgroups may not conduct business without the direction of the Advisory Council.

(11) QUORUM.—Nine members of the Advisory Council shall constitute a quorum.

(12) EXPENSES.—The expenses of the Advisory Council that the Secretary of the Interior determine to be reasonable and appropriate shall be paid by the Secretary of the Interior.

(13) ADMINISTRATIVE SUPPORT AND TECHNICAL SERVICES.—The Secretary of the Interior shall provide to the Advisory Council the administrative support and technical services.

(14) ANNUAL REPORT.—

(1) REQUIRED.—Not later than September 30 of each year, the Advisory Council shall submit a report to the Secretary of the Interior, the Committee on Natural Resources of the House of Representatives, and the Committee on Energy and Natural Resources of the Senate. If circumstances arise in which the Advisory Council cannot meet the September 30 deadline in any year, the Secretary of the Interior shall advise the Chair of each such Committee of the reasons for such delay and the date on which the submission of the report is anticipated.

(2) CONTENTS.—The report required by paragraph (1) shall describe—

(A) the activities of the Advisory Committee during the preceding year;

(B) the reports and recommendations made by the Advisory Council

May 18, 2016 -

to the Secretary of the Interior during the preceding year; and  
(C) an accounting of actions taken by the Secretary of the Interior as  
a result of the recommendations.

**SEC. 2003. – PLANNING COMPLETION**

(a) Upon completion of the management planning process, the Advisory Council shall advise the Secretary of Interior and the Secretary of Agriculture with regards to the implementation of the management plans and provide oversight to ensure proper implementation for the areas designated by this Act.

(b) Each advisory council shall meet at least twice per year following completion of the management planning process.

(c) This division will expire at whichever comes first, 7 years from enactment of this Act or 3 years after the management planning process concludes.

DOI



**From:** Lesofski, Emy (Appropriations)  
**To:** ["Smith, Linda"](#)  
**Subject:** RE: BLM Releases Statistics on Oil and Gas Activity on Federal, Indian Lands  
**Date:** Thursday, May 19, 2016 4:04:17 PM  
**Attachments:** [image001.png](#)

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Have you started reporting the statistics for FY16 quarterly again? And, have there been any delayed leasing that you haven't reported on? I'm following up on report language directives.

Also, can you give me a holler about a non-Wyoming issue? I'd appreciate it. Thanks!

**From:** Smith, Linda [mailto:lhsmith@blm.gov]  
**Sent:** Monday, April 11, 2016 2:38 PM  
**To:** Lesofski, Emy (Appropriations); Hunt, Ryan (Appropriations)  
**Subject:** Fwd: BLM Releases Statistics on Oil and Gas Activity on Federal, Indian Lands

As promised.....



## BLM NEWS RELEASE

U.S. Department of the Interior • Bureau of Land Management • Washington, D.C., Office • 1849 C Street N.W. • Washington, D.C.

**Bureau of Land Management**  
912-7410

**Contact:** Jeff Krauss – 202-

Matt Spangler – 202-  
208-7035

**For immediate release**

**Date:** April 11, 2016

### **BLM Releases Statistics on Oil and Gas Activity on Federal, Indian Lands**

*BLM Continues to See Production Growth and Deliver Drilling, Leasing  
Opportunities*

**WASHINGTON** – The Bureau of Land Management (BLM) today released fiscal year (FY) 2015 statistics for oil and gas permitting, leasing and drilling activity on lands where BLM permits are required. Production from those lands, both Federal and Indian, increased 10 percent over FY 2014 and went up more than 108 percent since 2008. This compares to an 88 percent increase in oil production nationally over the same period, based on data obtained from the Office of Natural Resources Revenue and the Energy Information Administration.

“Since the beginning of this Administration, we have instituted common sense reforms that promote responsible oil and gas development while protecting places that are too special to develop,” said BLM Director Neil Kornze. “The BLM has

done this while providing significant opportunities to develop energy resources in a responsible way through our leasing, permitting, and inspection activities.”

According to the statistics released today, in the past year the BLM approved 4,228 drilling permits – 3,508 on Federal lands and 720 on tribal lands – a 10 percent increase over the prior year. As a result, the number of approved drilling permits that have not yet been put to use by industry is at a record high of 7,500 – roughly 6,100 Federal lands and 1,400 tribal. These approved drilling permits are ready for immediate use without further review or approval by the agency.

As in prior years, the number of drilling permits that were processed far exceeded the number of wells that were actually drilled. In FY 2015, industry drilled 1,620 wells on Federal lands, which is less than half the number of drilling permits that the BLM approved during the period. In total, the oil and gas industry now holds nearly four years’ worth of ready-to-use permits, when measured at current drilling rates.

During the past fiscal year, the BLM also continued to offer significant new opportunities for leasing. In FY 2015, the BLM offered more than 4 million acres at 23 lease sale auctions; however, industry bid on just 15 percent of the acres offered. In total, 810,000 acres were leased (both competitively and non-competitively) in FY 2015.

At the end of the last fiscal year, there were 32.1 million acres of public land under lease -- an area the size of Alabama -- yet only 12.8 million acres were producing, an increase of 70,000 acres from the prior year. This activity came from 23,770 producing oil and gas leases and approximately 100,000 wells, both increases from the previous year.

Because oil and gas development is market-driven, broad market trends have an impact on activities on the public lands. Notably, there was a significant drop in oil and gas prices from 2014 to 2015. The NYMEX average price[1] of oil declined 43 percent from \$99.07 per barrel to \$56.54 per barrel, while the NYMEX average natural gas price[2] declined 28 percent during the same period.

Price declines contributed to some changes in activities on BLM-managed lands. The number of total acres leased (both competitively and non-competitively) declined to 810,000 in 2015 from 1.2 million the year before. Also, as a result of increased public interest, the number of lease sale parcels protested increased in 2015 – from 321 to 630 – after five years of declines, but still well below the high of 1,475 parcels protested in 2009.

“At the same time, we are working to modernize the program through online permitting, more rigorous bonding assessments, and smarter more effective regulations,” Director Kornze said.

For example, the BLM has ongoing cradle-to-grave management responsibilities on the nearly 100,000 wells it oversees. For a second year in a row, the BLM has completed 100 percent of all of its high-priority production inspections, despite not having a dedicated funding for this critical workload. To address the funding issue, this year’s budget request repeated prior requests for Congress to grant the

BLM the authority to charge modest fees to fulfill its important inspection and enforcement responsibilities. A similar authority already exists for ensuring effective offshore oil and gas inspections.

These and other statistics can be found on the [BLM's Energy Statistics](#) page as well as the Department of the [Interior's Data Portal](#).

The BLM's onshore oil and gas program spent \$138 million in appropriated funds last year, while [generating](#) more than \$2.1 billion in royalties, \$30 million in rental payments, and \$112 million in bonus bids, all of which were split between the U.S. Treasury and the states where the development occurred. In FY 2015, production from Federal and tribal onshore leases accounted for 11 percent of the natural gas and 7 percent of the oil produced in the United States.

The BLM continues to work diligently on its efforts to modernize its oil and gas program. These efforts have taken the form of proposed and final regulations to update rules that are more than 30 years old. The BLM also made continued progress in landscape-scale planning for oil and gas development in 2015 with the completion of six master leasing plans (MLPs) in Wyoming and Colorado, and the publication of a draft MLP for Moab, each of which are designed to increase transparency, public involvement, and address resource conflicts. Finally, the BLM is in the process of launching a new automated online permitting system and plans to pilot an online lease sale system later this year.

The BLM manages more than 245 million acres of public land, the most of any Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western states, including Alaska. The BLM also administers 700 million acres of sub-surface mineral estate throughout the nation. The BLM's mission is to manage and conserve the public lands for the use and enjoyment of present and future generations under our mandate of multiple-use and sustained yield.

## BLM

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[1] *NYMEX average price for delivery of West Texas Intermediate crude oil at Cushing, Oklahoma.*

[2] *2/NYMEX average price for delivery of natural gas to the Henry Hub in Louisiana.*

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Linda H. Smith  
Acting Deputy Assistant Director for Business, Fiscal, and Information Resources  
Bureau of Land Management  
Office: 202-208-4864  
Cell/Alternative Telework Number: 202-760-0379  
[lhsmith@blm.gov](mailto:lhsmith@blm.gov)



# **BLM NEWS RELEASE**

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U.S. Department of the Interior • Bureau of Land Management • Washington, D.C., Office • 1849 C Street N.W. • Washington, D.C.

**From:** Feldgus, Steve  
**To:** [Helfrich, Devin](#); [Fuge, Dylan](#)  
**Subject:** FACA Examples  
**Date:** Thursday, May 19, 2016 4:07:13 PM  
**Attachments:** [100stat955\\_1.pdf](#)

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Found a few... see Section 103 in the attached law, and also from a few of the following laws...

104 P.L. 333:

**SEC. 1007. ADVISORY COMMITTEE.**

(a) ESTABLISHMENT- There is established an advisory committee to be known as the 'Tallgrass Prairie National Preserve Advisory Committee'.

(b) DUTIES- The Advisory Committee shall advise the Secretary and the Director of the National Park Service concerning the development, management, and interpretation of the Preserve. In carrying out those duties, the Advisory Committee shall provide timely advice to the Secretary and the Director during the preparation of the general management plan under section 1005(g).

(c) MEMBERSHIP- The Advisory Committee shall consist of 13 members, who shall be appointed by the Secretary as follows:

(1) Three members shall be representatives of the Trust.

(2) Three members shall be representatives of local landowners, cattle ranchers, or other agricultural interests.

(3) Three members shall be representatives of conservation or historic preservation interests.

(4)(A) One member shall be selected from a list of persons recommended by the Chase County Commission in the State of Kansas.

(B) One member shall be selected from a list of persons recommended by appropriate officials of Strong City, Kansas, and Cottonwood Falls, Kansas.

(C) One member shall be selected from a list of persons recommended by the Governor of the State of Kansas.

(5) One member shall be a range management specialist representing institutions of higher education (as defined in section 1201(a) of the Higher Education Act of 1965 (20 U.S.C. 1141(a))) in the State of Kansas.

(d) TERMS-

(1) IN GENERAL- Each member of the Advisory Committee shall be appointed to serve for a term of 3 years, except that the initial members shall be appointed as follows:

(A) Four members shall be appointed, one each from paragraphs (1), (2), (3), and (4) of subsection (c), to serve for a term of 3 years.

**From:** Oppenheim, Noah  
**To:** ["jcmoran@blm.gov"](mailto:jcmoran@blm.gov)  
**Subject:** Utah oil and gas "protest leases"  
**Date:** Thursday, May 19, 2016 4:33:43 PM

---

Hello,

I am writing to follow up on a voicemail left with you the other day about BLM's potential reasonable diligence decision regarding oil and gas 'protest leases' in Utah. Any information you have on where the agency stands on this matter, whether a decision is pending, and the nature of a legal justification for such a decision would be most helpful. Thank you for your attention to this matter.

Best,  
Noah

Noah Oppenheim  
NOAA Sea Grant Fellow  
Rep. Jared Huffman (CA-02)  
1630 Longworth H.O.B.  
202-225-5161 | [huffman.house.gov](http://huffman.house.gov)

**From:** Clementson, Connie  
**To:** [ccdolocnty@fone.net](mailto:ccdolocnty@fone.net); [John Whitney](#); [Darlene Marcus](#); [McCoy-Harold, Ann \(Gardner\)](#)  
**Subject:** Fwd: News Release: BLM seeks comments on parcels offered in November oil and gas lease sale (5.18.16)  
**Date:** Thursday, May 19, 2016 4:38:01 PM

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Connie Clementson, Field Manager  
Tres Rios Field Office  
office 970-882-6808  
cell 970-394-4045  
email: [cclementson@blm.gov](mailto:cclementson@blm.gov)

# News Release

**BLM Colorado**

**For Immediate Release: May 12, 2016**

**Contact: Courtney Whiteman, Public Affairs Specialist, 303-239-3668**

## **BLM seeks comments on parcels offered in November oil and gas lease sale**

**DENVER –** The Bureau of Land Management is accepting public comments on its proposal to lease 35 parcels totaling 25,000 acres in the Royal Gorge, Grand Junction, Colorado River Valley and Tres Rios field offices at its Nov. 10, 2016, quarterly oil and gas lease sale.

The Royal Gorge Field Office released a preliminary environmental assessment evaluating six parcels in Huerfano, Las Animas, Lincoln and Washington counties; and the Grand Junction Field Office released a preliminary environmental assessment evaluating 24 parcels in Garfield and Mesa counties. Two of the parcels evaluated by the Grand Junction Field Office cross field office boundaries into the Colorado River Valley Field Office.

The BLM is also considering offering five parcels in Dolores County. These parcels were previously included in the February 2016 lease sale, but the BLM postponed the sale to allow more time for tribal consultation. The BLM analyzed the area where these parcels are located in the recently released BLM Tres Rios Field Resource Management Plan. The RMP incorporates the best available science to inform the BLM's leasing and other decision making.

Each lease, if issued, will contain stipulations and best management practices designed to address air quality and water resources while ensuring safe and environmentally responsible development. As part of leasing reform, the BLM may modify lease stipulations to accommodate site-specific resources.

The environmental assessments, lists and maps of the parcels, and the attached stipulations are online at [http://www.blm.gov/co/st/en/BLM\\_Programs/oilandgas/oil\\_and\\_gas\\_lease/20160/november\\_2016.html](http://www.blm.gov/co/st/en/BLM_Programs/oilandgas/oil_and_gas_lease/20160/november_2016.html).

Written comments must be received by June 13, 2016. Comments on the Royal Gorge parcels may be submitted to [BLM\\_CO\\_RG\\_Comments@blm.gov](mailto:BLM_CO_RG_Comments@blm.gov); comments on the Grand Junction parcels may be submitted to [BLM\\_CO\\_NWDist\\_public\\_comments@blm.gov](mailto:BLM_CO_NWDist_public_comments@blm.gov); and comments on the Tres Rios parcels may be submitted to [BLM\\_CO\\_TRFO\\_2016\\_lease\\_sale@blm.gov](mailto:BLM_CO_TRFO_2016_lease_sale@blm.gov). The most effective comments refer to a specific parcel and its associated resources.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

The State of Colorado receives 49 percent of the proceeds of each lease sale. In Fiscal Year 2015, Colorado received approximately \$247 million from royalties, rentals and bonus bid payments for all federal minerals, including oil and gas. Statewide, more than 22,900 jobs are tied to mineral and energy development on public lands.



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**From:** Moran, Jill  
**To:** [Oppenheim, Noah](#)  
**Subject:** Re: Utah oil and gas "protest leases"  
**Date:** Thursday, May 19, 2016 5:05:59 PM

---

Hi Noah,

Sorry for the delay - I would like to connect with the oil and gas program here in the Washington Office before we speak. I hope to meet with them tomorrow and will give you a call. Does that work for you?

Thanks,  
Jill

On Thu, May 19, 2016 at 4:33 PM, Oppenheim, Noah <[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)> wrote:

Hello,

I am writing to follow up on a voicemail left with you the other day about BLM's potential reasonable diligence decision regarding oil and gas 'protest leases' in Utah. Any information you have on where the agency stands on this matter, whether a decision is pending, and the nature of a legal justification for such a decision would be most helpful. Thank you for your attention to this matter.

Best,  
Noah

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1630 Longworth H.O.B.

202-225-5161 | [huffman.house.gov](http://huffman.house.gov)

--  
Jill Moran

Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

**From:** Oppenheim, Noah  
**To:** "[Moran, Jill](#)"  
**Subject:** RE: Utah oil and gas "protest leases"  
**Date:** Thursday, May 19, 2016 5:08:22 PM

---

Hi Jill, thanks for the quick response. I'd be happy to talk with you tomorrow. My availability is limited to 3:30 or 4, do either of those times work for you?

Cheers,  
Noah

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Thursday, May 19, 2016 5:06 PM  
**To:** Oppenheim, Noah <[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)>  
**Subject:** Re: Utah oil and gas 'protest leases'

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**From:** Oppenheim, Noah  
**To:** "[Moran, Jill](#)"  
**Subject:** RE: Utah oil and gas "protest leases"  
**Date:** Friday, May 20, 2016 1:04:16 PM

---

Following up to schedule a call... would appreciate speaking with you at 3:30 if you're available.  
Thanks!

Noah

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**From:** Moran, Jill  
**To:** [Oppenheim, Noah](#)  
**Subject:** Re: Utah oil and gas "protest leases"  
**Date:** Friday, May 20, 2016 1:15:30 PM

---

Hi Noah,

I've been trying all day to get an update from the program but several of the key folks are out on travel. I'm afraid I may not have the information for you by this afternoon. Can we plan on a call early next week?

Thanks,  
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Bureau of Land Management

Legislative Affairs Specialist

202.912.7411

--

Jill Moran

Bureau of Land Management

Legislative Affairs Specialist

202.912.7411

**From:** Oppenheim, Noah  
**To:** ["Moran, Jill"](#)  
**Subject:** RE: Utah oil and gas "protest leases"  
**Date:** Friday, May 20, 2016 3:25:00 PM

---

Hi Jill, no worries, thanks for your continued attention to the matter. Let's touch base on Monday to set up a time for a call.

Have a great weekend.

Best,  
Noah

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Friday, May 20, 2016 1:15 PM  
**To:** Oppenheim, Noah <[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)>  
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**Sent:** Thursday, May 19, 2016 5:06 PM

**To:** Oppenheim, Noah <[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)>

**Subject:** Re: Utah oil and gas 'protest leases'

Hi Noah,

Sorry for the delay - I would like to connect with the oil and gas program here in the Washington Office before we speak. I hope to meet with them tomorrow and will give you a call. Does that work for you?

Thanks,  
Jill

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Noah Oppenheim  
NOAA Sea Grant Fellow  
Rep. Jared Huffman (CA-02)  
1630 Longworth H.O.B.  
202-225-5161 | [huffman.house.gov](http://huffman.house.gov)

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist  
202.912.7411

--

Jill Moran  
Bureau of Land Management  
Legislative Affairs Specialist

202.912.7411

**From:** Oppenheim, Noah  
**To:** ["Moran, Jill"](#)  
**Subject:** RE: Utah oil and gas "protest leases"  
**Date:** Monday, May 23, 2016 12:19:26 PM

---

Hi Jill,

Hope you had a great weekend.

Please let me know when you will have information compiled for a call on activist leases and a reasonable diligence decision. At this point, a call on Wednesday morning would be best.

Cheers,  
Noah

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**From:** Oppenheim, Noah  
**Sent:** Friday, May 20, 2016 3:25 PM  
**To:** 'Moran, Jill' <jcmoran@blm.gov>  
**Subject:** RE: Utah oil and gas 'protest leases'

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**Sent:** Friday, May 20, 2016 1:15 PM  
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Following up to schedule a call... would appreciate speaking with you at 3:30 if you're available.  
Thanks!

Noah

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**To:** 'Moran, Jill' <[jcmoran@blm.gov](mailto:jcmoran@blm.gov)>  
**Subject:** RE: Utah oil and gas 'protest leases'

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**From:** Moran, Jill  
**To:** [Jonathan\\_McCracken@brown.senate.gov](mailto:Jonathan_McCracken@brown.senate.gov)  
**Subject:** time change  
**Date:** Tuesday, May 24, 2016 11:31:11 AM

---

Sorry, Jonathan - the Eastern States has requested a call with you at 2:00 pm. Please let me know if you are available.

Thanks,  
Jill

----- Forwarded message -----

**From:** Moran, Jill <[jcmoran@blm.gov](mailto:jcmoran@blm.gov)>  
**Date:** Tue, May 24, 2016 at 11:26 AM  
**Subject:** Wayne National Forest Update  
**To:** [Jonathan\\_McCracken@brown.senate.gov](mailto:Jonathan_McCracken@brown.senate.gov)

Hi Jonathan,

I have status update on the comment period regarding oil and gas leasing in Wayne National Forest. The BLM Eastern States Office will be putting out a press release on the matter later today. We would like to have a call with you first. Are you available today for a call at noon or 1?

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**From:** McCracken, Jonathan (Brown)  
**To:** [Moran, Jill](mailto:Moran, Jill)  
**Subject:** RE: time change  
**Date:** Tuesday, May 24, 2016 11:37:31 AM

---

I could do two. Thanks.

**From:** Moran, Jill [mailto:jcmoran@blm.gov]  
**Sent:** Tuesday, May 24, 2016 11:31 AM  
**To:** McCracken, Jonathan (Brown) <Jonathan\_McCracken@brown.senate.gov>  
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**From:** Moran, Jill  
**To:** [Oppenheim, Noah](#)  
**Subject:** Re: Utah oil and gas "protest leases"  
**Date:** Tuesday, May 24, 2016 12:55:16 PM

---

Hi Noah,

Would tomorrow morning at 11:00 am work for you?

Thanks,  
Jill

On Mon, May 23, 2016 at 12:18 PM, Oppenheim, Noah <[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)> wrote:

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**From:** Oppenheim, Noah  
**To:** ["Moran, Jill"](#)  
**Subject:** RE: Utah oil and gas "protest leases"  
**Date:** Tuesday, May 24, 2016 12:56:59 PM

---

Hi Jill, thanks for getting back to me. 11 tomorrow would be great, looking forward to speaking with you then.

Best,  
Noah

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Tuesday, May 24, 2016 12:55 PM  
**To:** Oppenheim, Noah <[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)>  
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**From:** Moran, Jill  
**To:** [McCracken, Jonathan \(Brown\)](mailto:McCracken_Jonathan_Brown)  
**Subject:** Re: time change  
**Date:** Tuesday, May 24, 2016 1:29:14 PM

---

Great. Please use the following call-in number:

(b) (5)

Passcode: (b) (5)

On Tue, May 24, 2016 at 11:36 AM, McCracken, Jonathan (Brown)  
<[Jonathan\\_McCracken@brown.senate.gov](mailto:Jonathan_McCracken@brown.senate.gov)> wrote:

I could do two. Thanks.

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Tuesday, May 24, 2016 11:31 AM  
**To:** McCracken, Jonathan (Brown) <[Jonathan\\_McCracken@brown.senate.gov](mailto:Jonathan_McCracken@brown.senate.gov)>  
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**From:** Lesofski, Emy (Appropriations)  
**To:** [Linda Smith](#)  
**Subject:** FW:  
**Date:** Tuesday, May 24, 2016 1:35:09 PM  
**Attachments:** [Permit Processing that ruined everything.docx](#)

---

SEC. 3021. BUREAU OF LAND MANAGEMENT PERMIT PROCESSING.

(a) Program to Improve Federal Permit Coordination.--Section 365 of the Energy Policy Act of 2005 (42 U.S.C. 15924) is amended--

- (1) in the section heading, by striking ``pilot'';
- (2) by striking ``Pilot Project'' each place it appears and inserting ``Project'';

[[Page 128 STAT. 3760]]

(3) in subsection (b)(2), by striking ``Wyoming, Montana, Colorado, Utah, and New Mexico'' and inserting ``the States in which Project offices are located'';

(4) in subsection (d)--

(A) in the subsection heading, by striking ``Pilot''; and

(B) by adding at the end the following:

``(8) Any other State, district, or field office of the Bureau of Land Management determined by the Secretary.'';

(5) by striking subsection (e) and inserting the following:

``(e) Report to Congress.--Not later than February 1 of the first fiscal year beginning after the date of enactment of the National Defense Authorization Act for Fiscal Year 2015 and each February 1 thereafter, the Secretary shall report to the Chairman and ranking minority Member of the Committee on Energy and Natural Resources of the Senate and the Committee on Natural Resources of the House of Representatives, which shall include--

``(1) the allocation of funds to each Project office for the previous fiscal year; and

``(2) the accomplishments of each Project office relating to the coordination and processing of oil and gas use authorizations during that fiscal year.'';

(6) in subsection (h), by striking paragraph (6) and inserting the following:

``(6) the States in which Project offices are located.'';

(7) by striking subsection (i); and

(8) by redesignating subsection (j) as subsection (i).

(b) BLM Oil and Gas Permit Processing Fee.--Section 35 of the Mineral Leasing Act (30 U.S.C. 191) is amended by adding at the end the following:

``(d) BLM Oil and Gas Permit Processing Fee.--

``(1) In general.--Notwithstanding any other provision of law, for each of fiscal years 2016 through 2026, the Secretary, acting through the Director of the Bureau of Land Management, shall collect a fee for each new application for a permit to drill that is submitted to the Secretary.

``(2) Amount.--The amount of the fee shall be \$9,500 for each new application, as indexed for United States dollar inflation from October 1, 2015 (as measured by the Consumer Price Index).

``(3) Use.--Of the fees collected under this subsection for a fiscal year, the Secretary shall transfer--

``(A) for each of fiscal years 2016 through 2019--

``(i) 15 percent to the field offices that collected the fees and used to process protests,

leases, and permits under this Act, subject to appropriation; and

``(ii) 85 percent to the BLM Permit Processing Improvement Fund established under subsection (c)(2)(B) (referred to in this subsection as the `Fund`); and

``(B) for each of fiscal years 2020 through 2026, all of the fees to the Fund.

``(4) Additional costs.--During each of fiscal years of 2016 through 2026, the Secretary shall not implement a rulemaking that would enable an increase in fees to recover additional costs related to processing applications for permits to drill.''.

[[Page 128 STAT. 3761]]

(c) BLM Permit Processing Improvement Fund.--

(1) In general.--Section 35(c) of the Mineral Leasing Act (30 U.S.C. 191(c)) is amended by striking paragraph (3) and inserting the following:

``(3) Use of fund.--

``(A) In general.--The Fund shall be available to the Secretary of the Interior for expenditure, without further appropriation and without fiscal year limitation, for the coordination and processing of oil and gas use authorizations on onshore Federal and Indian trust mineral estate land.

``(B) Accounts.--The Secretary shall divide the Fund into--

``(i) a Rental Account (referred to in this subsection as the `Rental Account`) comprised of rental receipts collected under this section; and

``(ii) a Fee Account (referred to in this subsection as the `Fee Account`) comprised of fees collected under subsection (d).

``(4) Rental account.--

``(A) In general.--The Secretary shall use the Rental Account for--

``(i) the coordination and processing of oil and gas use authorizations on onshore Federal and Indian trust mineral estate land under the jurisdiction of the Project offices identified under section 365(d) of the Energy Policy Act of 2005 (42 U.S.C. 15924(d)); and

``(ii) training programs for development of expertise related to coordinating and processing oil and gas use authorizations.

``(B) Allocation.--In determining the allocation of the Rental Account among Project offices for a fiscal year, the Secretary shall consider--

``(i) the number of applications for permit to drill received in a Project office during the previous fiscal year;

``(ii) the backlog of applications described in clause (i) in a Project office;

``(iii) publicly available industry forecasts for development of oil and gas resources under the

jurisdiction of a Project office; and

``(iv) any opportunities for partnership with local industry organizations and educational institutions in developing training programs to facilitate the coordination and processing of oil and gas use authorizations.

``(5) Fee account.--

``(A) In general.--The Secretary shall use the Fee Account for the coordination and processing of oil and gas use authorizations on onshore Federal and Indian trust mineral estate land.

``(B) Allocation.--The Secretary shall transfer not less than 75 percent of the revenues collected by an office for the processing of applications for permits to the State office of the State in which the fees were collected.''.

(2) Interest on overpayment adjustment.--Section 111(h) of the Federal Oil and Gas Royalty Management Act of 1982 (30 U.S.C. 1721(h)) is amended in the first sentence

[[Page 128 STAT. 3762]]

by striking ``the rate'' and all that follows through the period at the end of the sentence and inserting ``a rate equal to the sum of the Federal short-term rate determined under section 6621(b) of the Internal Revenue Code of 1986 plus 1 percentage point.''.

**From:** Chapman, Kyle (Boxer)  
**To:** [Dicerbo, Adrienne](#); [Scott Vandegrift \(sfvandegrift@fs.fed.us\)](mailto:Scott.Vandegrift@fs.fed.us)  
**Subject:** S.1423 - Central Coast Hrg Follow-up  
**Date:** Tuesday, May 24, 2016 1:44:11 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)  
[05.20.16 Additional Questions.docx](#)  
[05.10.16 Response to BLM Testimony.docx](#)  
[05.10.16 Response to USFS Testimony.docx](#)  
[05.17.16 Potential Wilderness Background.docx](#)

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Adrienne and Scott,

Thanks so much for your help so far in our Central Coast efforts. I appreciate the time you and your colleagues have given me in working through your concerns and issues.

After discussion with the advocates for the bill, I have compiled a list of responses and rationales to give you a better understanding of how the text was fashioned in the way it was.

We would very much like to continue progress and would appreciate further discussion in the near future. Please let me know if you have any questions. In the meantime, we would very much like for both agencies to collaborate on the maps necessary to advance the legislation.

Thank you so much,

Kyle  
202-224-8113

Kyle Chapman  
Legislative Assistant  
Office of U.S. Senator Barbara Boxer  
112 Hart Building  
Washington D.C. 20510  
202.224.3553

**Stay connected with [Senator Boxer](#)**















## **S.1423 – the Central Coast Heritage Protection Act**

Why was Section 5(g) – Horseback Riding included in the bill?

This language was included to help secure the support of equestrian organizations for the legislation. One equestrian organization, Ojai on Horseback, supports the legislation. The Back Country Horsemen are “neutral” on the legislation, after initially being staunchly opposed. Inclusion of this provision helped them reach their neutrality. Knowing that the BCH was neutral to the bill helped strengthen the coalition with the support of some trail advocate organizations.

Similar language has been included in other wilderness legislation including eastern Sierra (PL 111-11, Sec. 1803(j); and Sequoia (PL 111-11, Sec. 1903(e)).

Are there particular hunting organizations that requested the inclusion of Section 5(d)(3) – Wildlife Water Development – to allow for the maintenance of existing guzzlers?

David Hardt, a former manager for the Kern National Wildlife Refuge (USFWS), and volunteer with a group called Quail Forever requested this language be included. The concern at the time only applied to Carrizo Plain’s Temblor Range, as he and other members of his organization’s local chapter placed guzzlers in the region - even though BLM now requires permits for placement of such devices and now takes guzzler management into consideration in its ongoing NEPA process. These local chapter members wanted to use vehicles to access guzzler sites in the Temblor Range as had always been done.

The proposed wilderness boundaries for the Temblor Range were adjusted by BLM to allow for motorized access to the guzzlers – which was done after this provision was added to the text.

## **S.1423 – the Central Coast Heritage Protection Act**

### **Response to BLM Testimony from April 21, 2016 Senate ENR Committee Hearing**

#### Response to Bureau of Land Management – Dept. of the Interior

Issue #1 -“Cherry stem” exclusions in Caliente Proposed Wilderness Area: BLM would prefer to exclude the “cherry stem routes” from the northeast end of the Caliente proposed wilderness area. BLM relayed to staff that the existing routes are sometimes rarely used for scientific study purposes and that the land managers would prefer to keep those roads available. The map looks as though the routes are currently carved out, but they prefer a wider swath of land be carved out so land managers would not have to take the cherry stem routes or the surrounding land into wilderness management considerations.

***Response: California Wilderness advocates agree with BLM’s assessment and do not feel this is an issue of concern. They would like to review a revised map including BLM’s suggestions.***

Issue #2 – BLM land parcel in Machesna Potential Wilderness Area: BLM informed staff they have a parcel of land included within the Machesna Potential Wilderness area that is not currently reflected on the map that was made by USFS. BLM would like to work with USFS to to have that parcel reflected in future maps.

***Response: This is agreeable.***

Issue #3 – Additions of References to the Secretary of the Interior: BLM would like to add a reference that the Secretary of the Interior be added along with the Secretary of Agriculture in the provisions for the Black Mountain Scenic Area and the Condor National Recreation Trail as they have some BLM-managed lands that would be affected by both designations. The text of the bill currently only references the USDA Secretary.

***Response: This is agreeable. Staff will change the references of “the Secretary of Agriculture” to just “the Secretary” in Section 8(b)(1) and Section 8(b)(2) pertaining to the Black Mountain Scenic Area in order to allow the Secretary of the Interior the same authorities and responsibilities with the Secretary of Agriculture. Does BLM have lands affected by the designation of the Condor National Recreation Trail that would necessitate the addition of references to the Secretary of the Interior to the designating language? The text of the bill currently only references the USDA Secretary in Section 9 pertaining to the Condor Trail.***

Issue #4 – Correction of Reference to the National Trails System Act: BLM would like to correct an incorrect reference in Section 9(b) that incorrectly references the wrong section of the National Trails System Act. The legislation currently adds the Condor National Recreation Trail as an amendment to Section 5 of the National Trails System Act. However, Section 5 references and lists National Scenic and National Historic Trails. National Recreation Trails are cited in Section 4 of the same act and are designated at the discretion of the Secretaries of Interior and Agriculture.

***Response: The legislation currently adds the Condor National Recreation Trail as an amendment to Section 5 (Section 1244) of the National Trails System Act. The bill sponsors and stakeholders understand that Section 5 references and lists National Scenic and National Historic Trails and Section 4 pertains to National Recreation Trails being designated at the discretion of the Secretaries of Interior and Agriculture. In addition, it does not appear that the current law lists any designations of NRTs. Can an NRT be added to the National Trails System by an amendment to the NTSA? And if so, under what section of the NTSA? The bill sponsor is not aware of any legal impediment to Congress amending NTSA to add the CT as a NRT under Section 5 (Section 1244(a)(31) other than it would be the first NRT so designated.***

***Part of the rationale for including the Condor Trail as an amendment under NTSA is the concern that not being under NTSA leaves the trail's status ambiguous as to whether the trail is covered under NTSA and not just called an NRT in name only. By having it listed under NTSA, this approach guarantees that USFS (and BLM, where applicable) has direct management of the trail.***



## S.1423 – the Central Coast Heritage Protection Act

### Response to USFS Testimony from April 21, 2016 Senate ENR Committee Hearing

#### Response to U.S. Forest Service Testimony – Department of Agriculture

**Issue #1 – Updating of Maps:** *The Department would like to work with the bill sponsor and the Subcommittee to create legislative maps that would clarify the intention of the bill sponsor and ensure that the requirements in the bill are consistent.*

Response: The bill sponsors and wilderness advocates are happy to resolve any issues the agency may identify with the boundaries proposed on the maps previously made for the House sponsor, Congresswoman Lois Capps.

#### **Issue #2 – Sections 4 and 7 – Trail Realignment in Machesna Mountain Potential**

**Wilderness Area and Fox Mountain Potential Wilderness Area:** *The Department would like to work with the bill sponsor and Subcommittee to clarify whether section 4 and 7 are intended to create a corridor through the potential and later the actual designated wilderness for motorized and/or mechanized transportation, and if this trail corridor is within the boundary or outside the boundary of the potential areas and future wilderness additions.*

Response: The intent is to establish non-wilderness corridors that would be outside of the eventual wilderness areas. The concept is similar to that of a cherry stem, except it must first be decided where the trails should go before the cherry stems can be drawn around them.

OHV users want to realign and reconstruct the existing motorcycle route at Machesna Mountain because it is situated on a steep and erosive slope. At Fox Mountain, mountain bikers, hikers, and equestrians want to use the trails but some trails have disappeared completely because they are poorly-located and difficult to maintain. At both Machesna and Fox, it would be easier to identify appropriate new trail alignments, relocate and reconstruct trails, and maintain them in the future if mechanized and motorized equipment could be used to assist the efforts.

The compromise reached by wilderness advocates and recreational users, as reflected in the legislation, is to manage Machesna Mountain and Fox Mountain as potential wilderness *until such time* as the appropriate locations for the trails can be identified and the trails can be reconstructed using mechanized and motorized equipment. The trails would then become *non-wilderness corridors* so that they could be maintained with mechanized and motorized equipment in the future even as Fox and Machesna transition to standard wilderness. The

provision therefore does not allow for inappropriate mechanized or motorized activities in designated wilderness. Instead, it establishes a cherry stem for a feature that must be relocated.

\*Please see additional background document concerning the Potential Wilderness provisions.

**Issue #3 – Section 4(g) – Potential Wilderness Conversion Modification:** *Section 4(g) requires that the boundary of the potential wilderness area be modified to exclude the realigned or reconstructed trails. Because this process would place a burden on staff resources, the Department would like to suggest that the modification be made when the area converts to wilderness.*

Response: The boundaries of the non-wilderness corridors cannot be finalized by USFS until the new alignments for the trails are identified by volunteers and agency staff in the field. Wilderness advocates believe it does not make sense to wait until the flexibility in establishing boundaries is lost once the areas become full-fledged conventional wilderness. Advocates would like to discuss alternative methods for identifying appropriate locations for the trails and for establishing the future non-wilderness corridors around them. The text of the legislation tries to thread this needle.

**Issue #4 – Sections 4 and 7 – Fuels Treatment in Potential Wilderness Areas:** *Additionally, the Department would like to work with the Subcommittee on refinement of the potential wilderness boundaries so that they allow for possible fuel treatments around the periphery of the boundaries and better management of the areas.*

Response: This is agreeable. The intention of the wilderness advocates is to set the proposed wilderness boundaries back 300' from the centerlines of all roads that are legally-open to motorized vehicles for the specific purpose of allowing for roadside fuel treatments.

**Issue #5 – Section 5(b)(1) and (2) – Fire and Fuels Management:** *Additionally, as the Forest Service is no longer developing stand-alone fire management plans but is using the Wildland Fire Decision Support System, the Department would like to work with the bill sponsor and Subcommittee to refine this language to reflect the current practice and existing language in the Wilderness Act.*

Response: This is agreeable.

**Issue #6 – Section 5(b)(4)(A) – Delegation of Authority:** *In regards to Section 5(b)(4)(A), the Forest Service already has a process for delegation of authority. If this section remains, the Department would like to request that it does not override the Forest Service policy of retaining delegated authority at the regional level for heavy equipment approvals. This authority is not currently delegated to the Forest Supervisor level.*

Response: This is agreeable. This provision was included to address the apprehension held by some stakeholders that the heavy equipment permission authority process may lead to delays in mobilizing firefighting resources in wilderness. Since there is no evidence that such delays have occurred in California, we do not object to the agency seeking to change this provision in the bill.

**Issue #7 – Section 5(d)(2) – Fish and Wildlife Management Activities:** *The Department would like to work with the bill sponsor and Subcommittee to affirm that these activities are in accordance and consistent with an existing agreement between the State and the Forest Service. This agreement is an important guidance document for State and Forest Service responsibilities and when concurrence or approval is needed for certain activities.*

Response: This is agreeable. California wilderness advocates do not have an opinion on this issue.

**Issue #8 – Section 5(d)(3) – Wildlife Water Development:** *Section 5(d)(3) provides for a wildlife water development special provision and allows the use of motorized vehicles by other agencies or their designees. The Department would like to work with the bill sponsor and Subcommittee on language that would clarify that the activities are the minimum necessary to preserve wilderness character and comply with the appropriate environmental analysis and permitting.*

Response: This is agreeable. This provision was included at the request of the local hunting community in order to allow for the maintenance of existing “guzzlers.” Guzzlers are artificial water sources for wildlife. Guzzlers are usually maintained by volunteers who may or may not be coordinating the work with the California Department of Fish and Wildlife and either the BLM or USFS, depending upon whether the guzzlers are located in the Carrizo Plain NM or the Los Padres National Forest (though the latter does not seem to have any guzzlers in any of the proposed wilderness areas).

If both agencies dislike the language or want to see it changed, we would not object. The hunting community has relayed to us there are existing guzzlers that are being maintained with mechanized and motorized equipment and it is not the intention of the wilderness stakeholders to stop this activity as long as it is conducted in such a way as to not degrade wilderness values –

meaning that the hunters would simply be allowed to maintain existing guzzlers using the tools that were being used prior to the establishment of the wilderness areas. So, enlarging guzzlers, building new ones, building a road to one, etc., would all have to be reviewed under NEPA and would not be covered by this provision which only applies to the maintenance of existing guzzlers.

**Issue #9 – Section 5(g) – Horseback Riding:** *Section 5(g) states that nothing in this Act precludes horseback riding in, or recreational or commercial saddle or pack stock into wilderness areas or wilderness additions. Primitive recreation, including horse use, is already allowed by the Wilderness Act and commercial services are allowed to the extent necessary to meet the purposes of the Act. The Department would like to work with the bill sponsor and the Subcommittee to ensure that the current Wilderness Act commercial services definition is retained.*

Response: This is agreeable.

**Issue #10- Section 5(j) – Climatological Data Collection:** *Section 5(j) may authorize the installation and maintenance of climatological collection devices in wilderness areas for flood warning and flood control. The Department would like to work with the bill sponsor and the Subcommittee to determine if these installations can be located outside the boundary of the wilderness area or if there are other alternative areas that can meet the needs and objectives of climatological data collection.*

Response: This is agreeable. To our knowledge, no such devices exist at this time in any of the proposed wilderness areas. No one has ever asked about them. If both agencies dislike the language or want to see it changed, we would not object.

**Issue #11 – Section 6(e) and (f) – Piru Creek:** *The Department would like to work with the bill sponsor and the Subcommittee to clarify the scope of section 6(e) to ensure that it does not have any unintended consequences. Additionally, while motorized use of trails can be consistent with wild and scenic rivers designations, the Department has concerns that section 6(f) will limit the ability of the forest to make management decisions that best balance all uses and ensure that water quality and other river values are protected and enhanced in the future.*

Response: In regard to subsection (e):

*“(e) EFFECT.—The designation of Piru Creek under subsection (a) shall not affect valid rights in existence on the date of the enactment of this Act.”*

This language is identical to language in the Omnibus Public Land Management Act of 2009 (PL 111-11—Mar. 30, 2009) page 1059, which designated 7.25 miles of Piru Creek downstream of Pyramid Dam and Reservoir. Its primary purpose was (and still is) to provide assurance to the State of California and the United Water Conservation District that designation of the creek will not affect existing water rights associated with the operation of Pyramid Dam and Reservoir. Most of Piru Creek proposed for designation in S. 1423 is upstream of the dam, but there is about 9 miles of the lower creek (part of segment F and all of segment G) designated in the bill to which this language applies.

In regard to subsection (f):

*“(f) MOTORIZED USE OF TRAILS.—Nothing in this section shall affect the motorized use of trails designated by the Forest Service for motorized use that are located adjacent to and crossing upper Piru Creek.”*

This language recognizes existing Forest Service OHV Trails that cross upper Piru Creek in two places and that parallels much of segment B of the creek. Motorized and non-motorized recreation is one of the outstanding values of Piru Creek officially recognized by the Forest, which the agency is required to protect and enhance. In the Los Padres Forest Land Management Plan (Part 2, page 94, Sep. 2005), it is formally described as “Upper Piru Creek provides an outstandingly remarkable opportunity to recreate in and along a year-round stream.” But the agency’s detailed description of Piru Creek’s outstanding recreation value includes this:

The off-highway vehicle route is along the stream corridor provides an unusual experience for users since portions of the route are within the stream channel. This provides a challenging and different experience that is not readily available in southern California. (Southern California Forest Plans Revision, Wild & Scenic River Appendix).

Subsection (f) is intended to provide assurance to OHV users (the California Off Road Vehicle Association) that WSR designation will not affect valid existing motorized recreation along the creek. It does not prevent the Forest Service from taking action to manage or regulate this recreation under their existing regulations or the Endangered Species Act, Clean Water Act, or other laws.

**Issue #12 – Section 8 – Scenic Area Scenic Qualities:** *Section 8 designates the Condor Ridge Scenic Area and the Black Mountain Scenic Area. The Department would like to work with the*

*bill sponsor and the Subcommittee to strengthen the language to better emphasize the importance of protecting the scenic qualities of the area.*

Response: This is agreeable.

**Issue #13 – Section 8(f)(1) – Scenic Area Timber Harvesting:** *The Department would like to clarify if the restriction on timber harvesting in Section 8(f)(1) also includes other vegetation and fuel management activities.*

Response: That was certainly *not* the intent. In fact, we wanted to ensure that appropriate fire and fuels management activities could continue consistent with the maintenance of ecological and scenic values. We would welcome suggestions as to how the legislation could better clarify this intent.

**Issue #14 – Section 9 – Condor Trail Management:** *The Department would like to work with the bill sponsor and the Subcommittee to add “scenic” to the list of values the area promotes and to better define the use of the trail per segment. The Department would also like to clarify the intention of the bill sponsor on whether mechanized and motorized transport will be allowed in the Condor National Recreation Trail in the non-wilderness segments. Additionally, the Department is concerned that the language regarding acquisition of property rights and locating the trail on private land with a letter of consent is not adequate for obtaining an easement.*

Response: Adding “scenic” to the list of values is agreeable. Regarding the intentions of the use of the trail per segment and whether mechanized or motorized transport will be allowed in non-wilderness segments, it is the intention of the bill sponsor and the advocates that allowed uses of any given trail segment be determined at the particular level of management under the Forest Land Management Plan and applicable law and regulations of jurisdiction of which that segment is managed. It is also the intention of the sponsor and advocates that no designation of use for any segment be changed solely by the designation of any such segment becoming part of the Condor Trail.

**Issue #15 – Section 9 – Condor Trail Easements:** *The Department is concerned that the language regarding acquisition of property rights and locating the trail on private land with a letter of consent is not adequate for obtaining an easement.*

Response: The intention behind the language in Section 9(b)(31)(D) is to prohibit the use of eminent domain to acquire property for the trail corridor and to ensure that any rights acquired from private property owners are done so by a consensual transfer of those rights. This

prohibition was included to alleviate concerns from private landowners who might not otherwise support the trail designation. Second, to the extent that it is necessary to locate a portion of the Condor Trail on private land, it is the intention of the advocates to acquire those rights in perpetuity whether by recorded right of way or easement, or in fee. The trail advocates doubt they could raise the funding necessary to construct and maintain a trail segment over private land with only a (presumably revocable) letter of consent. They are already working on the first land acquisition. The Wilderness Land Trust will purchase the segment once the trail advocates obtain a third-party letter from the Forest Service.

**Issue #16 – Section 9(b)(31)(F) - Condor Trail Connectivity Study:** *The Department would like to work with the bill sponsor and Subcommittee to extend the study timeframe to five years, which would allow for the incorporation of the additional work into budget cycles and work planning priorities, especially considering that multiple studies would be required in the same timeframe.*

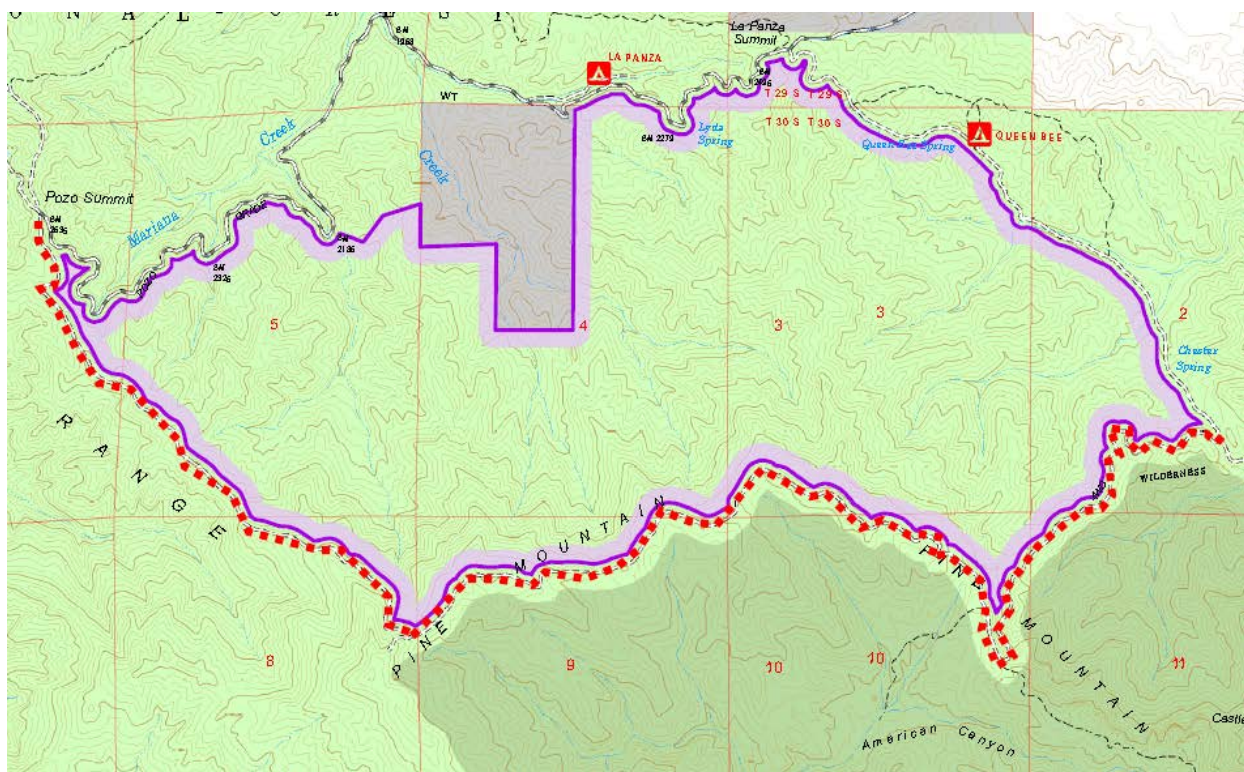
Response: The bill sponsor and stakeholders involved in the process would rather agree to extensions beyond the three-year timeframe for the study in hopes that the study may be completed in a timely manner – at the time of the deadline or shortly thereafter.

## S.1423 – the Central Coast Heritage Protection Act

### Potential Wilderness Area Background

#### *Machesna Mountain Potential Wilderness*

The Pine Mountain Trail is legally-open to OHVs and mountain bikes and is maintained with volunteer labor and funding from the California Department of Parks and Recreation’s OHV program. It is shown in red on the map below. The proposed Machesna Mountain Potential Wilderness is shown in purple. The Pine Mountain Trail currently serves as the western and southern boundaries of the potential wilderness with a 150 foot setback from the centerline.



San Luis Obispo County OHV and mountain bike enthusiasts believe the existing trail may need to be realigned in a few locations to decrease erosion and improve the route’s long-term sustainability. They believe the most optimum new alignments could potentially be more than 150 feet away from the current Pine Mountain Trail in a few locations. That would place the new route inside of the proposed wilderness boundaries. California wilderness advocates conducted an aerial analysis and on-site visit, consulted with USFS staff, and determined it was unlikely that any reroutes of the Pine Mountain Trail would significantly infringe on the lands stakeholders want to preserve. Potential wilderness therefore seemed like the perfect tool to



allow the USFS and its mountain bike and OHV partners the time needed to accomplish the rerouting work while still protecting the majority of the future wilderness addition 150 feet away.

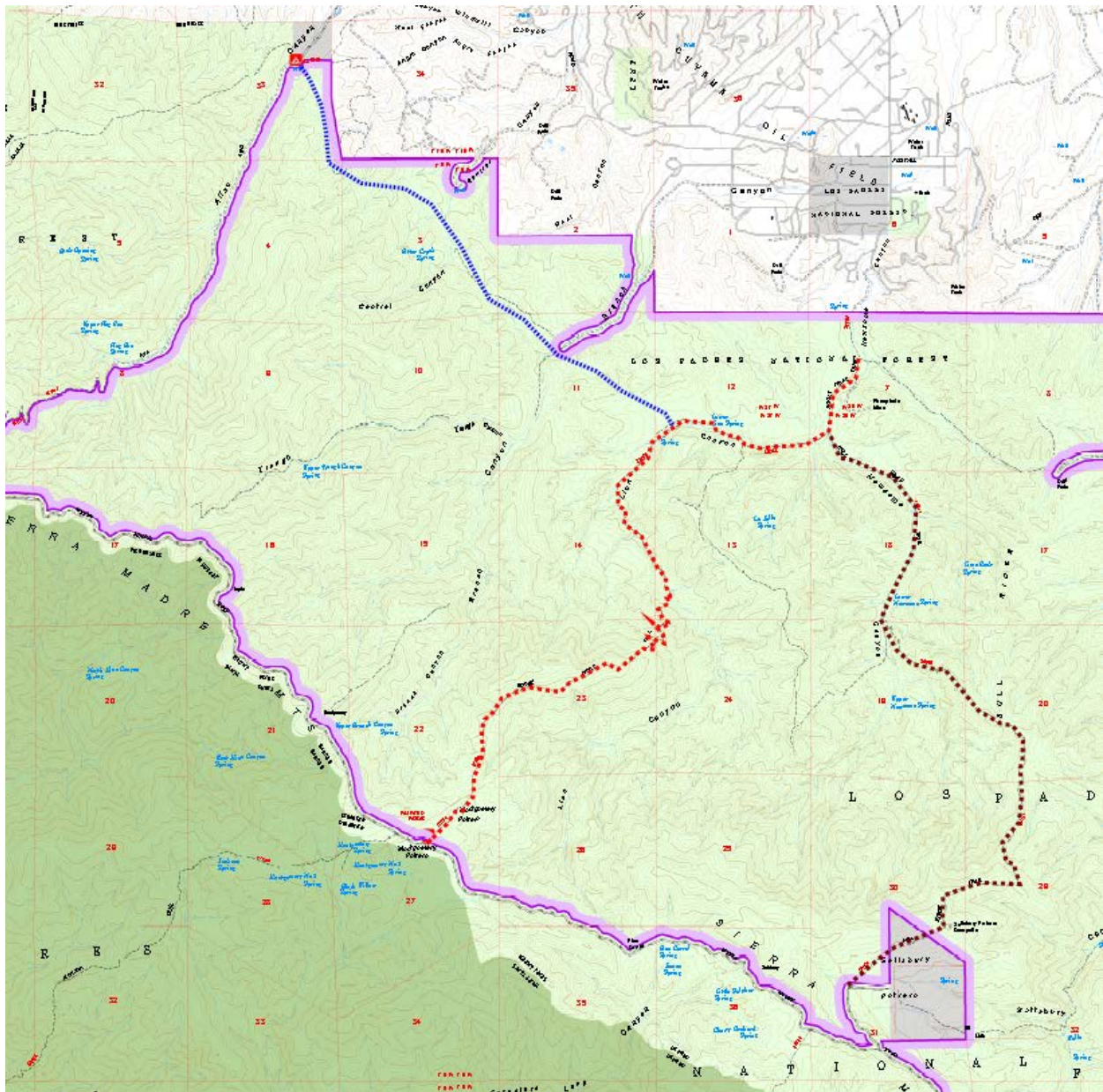
The specific steps needed to accomplish the work are up to the USFS and are not fully-detailed in the legislation. According to existing law and policy, something that will not be changed by the bill, the process would likely consist of the following steps:

1. USFS specialists survey the trail in the field and identify any necessary reroutes.
2. The agency uses a NEPA review process to determine whether or not to carry out the reconstruction in all or in part. As with all NEPA reviews, the public will have an opportunity to comment on the project.
3. If a decision is made to realign the trail at the end of the NEPA process, the USFS will seek funding to accomplish the work. The legislation states that motorized vehicles and equipment can be used in the effort to realign the trail, though this is something of a non-issue given that the Pine Mountain Trail is already a motorized route that is maintained with motorized equipment. The language will be helpful, however, if the work strays beyond the existing 150 foot setback into the proposed potential wilderness. The language also requires USFS to minimize impacts to wilderness values during realignment and reconstruction.
4. When the realignments are complete, USFS will publish a notice in the Federal Register stating that the final boundaries of the Machesna Mountain Wilderness have been established 150 feet from the centerline of the newly-relocated Pine Mountain Trail. The boundaries will be inviolate from that day forward.

If the agency decides to do nothing during the 20-year period, they can either publish a notice in the Federal Register to that effect or they can simply allow the boundaries as-passed to become permanent at the end of the 20-year period.

## *Fox Mountain Potential Wilderness*

The Fox Mountain situation is somewhat different. In this potential wilderness, there are two existing non-motorized trails that are currently open to hikers, equestrians and mountain bikers. These include the Bull Ridge Trail in brown and the Rocky Ridge Trail in red on the map below. Trail-users also want to create a loop-trail by establishing an entirely new route connecting the Aliso Campground to the existing trails. The reason for this is that Aliso Campground provides the only legal road access to this portion of the Los Padres National Forest. It is therefore the primary staging area for people seeking to visit the Fox Mountain/Sierra Madre Ridge area. The potential new trail is shown in blue on the map below.



The Bull Ridge and Rocky Ridge trails are not in very good shape. The trails are overgrown in many locations. In addition, as historic trails built over a century ago by ranchers and other Euro-American settlers, they were not built with erosion control and long-term sustainability in mind. They also come quite close to many noted archaeological sites and could possibly have been built on top of a few such sites out of ignorance. Recreationists and others would therefore like to relocate and rebuild the trails where necessary to minimize erosion and other impacts. Motorized and mechanized equipment would be the best tools for accomplishing the new construction and reconstruction. Once established, the three trails would then become non-wilderness corridors through the wilderness with a 50 foot setback from the centerline on each side so that they could continue to be used by mountain bikes and be maintained with mechanized and motorized tools. It is estimated that the roughly 12 miles of 100 foot-wide non-wilderness trail corridors would reduce the size of the proposed wilderness by only 150 acres.

The specific steps needed to accomplish the work are entirely up to the USFS and are not fully-detailed in the legislation. According to existing law and policy, something that will not be changed by the bill, the process would likely consist of the following steps:

1. USFS specialists survey the two existing trails in the field and identify any necessary reroutes.
2. USFS specialists identify the best route for the trail from Aliso Campground.
3. The agency uses a NEPA review process to determine whether or not to carry out the construction and reconstruction in all or in part. As with all NEPA reviews, the public will have an opportunity to comment on the project.
4. If a decision is made at the conclusion of the NEPA process to realign the two existing trails and to construct the new path, the USFS will seek funding to accomplish the work. As is stated in the legislation, the work can be accomplished using motorized and mechanized equipment. The language also requires USFS to minimize impacts to wilderness values during realignment and reconstruction.
5. When the realignments and new construction is completed, USFS will publish a notice in the Federal Register stating that the final boundaries of the wilderness have been established 50 feet from the centerlines of the three newly-relocated or constructed trails. The potential wilderness will then become part of the adjacent existing San Rafael Wilderness and its boundaries will be inviolate from that day forward. The three trails can continue to be maintained with motorized and mechanized equipment in the years to come.

If the agency decides to do nothing, USFS can either publish a notice in the Federal Register to that effect or they can simply allow the boundaries as-passed to become permanent after 20 years. In that case, the two existing trails would not be excluded from the wilderness and any

new construction or reconstruction will have to be conducted using existing authorities for building trails in wilderness. The area will also be closed to mountain bikes if USFS does nothing since the trails will not be excluded from the wilderness.

**From:** Smith, Linda  
**To:** [Taylor, Rachael \(Appropriations\)](#)  
**Subject:** Re: BLM Foundation  
**Date:** Tuesday, May 24, 2016 3:09:11 PM  
**Attachments:** [IM 2014-122, Evaluation of Activities within Railroad Rights-of-Way.html](#)

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Sorry to hear you weren't feeling well.

The IM is attached here.

On Tue, May 24, 2016 at 2:42 PM, Taylor, Rachael (Appropriations) <[Rachael\\_Taylor@appro.senate.gov](mailto:Rachael_Taylor@appro.senate.gov)> wrote:

Phone tag you are it

BTW is the memo below the one that you sent me in addition to the Cadiz solicitor's opinion, or is that a separate doc? (looks separate) If separate could you please send? Thanks.

In light of the November 2011 Solicitor's opinion M-37025, the **BLM issued Instruction**

**Memorandum 2014-122 in August 2014**, which provides specific guidance on the evaluation of

existing and proposed uses within rights-of-way granted under the General Railroad Right-of-

Way Act of March 3, 1875.

**From:** Smith, Linda [mailto:[lhsmith@blm.gov](mailto:lhsmith@blm.gov)]  
**Sent:** Tuesday, May 24, 2016 2:30 PM  
**To:** Taylor, Rachael (Appropriations)  
**Subject:** BLM Foundation

Good afternoon, Rachael. Please find attached a white paper and two-pager on the BLM Foundation to accompany the legislative language that was provided re: the 2017 request.

Am hoping to get an answer on the National Conservation Lands question later today.

Please let me know if we can be of further assistance.

**From:** Winkler, Jennifer (Appropriations)  
**To:** [Lesofski, Emy \(Appropriations\)](#); "[Smith, Linda](#)"; [Taylor, Rachael \(Appropriations\)](#)  
**Subject:** RE: BLM Foundation  
**Date:** Tuesday, May 24, 2016 5:13:39 PM

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The below text is what I was trying to reference. While I think that it was subsection (b) of the provision of the NDAA (Sec. 3021), I believe that it is subsection (d) of the underlying code.

Also, as I noted on the phone the reference to "(c)(3)(b)(ii)" should be to "(c)(3)(B)(ii)" as I have shown below in red.

### **30 USC 191**

#### **(d) BLM oil and gas permit processing fee**

##### **(1) In general**

Notwithstanding any other provision of law, for each of fiscal years 2016 through 2026, the Secretary, acting through the Director of the Bureau of Land Management, shall collect a fee for each new application for a permit to drill that is submitted to the Secretary.

##### **(2) Amount**

The amount of the fee shall be \$9,500 for each new application, as indexed for United States dollar inflation from October 1, 2015 (as measured by the Consumer Price Index).

**(3) Use** Of the fees collected under this subsection for a fiscal year, the Secretary shall transfer—

**(A)** for each of fiscal years 2016 through 2019—

**(i)** 15 percent to the field offices that collected the fees and used to process protests, leases, and permits under this chapter, subject to appropriation; and

**(ii)** 85 percent to the BLM Permit Processing Improvement Fund established under subsection (c)(2)(B) (referred to in this subsection as the "Fund"); and

**(B)** for each of fiscal years 2020 through 2026, all of the fees to the Fund.

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**From:** Lesofski, Emy (Appropriations)  
**Sent:** Tuesday, May 24, 2016 5:02 PM  
**To:** 'Smith, Linda'; Taylor, Rachael (Appropriations); Winkler, Jennifer (Appropriations)  
**Subject:** RE: BLM Foundation

Adding Jenny to this train...

**From:** Smith, Linda [<mailto:lhsmith@blm.gov>]  
**Sent:** Tuesday, May 24, 2016 5:01 PM  
**To:** Taylor, Rachael (Appropriations); Lesofski, Emy (Appropriations)  
**Subject:** Re: BLM Foundation

Just took a closer look and is *(d)(3)(A)(ii) of this section.*"; supposed to be *(b)(3)(A)(ii)?*

Still trying to reach SOL...

On Tue, May 24, 2016 at 4:02 PM, Taylor, Rachael (Appropriations) <[Rachael\\_Taylor@appro.senate.gov](mailto:Rachael_Taylor@appro.senate.gov)> wrote:  
This is the reworked language we will be discussing

*(3) section 35(d) of the Mineral Leasing Act (30 U.S.C. 191(d)) shall be applied for fiscal year*

*2017 as if the following were inserted after the period in subparagraph (4): “(5) There is appropriated to the Fee Account established in subsection (c)(3)(Bb)(ii) of this section, out of any money in the Treasury not otherwise appropriated, \$00,000,000 for fiscal year 2017, to remain available until expended, for the processing of applications for permit to drill and related use authorizations, to be reduced by amounts collected by the Bureau and transferred to such Fee Account pursuant to subsection (d)(3)(A)(ii) of this section.”;*

**From:** Smith, Linda [mailto:[lhsmith@blm.gov](mailto:lhsmith@blm.gov)]  
**Sent:** Tuesday, May 24, 2016 3:58 PM  
**To:** Taylor, Rachael (Appropriations)  
**Subject:** Re: BLM Foundation

standing by

On Tue, May 24, 2016 at 3:57 PM, Taylor, Rachael (Appropriations) <[Rachael\\_Taylor@appro.senate.gov](mailto:Rachael_Taylor@appro.senate.gov)> wrote:  
We will be calling in a couple mins

**From:** Smith, Linda [mailto:[lhsmith@blm.gov](mailto:lhsmith@blm.gov)]  
**Sent:** Tuesday, May 24, 2016 3:19 PM  
**To:** Taylor, Rachael (Appropriations)  
**Subject:** Re: BLM Foundation

I've got someone to cover my 3:30 meeting so I'm free from 3:30 to 4:30 this afternoon. Will that work?

On Tue, May 24, 2016 at 3:14 PM, Taylor, Rachael (Appropriations) <[Rachael\\_Taylor@appro.senate.gov](mailto:Rachael_Taylor@appro.senate.gov)> wrote:  
Thanks. Are you around this afternoon for a call on APD's? I have questions on how this might work, and Emy and our Full Committee staff who are trying to make the concept work need to close the loop as well. I know Emy is out right now at a meeting but is there a time you'll be there?

**From:** Smith, Linda [mailto:[lhsmith@blm.gov](mailto:lhsmith@blm.gov)]  
**Sent:** Tuesday, May 24, 2016 3:09 PM  
**To:** Taylor, Rachael (Appropriations)  
**Subject:** Re: BLM Foundation

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In light of the November 2011 Solicitor's opinion M-37025, the **BLM issued Instruction Memorandum 2014-122 in August 2014**, which provides specific guidance on the evaluation

of  
existing and proposed uses within rights-of-way granted under the General Railroad Right-of-Way Act of March 3, 1875.

**From:** Smith, Linda [mailto:[lhsmith@blm.gov](mailto:lhsmith@blm.gov)]  
**Sent:** Tuesday, May 24, 2016 2:30 PM  
**To:** Taylor, Rachael (Appropriations)  
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Linda H. Smith  
BLM Budget Officer  
Office: 202-912-7060  
Cell/Alternative Telework Number: 202-760-0379  
[lhsmith@blm.gov](mailto:lhsmith@blm.gov)

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[lhsmith@blm.gov](mailto:lhsmith@blm.gov)

**From:** Smith, Linda  
**To:** [Winkler, Jennifer \(Appropriations\)](#)  
**Cc:** [Lesofski, Emy \(Appropriations\)](#); [Taylor, Rachael \(Appropriations\)](#)  
**Subject:** Re: BLM Foundation  
**Date:** Tuesday, May 24, 2016 5:29:34 PM

---

Thanks, Jenny. They've picked it up and are taking a look - - will get back to you all tomorrow.

On Tue, May 24, 2016 at 5:13 PM, Winkler, Jennifer (Appropriations) <[Jennifer.Winkler@appro.senate.gov](mailto:Jennifer.Winkler@appro.senate.gov)> wrote:

The below text is what I was trying to reference. While I think that it was subsection (b) of the provision of the NDAA (Sec. 3021), I believe that it is subsection (d) of the underlying code.

Also, as I noted on the phone the reference to “(c)(3)(b)(ii)” should be to “(c)(3)(B)(ii)” as I have shown below in red.

### **30 USC 191**

#### **(d) BLM oil and gas permit processing fee**

##### **(1) In general**

Notwithstanding any other provision of law, for each of fiscal years 2016 through 2026, the Secretary, acting through the Director of the Bureau of Land Management, shall collect a fee for each new application for a permit to drill that is submitted to the Secretary.

##### **(2) Amount**

The amount of the fee shall be \$9,500 for each new application, as indexed for United States dollar inflation from October 1, 2015 (as measured by the Consumer Price Index).

**(3) Use** Of the fees collected under this subsection for a fiscal year, the Secretary shall transfer—

**(A)** for each of fiscal years 2016 through 2019—

**(i)** 15 percent to the field offices that collected the fees and used to process protests, leases, and permits under this chapter, subject to appropriation; and

**(ii)** 85 percent to the BLM Permit Processing Improvement Fund established under subsection (c)(2)(B) (referred to in this subsection as the “Fund”); and

**(B)** for each of fiscal years 2020 through 2026, all of the fees to the Fund.

---

**From:** Lesofski, Emy (Appropriations)  
**Sent:** Tuesday, May 24, 2016 5:02 PM  
**To:** 'Smith, Linda'; Taylor, Rachael (Appropriations); Winkler, Jennifer (Appropriations)  
**Subject:** RE: BLM Foundation

Adding Jenny to this train...

**From:** Smith, Linda [<mailto:lhsmith@blm.gov>]  
**Sent:** Tuesday, May 24, 2016 5:01 PM  
**To:** Taylor, Rachael (Appropriations); Lesofski, Emy (Appropriations)  
**Subject:** Re: BLM Foundation

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Still trying to reach SOL...

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This is the reworked language we will be discussing

*(3) section 35(d) of the Mineral Leasing Act (30 U.S.C. 191(d)) shall be applied for fiscal year 2017 as if the following were inserted after the period in subparagraph (4): “(5) There is appropriated to the Fee Account established in subsection (c)(3)(~~Bb~~)(ii) of this section, out of any money in the Treasury not otherwise appropriated, \$00,000,000 for fiscal year 2017, to remain available until expended, for the processing of applications for permit to drill and related use authorizations, to be reduced by amounts collected by the Bureau and transferred to such Fee Account pursuant to subsection (d)(3)(A)(ii) of this section.”;*

**From:** Smith, Linda [<mailto:lhsmith@blm.gov>]  
**Sent:** Tuesday, May 24, 2016 3:58 PM  
**To:** Taylor, Rachael (Appropriations)  
**Subject:** Re: BLM Foundation

standing by

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**Cc:** [Taylor, Rachael \(Appropriations\)](#)  
**Subject:** RE: BLM Foundation  
**Date:** Tuesday, May 24, 2016 5:43:50 PM

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**To:** Winkler, Jennifer (Appropriations)  
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**From:**  
**To:**

[bwestbur@blm.gov](mailto:bwestbur@blm.gov)

[Deb Coverdell](#); [Erin Slivka](#); [Matt Brown](#); [Steve Hoffman](#); [Ahlgren, Larry & Diane](#); [Archer, Barbara & Tully, Tom](#); [Austin, Damien](#); [Babcock, Michael](#); [Balasky, Cathy M](#); [Bass, Vern](#); [Bateman, Guy Dean](#); [Beam, Daryl](#); [Bechtold, Chris](#); [Bennett, Dan](#); [Bennett, Jim](#); [Birkland, Noel](#); [Bishop, Norman A](#); [Blixrud, Chuck](#); [Blunt, Troy](#); [Bob Clark](#); [Bogenschutz, George](#); [Borgreen, John](#); [Boyce, Mary](#); [Brenna, Jim](#); [Broesder, Sandra](#); [Broom, Douglas](#); [Brown, Bill](#); [Bullock, Steve](#); [Business, Anadarko Petroleum/Owens, Nick](#); [Business, Bear Gulch Irrevocable Trust/Boka Penny Jo](#); [Business, Central MT Outfitters, Inc./Yonkin, Dale](#); [Business, Conservation Seeding & Restoration](#); [Business, CP Callahan, Inc./Callahan, Paul](#); [Business, Deep Creek Ranch & Management Company, LLC/Bardwell, Adam](#); [Business, Devon Energy Corporation/Brimacombe, Lisa](#); [Business, Environmental Defense Fund/Toombs, Theodore](#); [Business, Finn Angus Ranch](#); [Business, Flatwillow Creek Outfitters/Kiehl, Dwane K.](#); [Business, God's Country Outfitters/Erickson, Parker Shane](#); [Business, Lek Ranch, LLC/Foster, Race](#); [Business, Montana Guide Service/Johnson, Edwin L.](#); [Business, Northern Rockies Outfitters/Birdsell, Rich](#); [Business, Northwestern Energy](#); [Business, Photo Science](#); [Business, Pigeon Basin Outfitters/Rogers, Pete](#); [Business, Rocking TS Cattle Company/Frost, Randy](#); [Business, Sinclair, Ralph W. & Kristy K.](#); [Business, Sustainable Obtainable Solutions/Flora, Gloria](#); [Business, Sustaining Landscapes LLC](#); [Business, Whiskey Ridge Outfitters/Knox, Stephen R.](#); [Byerly, Dave](#); [Cameron Sapp](#); [Carpenter, Steven](#); [Cassell, Bill](#); [Christi Weber](#); [Cohn, Dan](#); [Congress, US Congress Zinke, Ryan/Swift, Heather](#); [Consolvo, Camille](#); [CTVA Action Committee](#); [Cumin, Cal](#); [Cunningham, Bill](#); [Daily News, Havre](#); [Damone, Buck](#); [Darlington, Morgan](#); [Datko, Karen](#); [Dawn, Sierra](#); [Dellwo, Liz](#); [Demarais, Julie](#); [Deorah Goffena](#); [Dick Ellis](#); [Dullenty, Jim](#); [Dummer, Michael](#); [Ebert, Demian](#); [Enk, Michael](#); [Esper, Vaughn](#); [Faber, Tim](#); [Fairchild, Wayne](#); [Fisher, Corey](#); [Fisher, Richard](#); [Franks, Andrew](#); [Fraser, William](#); [Frieze, Mary](#); [Friskics, Scott](#); [FW6 BentonLake](#); [FW6 CMR](#); [G C Hughes](#); [Gene Sentz](#); [Gessaman, Kathleen](#); [Good, Mark](#); [Gordon, Don](#); [Gottardi, Henry](#); [Government, Cascade County Commission/Briggs, Joe, Salina, Bill & Weber, Jane](#); [Government, Choteau Mayor](#); [Government, Chouteau County DES/Williams, Linda](#); [Government, Chouteau County Fire Warden/Burdick, Vern](#); [Government, Fergus County Commission/Seilstad, Carl](#); [Government, Fergus County Commission/Youngbauer, Sandra](#); [Government, Hill County Commission/Wendland, Mike](#); [Government, Judith Basin County DES/Ostertag, Bonnie](#); [Government, Judith Basin County Fire Warden/Hedstron, Steve](#); [Government, Lewis & Clark County Weed Department/Hoffman, Larry](#); [Government, Lewistown City Manager/Myhre, Kevin](#); [Government, Lewistown Planning Director/Ferdinand, Duane](#); [Government, Meagher County Commission/Hurwitz, Ben](#); [Government, Meagher County Weed Department](#); [Government, MFWP Lewistown Area Res. Office/Anderson, Sonja Smith](#); [Government, MFWP Lewistown Area Res. Office/Smith, Clint](#); [Government, MFWP/Hagener, Jeff](#); [Government, Montana DES District 6 Representative/Gruener, Mark](#); [Government, MT DNRC Northeastern Land Office/Rooney, Clive](#); [Government, Petroleum County Conservation District/Hess, Carrie](#); [Government, Petroleum County Fire Warden/Grantier, Dave](#); [Government, Pondera County DES/Hermance, Leann](#); [Government, Teton County Commission/Dellwo, Joe](#); [Government, Teton County Fire Warden/Hodgskiss, Jim](#); [Government, Teton County Weed District/Wick, Paul](#); [Government, US Air Force Midwest Region Hill/Peterson Natural Resource 1st AFCEC AFCEC/CZO/Proctor, Jo](#); [Government, US Army Corps of Engineers - Fort Peck Project/McMurry, Darin](#); [Government, US Army Corps of Engineers Fort Peck Project/Daggett, John](#); [Government, US EPA Region 8/Platt, Amy](#); [Government, US Geological Survey](#); [Government, USDA FS Continental Divide NST/Warren, Greg](#); [Government, USDA FS L&C NF, Judith Ranger District/Wiseman, Ron](#); [Government, USDA FS L&C NF/Avey, Bill](#); [Government, USDA FS Nez Perce NHT Admin. Office/McFarland, Sandi](#); [Government, USDA FS Nez Perce NHT/Peterson, Roger](#); [Government, USDA FS-Helena & L&C NF/Woods, Jenny](#); [Government, USDI BLM/Lara Douglas](#); [Government, USDI FWS/Miller, Tim](#); [Gray, Randy](#); [Greene, Ronald C, Rev Dr](#); [Gregg, Kathy](#); [Grimstad, John W](#); [Grove, Adam](#); [Gwynn, Reverend Barbara](#); [Haefele, Fred](#); [Hallinan, Bill](#); [Hanley, Jerry](#); [Hanna, David](#); [Harding, Rita](#); [Harland, Don](#); [Haverlandt, Carol](#); [Hazelwood, Robert M.](#); [Hendricks, William C](#); [Herring, Hal](#); [Hommel, Scott](#); [Hotchkiss, Jay](#); [Hoy, Judy](#); [Hunnis, Jeff](#); [Hurd, David](#); [Ihle, Beth](#); [Iverson, Craig](#); [Janssen, Hayden](#); [Jean Public](#); [Jeffrey Baumberger](#); [Jennifer Owen](#); [Jennings, Chuck](#); [Jennings, Gerry](#); [Jennings, Peter](#); [Jim Evans](#); [Justo, Chere](#); [John Smith](#); [Johnson, Patrick J](#); [Johnston, Rebecca E., Elizabeth A. & Mari J./Camp Baker Outfitters/](#); [Jones, Bradley R](#); [Jones, Mary](#); [Josh R Kuntz](#); [Joy, Nicolas](#); [Kampschror, Beth](#); [Keaveny, Theresa](#); [Kenbeek, Seth](#); [Kent, Carl](#); [Kerr, Rick](#); [Kieran Suckling](#); [Kilby, Cheri](#); [Kirk Cunningham](#); [Kirkendall, Jack](#); [Knapp, Ralph W](#); [Knepper, Adam](#); [Knowles, Randall](#); [Knutson, Rick](#); [Koch, Tim](#); [Kopec, Len](#); [Kozaczuk, Sr., Dale](#); [LaVoi, Jeff](#); [Lee, Brian](#); [Lindsey Krause](#); [Lohrer, Laurie](#); [Lohrer, Roger](#); [Loomis, Clint](#); [Lovequist, John](#); [Lubbers, Robert](#); [Lucier, Katrina](#); [Mari, Dave](#); [Marino, Meghan](#); [Martin, Drew](#); [McCollum, Jim](#); [McKnight, Deva J](#); [Media, AgriNews/Western Livestock Reporter](#); [Media, Anaconda Leader](#); [Media, Associated Press](#); [Media, Associated Press \(MT\)](#); [Media, Belgrade News](#); [Media, Big Sky Weekly](#); [Media, Big Timber Pioneer](#); [Media, Billings Gazette/French, Brett](#); [Media, Billings Gazette/Johnson, Clair](#); [Media, Billings Gazette/Prosinski, Steve](#); [Media, Billings Outpost/Crisp, David](#); [Media, Blaine County Journal](#); [Media, Boulder Monitor](#); [Media, Bozeman Chronicle](#); [Media, Broadwater Reporter/Southwick, Trudie](#); [Media, Butte Weekly](#); [Media, Carbon County News/Baker, Alastair](#); [Media, Cascade Courier/O'Brien, Felicia](#); [Media, Cut Bank Pioneer Press](#); [Media, Fairfield Sun Times](#); [Media, Fort Benton River Press](#); [Media, Glacier Reporter](#); [Media, Glasgow Courier](#); [Media, Great Falls Tribune/Madison, Erin](#); [Media, Great Falls Tribune/Puckett, Karl](#); [Media, Harlowton Clarion Times](#); [Media, Havre Daily News/Kelleher, John](#); [Media, Helena Independent Record](#); [Media, Herald News](#); [Media, Hungry Horse News](#); [Media, Jordan Tribune](#); [Media, Judith Basin Press](#); [Media, Kalispell Daily Interlake](#); [Media, KCGM - 95.7 FM/Holbertson, Dixie](#); [Media, KFBB - TV](#); [Media, KGVV FM 88.1](#); [Media, KHEW FM 88.5](#); [Media, KLTZ](#); [Media, KMMR](#); [Media, KMON-FM](#); [Media, KOJM/Bruskii, Ron](#); [Media, KRTV - TV](#); [Media, KTVQ - TV](#); [Media, KULR 8 - TV](#); [Media, KXLO-KLCM/Lark, Fred](#); [Media, Laurel Outlook](#); [Media, Lewistown News-Argus](#); [Media, Lewistown News-Argus](#); [Media, Liberty County News](#); [Media, Livingston Enterprise](#); [Media, Lone Peak Lookout](#); [Media, Madisonian](#); [Media, Missoula Independent](#); [Media, Missoulian/Devlin, Sherry](#); [Media, Montana Standard/O'Brien, Gerard](#); [Media, Northern Ag Network](#); [Media, Phillips County News - Curtis Starr](#); [Media, Rocky Mtn. Energy](#); [Media, Roundup Record Tribune](#); [Media, The Mountaineer/Rettig, James](#); [Media, The Valerian](#); [Media, Yellowstone County News](#); [Media, Yellowstone Public Radio-KEMC FM/Yamanaka, Jackie](#); [Michael Ford](#); [Minard, Mac](#); [Moen, Phillip](#); [Molzahn, Julie](#); [Munther, Greg](#); [Nagel, Clint](#); [Neils, Kerry](#); [Newell, Susan W](#); [Newman, Dean & Linda](#); [Nilson, George D](#); [Nowlin, Laura](#); [Nuse, Eric](#); [O'Connor, Brian](#); [Obie, Donald](#); [Organization, Advisory Council on Historic Preservation/Fowler, John M.](#); [Organization, American Petroleum Institute/Ranger, Richard L.](#); [Organization, Big Spring Watershed Council/Chalmers, James](#); [Organization, Big Spring Watershed Partnership/Hawn, Ted](#); [Organization, Blackfoot Access Group](#); [Organization, East Glacier Chamber of Commerce](#);

[Organization, Fort Benton Chamber of Commerce](#); [Organization, Front Range Back Country Horsemen](#); [Organization, Geothermal Energy Association](#); [Organization, Greenfields Irrigation District](#); [Organization, Helena Area Chamber of Commerce](#); [Organization, Lewis & Clark Trail Heritage Foundation](#); [Organization, Meagher County Chamber of Commerce](#); [Organization, Montana Audubon Council/Hoffman, Steve](#); [Organization, Montana Cattlemen's Beef Association/Public Lands Council](#); [Organization, Montana Ducks Unlimited](#); [Organization, Montana Ducks Unlimited/McElroy, Tom](#); [Organization, Montana Ducks Unlimited/Taylor, Nora](#); [Organization, Montana Land Reliance-Devil's Kitchen Working Group/Delger-DeMars, Lois](#); [Organization, Montana Land Reliance-Sun River Working Group](#); [Organization, Montana Logging Association](#); [Organization, Montana Mining Association/Janacaro, Angela](#); [Organization, Montana Pilot's Association/Jarecki, Chuck](#); [Organization, Montana Stockgrowers Association/Swanz, John](#); [Organization, Montana Watershed Coordination Council](#); [Organization, Montana Wilderness Association-Eastern Wildlands Chapter/Sneed, Paul](#); [Organization, Montana Wilderness Association-Island Range Chapter/Lewis, Cathy](#); [Organization, Montana Wilderness Association/Gatchell, John](#); [Organization, Montanans for Responsible Energy Development/Cole, Mack](#); [Organization, Motorcycle Industry Council/Taylor, Duane](#); [Organization, Museum of the Rockies](#); [Organization, Musselshell Valley Chamber of Commerce](#); [Organization, National Resources Defense Council/Umekubo, Kate](#); [Organization, National Shooting Sports Foundation/Keane, Larry](#); [Organization, National Wildlife Federation/France, Tom](#); [Organization, Nature Conservancy-Pine Butte Ranch/Randall, Scott](#); [Organization, Nature Conservancy/Martin, Brian](#); [Organization, North Central Mineral Adventures/Kiehne, James](#); [Organization, Northwest Mining Association/Skaer, Laura](#); [Organization, Pheasants Forever - MT](#); [Organization, Public Lands Advocacy/Moseley, Claire M](#); [Organization, Rocky Mountain Elk Foundation/Dart, J.](#); [Organization, Rocky Mountain Wild/Smith, Rocky](#); [Organization, Safari Club International](#); [Organization, The Wilderness Society](#); [Organization, Trout Unlimited, Purvis, Cathy](#); [Organization, Wild Earth Guardians/Molvar, Erik](#); [Organization, Wildlands Network/Crumbo, Kim](#); [Organization, World Wildlife Fund](#); [Osher, Josh](#); [Otstot, Roger](#); [Patnode, Jeffrey](#); [Perkins, Casey](#); [Pete Smith](#); [Peter Nelson](#); [Peters, D'Jeane](#); [Poertner, Ron](#); [Price, Myra](#); [R Seidlitz](#); [Recce, Susan](#); [Regele, Deb](#); [Regele, Steve](#); [Richard Myers](#); [Ritland, Jay A. & Phyllis B.](#); [Robert S Wood](#); [Robert Sledd](#); [Robison, Charles](#); [Rogers, Ralph](#); [Ronquillo, Jim](#); [Rooney, Clive](#); [Salo, Ken](#); [Schatzke, Bethany](#); [Schultz, Nancy](#); [Siate, Erica](#); [Slacks, Mark](#); [Sledd, John](#); [Smith, Brian](#); [Stengle, James B](#); [Stephenson-Love, John](#); [Steven Riley](#); [Stogsdill, James](#); [Stubblefield, Ty](#); [Stuszek, Dan](#); [Theresa Taylor](#); [Thornton, Nancy](#); [Tigert, Coby](#); [Tingey, Wade](#); [Tompkins, Jaime](#); [Towne, Thomas](#); [Treharne, Andy](#); [Trevis Butcher](#); [Trib Newsy](#); [Tureck, Hugo](#); [Tuss, Elsie & Salisbury, Russell](#); [Udelhoven, Larry](#); [Updegraff, Dewey](#); [Van Hyning, Dyrck](#); [Van Hyning, Karen](#); [VanderBeek, Eric](#); [Vogel, Randy](#); [Walling, Gladys](#); [Webster, Joel](#); [Weekley, Mark](#); [Westman, J. W.](#); [Whirry, Gordon](#); [Wickens, Matthew R & Jamie L/Dog Creek Outfitters/Wickens, Matt](#); [Wiley, Dan](#); [Williams, Byron](#); [Willis, Rob](#); [Wilson, Mark](#); [Wirt, George](#); [Wolar, Dr. Glynn](#); [Wright, Jo Ann](#); [Wuerthner, George](#)

**Subject:** Lewistown Resource Management Plan (RMP) Newsletter  
**Date:** Tuesday, May 24, 2016 6:36:41 PM  
**Attachments:** [Lewistown RMP Newsletter May 2016 - Final Copy 508COMPL.pdf](#)

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The Spring 2016 issue of the *Lewistown RMP Update* is attached.

# Lewistown RMP Update

A BLM newsletter for the Lewistown Resource Management Plan

Volume 3

Spring 2016

BLM

The Lewistown Resource Management Plan (RMP) Revision and Environmental Impact Statement (EIS) will provide direction for managing 651,200 acres of public land surface and 1,196,800 acres of federal mineral estate in central Montana encompassing Cascade, Judith Basin, Meagher, Petroleum, Pondera, and Teton counties and portions of Fergus, Chouteau, and Lewis and Clark counties. These lands and minerals are managed by three Bureau of Land Management (BLM) offices located in Lewistown, Butte, and Great Falls.

## Where Are We Now ?

The BLM planning team, in conjunction with cooperating agencies, developed four alternatives containing unique goals, objectives, and actions that explore a range of opportunities to enhance public land management and best resolve conflicts among resources and resource uses. Each component of these four alternatives has been examined to compare the likely direct, indirect, and cumulative impacts on the human and natural environment that could occur from implementing one of the alternatives.

An internal administrative draft is currently under review. The Lewistown Draft RMP/EIS is expected to be published and available for public comment during late Summer/Fall 2016.

## RMP-related Documents Available Online

Since the last newsletter, BLM has been inventorying and evaluating resource data to use in development of the Lewistown RMP revision and EIS. The following new documents associated with this effort have been posted to the Lewistown RMP website at <http://blm.gov/ngld>:

- Areas of Critical Environmental Concern (ACEC) Report - January 2015
- Lands with Wilderness Characteristics Report – January 2016
- Wild and Scenic Rivers Eligibility Report – January 2015 (east half)

## Lands with Wilderness Characteristics Report

Section 201 of the Federal Land Policy and Management Act (FLPMA) requires the BLM to maintain an inventory of all public lands, their resources, and other values. This requirement directs the BLM to maintain and update, as necessary, its inventory of lands having wilderness characteristics. The land use planning process will be used to determine how to manage those lands containing wilderness characteristics as part of its multiple-use mandate.

## Areas of Critical Environmental Concern Report

As part of the process for developing the Lewistown RMP revision and EIS, the LFO interdisciplinary team reviewed BLM-managed lands in the planning area to determine whether any areas should be considered for designation as ACECs. These areas are defined as “areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources or other natural systems or processes; or to protect life and safety from natural hazards.” The report contains the analysis and the findings for existing and proposed ACECs within the planning area.



Lewistown Field Office



## What's Next?

The Draft RMP/EIS is expected to be available to the public for a 90-day comment period during late Summer/Fall 2016. The public will be notified of its availability for review and comment by newsletter, mailings, press releases, and the Lewistown RMP website.

During the public comment period, the BLM will host a series of public meetings throughout the planning area to help introduce the Draft RMP/EIS. Each meeting will provide an opportunity to talk individually with various resource specialists focusing on topics of interest, and will offer guidelines on how to comment effectively during the official comment period.

During the Fall/Winter of 2016, the BLM will review the public comments received on the Draft RMP/EIS. These comments will help refine the alternatives and will be incorporated into the Proposed RMP/Final EIS. We anticipate the Proposed RMP/Final EIS will be distributed to the public during the Summer of 2017.

Following the Governor's consistency review and the protest period, two Records of Decision (RODs), one for the Lewistown Field Office and another for the Butte Field Office, will be prepared and signed by the Montana State Director.

## Lewistown Wild and Scenic Rivers Eligibility Report (East Half)

The Wild and Scenic Rivers Act of 1968 directs federal agencies to consider potential Wild and Scenic Rivers in their planning processes. To fulfill this requirement, whenever a land use planning effort is undertaken, the BLM inventories and analyzes those river and stream segments that might be eligible for inclusion in the National Wild and Scenic Rivers System (National System). The Lewistown Wild and Scenic Rivers Eligibility Report (West Half) was completed in 2010 and the report for the eastern half was completed in 2015. Both documents are available online in the Documents and Reports section of the Lewistown RMP website.

## Lewistown Draft RMP/EIS Progress Update

### *Alternatives Development*

Alternatives development is the heart of the RMP process. Land use planning requires BLM to formulate a reasonable range of alternatives to produce distinct, potential scenarios that address the major land management issues identified during the public scoping period.

Between September 2014 and January 2015, the planning team, in conjunction with cooperating agencies, developed a range of four alternatives containing management goals, objectives, and actions that address deficiencies with current decisions, explore opportunities to enhance public land management, and resolve conflicts among resources and resource uses.

### *Environmental Consequences*

Each component of the four alternatives is examined to present the likely direct, indirect, and cumulative impacts on the human and natural environment that could occur from implementing any of the alternatives. Careful consideration of the environmental effects is essential to provide a logical and accurate basis for the selection of an alternative.



# Lewistown RMP Timeline

*Projected dates are approximate*

Preparation Plan: May 2013

Analysis of Management Situation: May 2014

Notice of Intent published in the *Federal Register*: February 10, 2014

Alternatives development and preparation of the Draft RMP/EIS: Fall 2014 - January 2016

Internal review of the Administrative Draft RMP/EIS: January 2016 - Summer 2016

Publish the Draft RMP/EIS: Summer/Fall 2016

90-day public comment period: Summer/Fall 2016

*Public meetings will be held throughout the planning area to provide information and receive comments to the Draft RMP/EIS.*

Proposed RMP/Final EIS available: Summer 2017

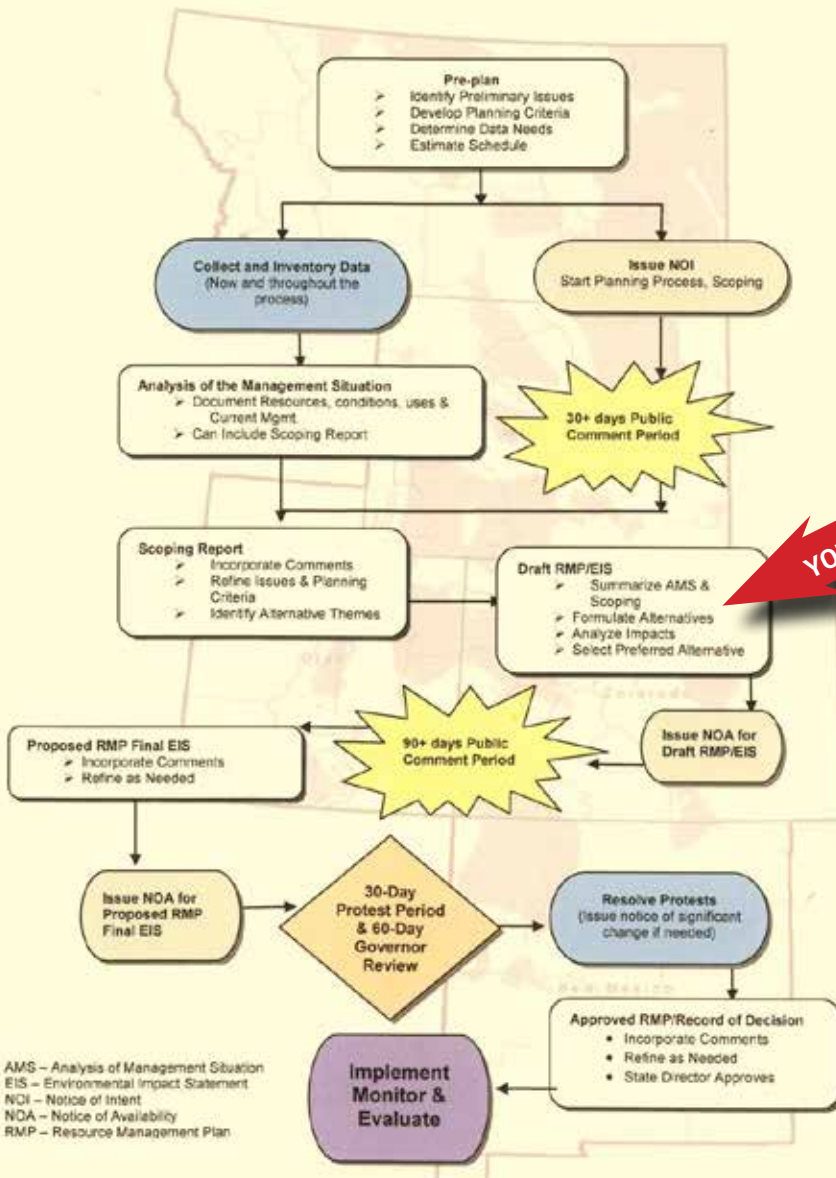
60-day Governor's Consistency Review: Summer/Fall 2017

30-day protest period: Fall 2017

Prepare Records of Decision (RODs): Winter 2017

 Completed

 Work in progress



AMS – Analysis of Management Situation  
 EIS – Environmental Impact Statement  
 NOI – Notice of Intent  
 NOA – Notice of Availability  
 RMP – Resource Management Plan





## How to Stay Involved and Informed

The Lewistown Draft RMP/EIS is currently undergoing internal review. Our goal is to have the draft available for a 90-day comment period by Summer/Fall 2016. We will be contacting you with information about open houses scheduled throughout the planning area.

Briefings regarding the RMP planning process can be requested anytime and BLM representatives are available to speak to organizations or groups about the Lewistown RMP.

Please contact:

Dan Brunkhorst  
Planning and Environmental  
Coordinator  
(406) 538-1981  
email: [dbrunkho@blm.gov](mailto:dbrunkho@blm.gov)

General correspondence can also be sent to the following email address: [blm\\_mt\\_lewistown\\_rmp@blm.gov](mailto:blm_mt_lewistown_rmp@blm.gov).

Visit our website at <http://blm.gov/ngld>.



<http://blm.gov/ngld>

BLM/MT/GI-16-003

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**From:** Moran, Jill  
**To:** [Oppenheim, Noah](#)  
**Subject:** Re: Utah oil and gas "protest leases"  
**Date:** Wednesday, May 25, 2016 10:00:50 AM

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Hi Noah,

We will be joined on the call by a representative from the BLM's Utah State Office, Ryan Sutherland. Just a heads-up - my understanding is that Utah is still waiting a decision from its Regional Solicitor's Office, but I wanted us all to at least touch base and hopefully answer some of your questions (with appropriate follow-up.)

Please use the following call-in info:

(b) (5)  
passcode: (b) (5)

I look forward to speaking with you at 11.

Thanks!  
Jill

On Tue, May 24, 2016 at 12:56 PM, Oppenheim, Noah <[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)> wrote:

Hi Jill, thanks for getting back to me. 11 tomorrow would be great, looking forward to speaking with you then.

Best,

Noah

**From:** Moran, Jill [mailto:[jcmoran@blm.gov](mailto:jcmoran@blm.gov)]  
**Sent:** Tuesday, May 24, 2016 12:55 PM  
**To:** Oppenheim, Noah <[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)>  
**Subject:** Re: Utah oil and gas 'protest leases'

Hi Noah,

Would tomorrow morning at 11:00 am work for you?

Thanks,

Jill

On Mon, May 23, 2016 at 12:18 PM, Oppenheim, Noah  
<[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)> wrote:

Hi Jill,

Hope you had a great weekend.

Please let me know when you will have information compiled for a call on activist leases and a reasonable diligence decision. At this point, a call on Wednesday morning would be best.

Cheers,

Noah

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**From:** Oppenheim, Noah  
**Sent:** Friday, May 20, 2016 3:25 PM  
**To:** 'Moran, Jill' <[jcmoran@blm.gov](mailto:jcmoran@blm.gov)>  
**Subject:** RE: Utah oil and gas 'protest leases'

Hi Jill, no worries, thanks for your continued attention to the matter. Let's touch base on Monday to set up a time for a call.

Have a great weekend.

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**From:** Moran, Jill [<mailto:jcmoran@blm.gov>]  
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**To:** Oppenheim, Noah <[Noah.Oppenheim@mail.house.gov](mailto:Noah.Oppenheim@mail.house.gov)>  
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Hi Noah,

I've been trying all day to get an update from the program but several of the key folks are out on travel. I'm afraid I may not have the information for you by this afternoon. Can we plan on a call early next week?

Thanks,

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Following up to schedule a call... would appreciate speaking with you at 3:30 if you're available. Thanks!

Noah

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**From:** Oppenheim, Noah  
**Sent:** Thursday, May 19, 2016 5:08 PM  
**To:** 'Moran, Jill' <[jcmoran@blm.gov](mailto:jcmoran@blm.gov)>  
**Subject:** RE: Utah oil and gas 'protest leases'

Hi Jill, thanks for the quick response. I'd be happy to talk with you tomorrow. My availability is limited to 3:30 or 4, do either of those times work for you?

Cheers,

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**From:** Moran, Jill [<mailto:jcmoran@blm.gov>]  
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Hi Noah,

Sorry for the delay - I would like to connect with the oil and gas program here in the Washington Office before we speak. I hope to meet with them tomorrow and will give you a call. Does that work for you?

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Hello,

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Noah Oppenheim

NOAA Sea Grant Fellow

Rep. Jared Huffman (CA-02)

1630 Longworth H.O.B.

202-225-5161 | [huffman.house.gov](http://huffman.house.gov)

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**Jill Moran**

Bureau of Land Management

Legislative Affairs Specialist

202.912.7411

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**From:** Oppenheim, Noah  
**To:** "[Moran, Jill](#)"  
**Subject:** RE: Utah oil and gas "protest leases"  
**Date:** Wednesday, May 25, 2016 10:19:04 AM

---

Thanks for the heads up, Jill. Talk soon.

Cheers,  
Noah

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**Sent:** Wednesday, May 25, 2016 10:00 AM  
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**From:** Riederer, Jason  
**To:** [Ralston, Jill \(jralston@blm.gov\)](mailto:jralston@blm.gov)  
**Cc:** [Provost, Rachel](#)  
**Subject:** BLM Southern Nevada District Office - Mineral Materials Program  
**Date:** Wednesday, May 25, 2016 11:14:24 AM  
**Attachments:** [Mineral Materials Presentation.pptx](#)  
[United States Department of the Interior Memo - Mineral Trespass Split Estate.docx](#)

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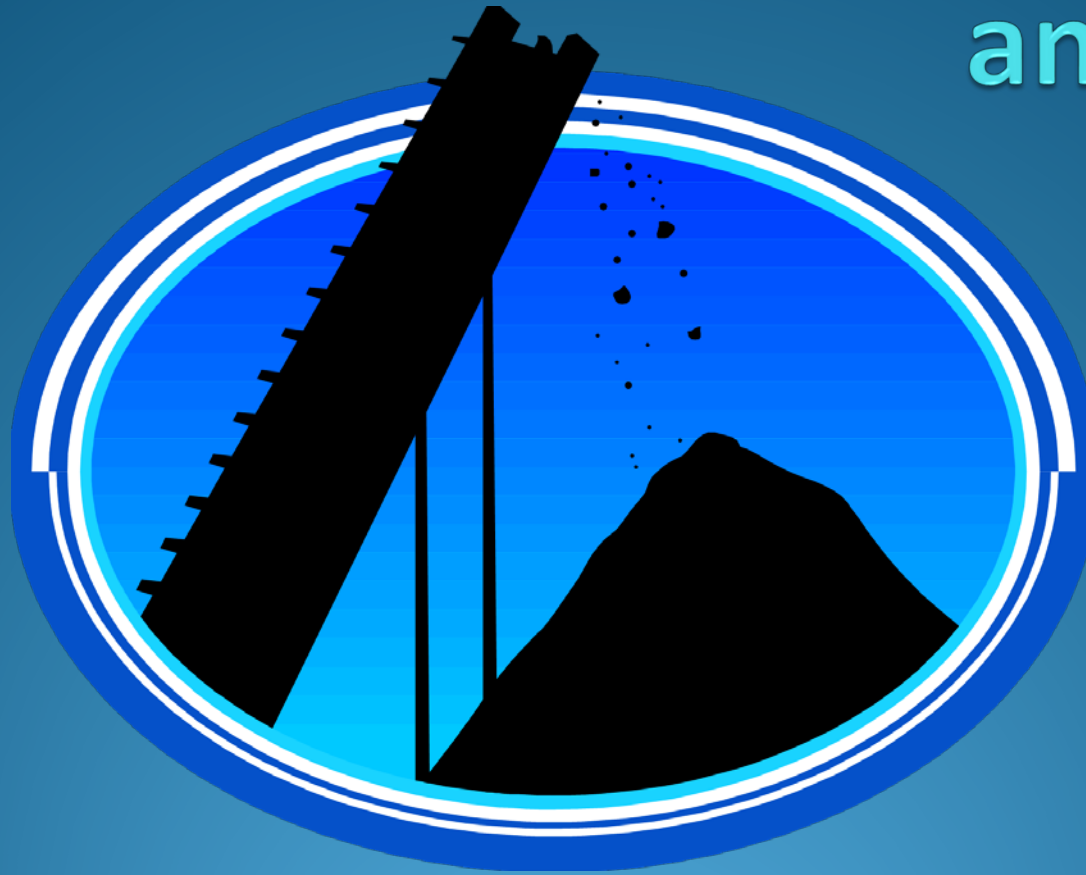
Hi Jill,

I owe you a phone call to discuss the Teen Ranch right-of-way, but I wanted to first share the Congressman's request to meet with the BLM Southern Nevada District Office Friday, June 3<sup>rd</sup>. I've copied Rachel who can share available times. But the Congressman wants to discuss the BLM's IM clarifying policies for mineral materials on split estate lands. Our office has received a substantial amount of correspondence from constituents and business owners from throughout the state regarding their fines and the Congressman wants to learn more about how this new policy is being executed, especially with developers in Southern Nevada.

Thank you,  
Jason

Jason M. Riederer  
Legislative Director  
Congressman Mark E. Amodei (NV-2)  
332 Cannon House Office Building  
Washington, D.C. 20515  
Phone: 202-225-6155  
[Amodei.house.gov](http://Amodei.house.gov)

# Mineral Materials and You!



A Practical Guide to Understanding the  
United States' Interest in the Mineral Estate.

# Mineral Materials and You

- Audience:
  - Right-of-way and lease holders
  - Property owners with reserved Federal minerals
  - Not sand and gravel or aggregate producers
- Focus:
  - Saleable mineral materials
  - Not locatable & leasable minerals
- Objective:
  - Familiarize you with the issues surrounding Federal minerals
  - Explain what you need to know before you develop
  - Discuss mineral material sales and FUPs

# Authority: Materials Act of 1947

- Gave the Secretary of the Interior the right to dispose of (sell) mineral materials
  - Mineral materials = common varieties of sand, gravel, stone, pumice, cinders and clay
- Provided for the free use of mineral materials to any Federal, State, Territorial agency, municipalities, or non-profit organizations
  - Minerals must not to be used for commercial or industrial purposes
  - Minerals must not be traded or resold

# Additional Authorities

- Multiple Surface Use Act of 1955:
  - Amended the Mineral Act of 1947 to allow for multiple uses of the same tracts of public lands
  - Removed common varieties of minerals from location
- Federal Land Policy and Management Act of 1976
  - Sec. 209: conveyances of title issued by the Secretary shall reserve all minerals and the right to mine those minerals
- Very Important:
  - Most patents these days reserve the mineral estate – creating split estates
    - Especially those in Las Vegas Disposal Boundary – SNPLMA
  - Many patents issued under other acts (e.g. Small Tract Act, Stock-Raising Homestead Act, etc.) reserved the mineral estates



# Mineral Materials Regulations (43 CFR 3600)

- 43 CFR 3600
- Govern how the BLM:
  - Disposes of mineral materials
  - Issues FUPs for mineral materials
- Mineral materials:
  - Common varieties of sand, gravel, stone, pumice, pumicite, cinders and clay
  - In other words; sand and gravel, fill, boulders, etc.
    - Most everything you are building on/within

# Who Do These Regulations Affect?

- Not just mining and construction companies
- Laws and regulations affect:
  - Right-of-way and lease holders on BLM lands
  - Local governments and non-profits who need mineral materials to develop their sites
  - Private property owners where the minerals are reserved to the United States (i.e. Split estate parcels)
- Let's look at some examples

# Pipeline Projects



# Detention Basins



# School Site



# Road Construction



# Power Line Projects



# New Home Developments & Commercial Areas





# Projects That Impact Minerals

- Almost Always Generate Excess/Use Minerals:
  - Detention Basins
  - Drainage Channels
  - Pipelines
  - Water Reservoirs
- Sometimes Generate Excess/Use Minerals:
  - Park and School Sites
  - Roads
  - Power Lines
  - Housing Developments
  - Commercial Developments
- Never Generate Excess/Use Minerals:
  - N/A

# Right-of-Way Regulations (43 CFR 2800)

- Mineral material use within a ROW:
  - 2805.15: What rights does the United States retain?
    - (c) Retain ownership of timber and vegetative or mineral materials and any other living or non-living resources
    - You may not use mineral materials, except as noted in 2805.14(e)
  - 2805.14: What rights does a grant convey?
    - (e) You may use mineral materials generated within the ROW, without additional BLM authorization, when:
      - They are generated during construction
      - They are used within the ROW
- Excess mineral materials leaving a ROW can only do so with a sales contract or FUP

# Leases: R&PP (Resource & Public Purpose)(43 CFR 2900)

- Mineral material use within a R&PP:
  - 2912.1-1: Terms and Conditions of Lease
    - (g) All leases shall reserve all mineral together with the right to mine and remove those minerals
- Excess mineral materials leaving a R&PP can only do so with a sales contract or FUP

# Split Estate

- Split Estate occurs when:
  - Surface estate owner & mineral estate owner differ
  - Typically the surface owner is private
    - Includes individual land owners, developers, states and local governmental agencies, etc.
  - Typically the minerals are reserved to the United States

# Split Estate Mineral Use (43 CFR 3600)

- 3601.71 (b): Surface owners may use mineral materials within the boundaries of the surface estate without contract or FUP if:
  - You use a minimal amount for personal use (more to follow)
  - You have statutory authority to use
  - You have other express authority to use
- Uses beyond the above require a mineral material sales contract or FUP from the BLM
- Exporting minerals to another property or project always requires a contract or FUP

# Minimal Personal Use

- Explained in the preamble to the *Federal Register* notice when the regulations were published
  - Example: Would include moving mineral materials to dig a personal swimming pool and using those excavated materials for grading or landscaping on the property
  - Example: Would not include large-scale use of mineral materials, even within the boundaries of the surface estate

# Minimal Personal Use

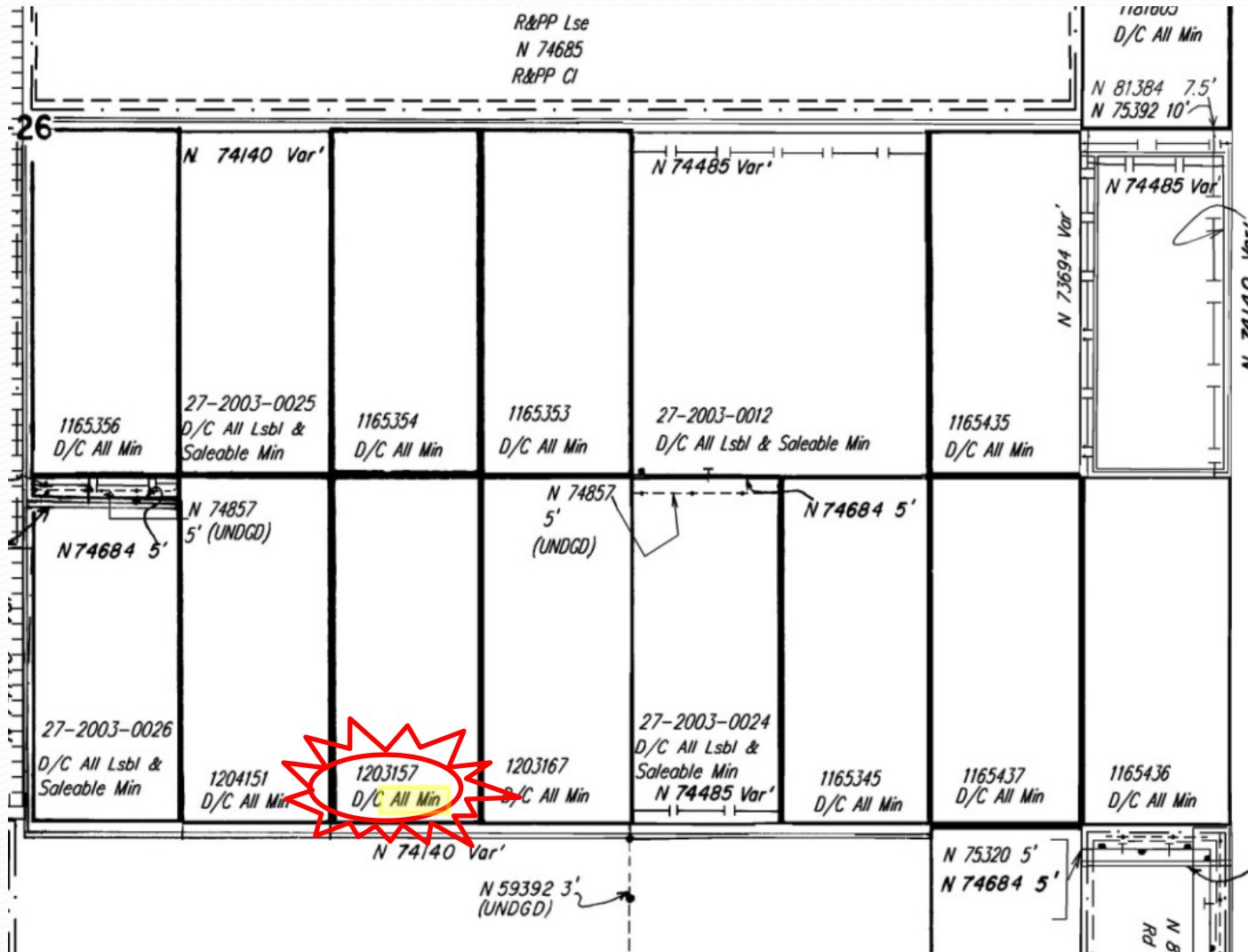
- Further explained in IM 2014-85
  - Minerals must be excavated in connection with the surface use of the property
    - Cannot “borrow material”
  - Minerals must not be altered in any way
    - Separation of various components or alteration of mineral is not personal use
      - Examples include screening and crushing
  - Material must not be used for or in connection with construction
    - Examples include road base, building foundations, utility installation, ornamentation, etc.

# How to Determine Mineral Ownership

- Check the BLM Master Title Plat (MTP)
  - Reservations are noted under the patent number
  - Look for the following (for example):
    - All Mins
    - Saleable Min
    - Saleable
    - All Leasable and Saleable
    - Sand
    - Sand & Gravel
    - Etc.



# Sample MTP w/Mineral Reservations



# How to Determine Mineral Ownership

- Check the Patent
  - Reservations are typically noted under the section titled “Excepting and Reserving to the United States”
  - Look for similar key words as you would on the MTP
  - For example:

## EXCEPTING AND RESERVING TO THE UNITED STATES:

1. A right-of-way for ditches or canals by the authority of the United States pursuant to the Act of August 30, 1890 (43 U.S.C. 945); and
2. All leasable and saleable mineral deposits in the land so patented, and to it, its permittees, licensees, and lessees, the right to prospect for, mine, and remove the minerals owned by the United States under applicable law and such regulations as the Secretary of the Interior may prescribe, including all necessary access and exit rights.

# Mineral Contract Facts

So you need a mineral material sales contract?



# Mineral Contract Facts

- You need a contract when:
  - When excess mineral materials need to be exported from your split estate, ROW or lease
  - When minerals will be used within split estate property beyond minimal personal use
- Important Notes:
  - Contract needs to be obtained from the BLM before the minerals are removed or used
  - You cannot:
    - Give minerals to your construction contractor
    - Leave them for the surface owner
    - Make a deal/trade for discounts
  - You are ultimately responsible for minerals & your contractor

# Types of Disposals: Mineral Material Sales Contracts

## Non-Competitive

- Up to 200,000 CY in one contract
- Up to 300,000 CY in one calendar year to a single operator under multiple contracts
- Up to 400,000 CY if the sale is associated with an urgent public works project
- If the BLM determines that the circumstances make it impossible to obtain competition
- Insufficient time for competitive sale due to emergency situation affecting public property, health or safety

## Competitive

- For any sales over the noncompetitive volume limits
- Anytime the BLM determines there is a competitive interest

# How to Obtain a Mineral Material Sales Contract

- Send a letter to the BLM with the following information:
  - Name contract will be made out to
    - Company or individual with title, address and phone #
  - Primary contact info
    - Name, title, phone #, address
  - General location
  - Associated parcel, right-of-way, lease number
  - Legal land description
    - Township, range, section and aliquot parts (accurate to 5 acres or less)
  - Disturbance area
    - Provide a map & the total acres
  - Amount of material requested
    - In bank cubic yards, loose cubic yards or tons
  - Time frame to remove the material
    - Years, months and/or days
  - Provide a brief explanation of your activities
- Who, What, When, Where, How

# Mineral Material Sales Contract

Form 3600-9  
(November 2008)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**CONTRACT FOR THE SALE OF MINERAL MATERIALS**

FORM APPROVED  
OMB NO. 1004-0185  
Expires: September 30, 2011

Office \_\_\_\_\_  
Contract Number \_\_\_\_\_

The UNITED STATES OF AMERICA acting through the Bureau of Land Management (BLM), and you, the purchaser, make this AGREEMENT, under the authority of the Act of July 31, 1947 (61 Stat. 681), as amended at 30 U.S.C. 601 through 604, and the regulations at 43 CFR, Group 3600.

We agree:  
Sec. 1. *Contract area* - Under the terms and conditions of this contract, the United States sells to you and you buy the mineral materials listed in Section 2 and contained in the following lands as shown on the map and mining plan attached to this contract:

COUNTY	STATE	TOWNSHIP	RANGE	SECTION	ALIQUOT PARTS	MERIDIAN	ACREAGE

Pit Name (if any): \_\_\_\_\_

Sec. 2. *Amount and price of materials* - The United States determines the total purchase price by multiplying the total quantity of each kind of mineral material designated by the unit price given below, or as changed through reappraisal.

KIND OF MATERIALS	QUANTITY (Units Specified)	PRICE PER UNIT	TOTAL PRICE
TOTAL			

BLM's determination of the amount of materials that you have taken under the contract is binding on you. You may appeal this determination as provided in Section 19.

You are liable for the total purchase price, even if the quantity of materials you ultimately extract is less than the amount shown above. You may not mine more than the quantity of materials shown in the contract.

Sec. 3. *Payments, title, and reappraisals* - You may not extract the materials until you have paid in advance for them in full \$ \_\_\_\_\_, or paid the first installment of \$ \_\_\_\_\_.

(Continued on page 2)

(c) The United States will retain the first installment as security for your full and faithful performance and will apply it to the last installment required to make the total payment equal to the total price given in Section 2.

The total purchase price equals the sum of the total quantities removed, multiplied by their respective unit prices.

If you are late making an installment payment, you must not remove any more material until you have paid. Removing material you have not paid for is trespass, and for trespass you must pay triple the appraised unit price, or at triple the appraised unit price if BLM has made a reappraisal. If you are late making an installment payment, you must obtain BLM's written approval before you remove any more material.

You assume the risk of loss of materials to which you have title. If the contract is damaged or destroyed before you are liable for all loss suffered if you or your agents are directly or indirectly responsible for the damage. If the damage resulted from willful or gross negligence, you are liable for triple the appraised value of the damaged or destroyed materials. If the damage or destruction did not result from willful or gross negligence, you are liable for lesser charges, but not less than the appraised value of the materials.

Sec. 5. *Liability for damage to materials not sold to you* - You are liable for loss or damage to materials not sold to you if you or your agents are directly or indirectly responsible for the damage or loss. You are also liable if you fail to perform under the contract.

According to BLM's instructions and the United States incurs costs resulting from your breach of any contract term or your failure to use proper conservation practices. If the damage resulted from willful or gross negligence, you are liable for triple the appraised value of the damaged or destroyed materials. If the damage or destruction did not result from willful or gross negligence, you are liable for lesser charges, but not less than the appraised value of the materials.

Sec. 6. *Stipulations and reserved terms* - Your rights are subject to the regulations at 43 CFR Group 3600 and to any stipulations and the mining plan attached to this contract.

BLM will check this box if there are stipulations attached to this contract.

Sec. 7. *Notice of operations* - You must notify BLM immediately when you begin and end operations under this contract. If BLM has specified a time frame for notification, you must comply with that time frame.

Sec. 8. *Bonds* - (a) You must furnish BLM with a bond in the amount of \$ \_\_\_\_\_ as a condition of issuing this contract.

(b) If you do not perform all terms of the contract, BLM will deduct an amount equal to the damages from the face amount of the bond. If the damages exceed the amount of the bond, you are liable for the excess. BLM will cancel the bond or return the cash or U.S. bonds you supplied when you have completed performance under this contract.

(c) BLM will require a new bond when it finds any bond you furnish under this contract to be unsatisfactory.

(Continued on page 3)

Sec. 9. *Assignments* - You may not assign this contract without BLM's written approval.

Sec. 10. *Modification of the Approved Mining or Reclamation Plan* - You or BLM may initiate modification of these plans to adjust for changed conditions, or to correct any oversight. The conditions for BLM requiring you to modify these plans, or approve a modification for modification are found in the regulations at 43 CFR 3602.41.

Sec. 11. *Time for contract* - This contract is effective upon the date of approval by BLM. If you do not begin operations under this contract within 90 days of the date of approval, you must obtain BLM's written approval before you remove any more material.

Sec. 12. *Time for contract* - BLM will terminate this contract if you do not begin operations under this contract within 90 days of the date of approval, or if you do not begin operations under this contract within 90 days of the date of approval.

Sec. 13. *Termination of contract* - (a) If you violate any term or condition of this contract, BLM may cancel your contract and recover all damages suffered by the United States, including applying any advance payments you made under this contract toward the payment of the damages.

(b) If you extract any mineral materials sold under this contract during the suspension period, or after the contract has expired or been canceled, you have committed, and may be charged with, willful trespass.

Sec. 14. *Responsibility for damages suffered or costs incurred by the United States* - If you, your contractors, subcontractors or employees breach this contract or commit any wrongful or negligent act, you are liable for any resulting damages suffered or costs incurred by the United States. You must pay the United States within 30 days after receiving a written demand from BLM.

Sec. 15. *Extensions of time* - BLM may grant you an extension of time in which to comply with contract provisions under the regulations at 43 CFR 3602.27. For contracts with terms over 90 days, you must apply in writing no less than 30 or more than 90 days before your contract expires. For contracts with terms of 90 days or less you must apply no later than 15 days before your contract expires.

Sec. 16. *Time for removing personal property* - You have \_\_\_\_\_ days (not to exceed 90) from the date this contract expires to remove your equipment, improvements, and other personal property from United States lands or rights-of-way. You may leave in place improvements such as roads, culverts, and bridges if BLM consents. Any property remaining after this period ends becomes the property of the United States, but you will remain liable for the cost of removing it and restoring the site.

Sec. 17. *Equal opportunity clause* - The actions you take in hiring must comply with the provisions of Executive Order No. 11246 of Sept. 24, 1965, as amended, which describe the non-discrimination clauses. You may get a copy of this order from BLM.

This is what you will get back from the BLM

Sec. 18. *Effective date* - This contract becomes effective as indicated below.

- If this contract becomes effective on the date BLM signs the contract, BLM will check this box.
- If this contract becomes effective only after certain conditions are met, BLM will check this box, list the conditions below, and indicate the effective date.

Sec. 19. *Appeal* - You may appeal any decision that BLM makes in regard to this contract under Parts 4 and 1840 of Title 43 of the Code of Federal Regulations.

The following parties have executed this contract as of:

	PURCHASER	THE UNITED STATES OF AMERICA
By _____ (Individual or Firm Name)	By	(BLM)
_____ (Address)		(Title)
_____ (Phone Number - include area code)		(Date)
_____ (Signature)		
_____ (Signature)		

If you are a corporation, affix corporate seal here:

File 18 U.S.C. 1001, makes it a crime for any person knowingly or willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction, subject to a fine of up to \$10,000 and imprisonment up to 5 years.

**NOTICES**

be Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 601 et seq.; 43 CFR 3600  
PRINCIPAL PURPOSE: BLM uses this information to identify the parties entering into contracts for disposing of mineral materials.

ROUTINE USES: BLM will transfer information from the record or the record itself to appropriate Federal, State, local, or foreign agencies, when relevant to criminal, civil, or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION: If you do not provide this information to BLM, we will not be able to process your application for a contract.

be Paperwork Reduction Act of 1995 requires us to inform you that: he BLM is collecting this information to process your application and effect a binding contract.

he BLM will use this information to identify and communicate with applicants. You must respond to this request to get a benefit. he BLM would like you to know that you are not required to respond to, this or any other Federal agency-sponsored information collection which does not have a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average about 30 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0103), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Form 3600-9, page 1)

(Form 3600-9, page 2)

# Free Use Permit Facts

So you need a  
FUP?





# Free Use Permit Facts

- You are a government agency or non-profit organization that needs mineral materials to develop your property, right-of-way or lease
- The material obtained through a free use permit can only be used for a qualifying purpose
  - e.g. You need it to develop a public park or school site
- A FUP cannot be used to dispose of excess mineral materials from a public works project if the material will ultimately be used for commercial or industrial purposes, or resold or traded
  - This requires a sales contract
- You can move excess mineral materials from one site, i.e. a park site, to another site with a qualifying use, e.g. a school site, with a FUP
  - However, material cannot move to a private enterprise, like a housing development, without a sales contract

# Types of Disposals: Free Use Permits

## Government Entities

- BLM may allow government entities free use of mineral materials without limitation as to number of permits or volume
- Materials under free use cannot be used for commercial or industrial purposes, or be resold

## Non-Profit Organizations

- BLM may allow non-profit organizations of free use of mineral materials for their own use
- Use is limited to 5,000 CY in any 12 consecutive month period
- Materials under free use cannot be used for commercial or industrial purposes, or be resold

# Free Use Permit

Form 3604-1a  
(August 2013)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
**FREE USE PERMIT APPLICATION**  
MINERAL MATERIAL

FORM APPROVED  
OMB NO. 1004-0001  
Expires August 31, 2016

BUREAU OF LAND  
MANAGEMENT  
FIELD OFFICE

<b>APPLICATION</b>			BLM CASE SERIAL NUMBER:		
Name of applicant		Telephone	Email		
Mailing Address					
Street Address (if different from Mailing Address)					
City	State	Zip code	City	State	Zip code
Kind of material	Quantity requested	<input type="checkbox"/> cu.yds. or <input type="checkbox"/> tons	Requested permit term		

Materials are to be used for:

Give legal land description for proposed source area:					Select one	
Meridian	Township	Range	Section	Subdivision	Acres	<input type="checkbox"/> Existing Mine Site
						<input type="checkbox"/> New Mine Site

I HEREBY AGREE TO COMPLY WITH the regulations at 43 CFR Part 3600 and special conditions as set forth in the permit. I CERTIFY that the: (a) materials to be removed will be those specifically identified in the permit; (b) none of the materials removed will be sold or bartered; (c) removal of materials will begin within 90 days of the issuance of an approved copy of this permit and will cease upon the expiration date or removal of the authorized quantity of materials; and, (d) the Bureau of Land Management (BLM) will be notified upon completion of removal.

I CERTIFY that I am of the age of majority in the State in which this entity is qualified to apply for a free use permit to extract and use mineral materials under 43 CFR 3604.12. (Select one)  Federal,  State, or  territorial agency or organization (including municipalities), or  non-profit organization.

I FURTHER CERTIFY That the statements made in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

\_\_\_\_\_  
Signature of Applicant (Date)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations.

If you are a non-profit organization or quasi-governmental agency, attach organization charter and other proof of status.

**NOTICES**

The Privacy Act of 1974 and the regulations in 43 CFR 2.48(d) provide that you be furnished with the following information required by this application:

AUTHORITY: 30 U.S.C. 601; and 43 CFR Part 3600

PRINCIPAL PURPOSE: BLM uses the information to maintain an inventory of mineral information, to adjudicate your rights to mineral resources, and to identify the parties applying for and/or granted permits for disposing of mineral materials.

ROUTINE USES: BLM will disclose the information on this form pursuant to the regulations in 43 CFR 2.56.

EFFECT OF NOT PROVIDING THIS INFORMATION: If you do not furnish all the information required by this form, your application may be rejected.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate the amount and condition of mineral materials on public lands and it will be used to maintain depletion records.

The BLM is collecting this information to process your application and effect a binding permit.

The BLM will use this information to identify and communicate with applicants.

Response to this request is required to obtain a benefit.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 2 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0000), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Form 3604-1b  
(August 2013)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
**MINERAL MATERIAL**  
**FREE USE PERMIT**

FORM APPROVED  
OMB NO. 1004-0001  
Expires August 31, 2016

BUREAU OF LAND  
MANAGEMENT  
FIELD OFFICE

Permit (Case) Serial Number					Expiration Date	
Permittee Name and Address:						
Legal land description of authorized permit area:						
Meridian	Township	Range	Section	Subdivision	Acres	

This permit is issued under the Act of July 31, 1947, as amended, and 43 U.S.C. 2 and 1201. Free use permits are issued subject to the requirements of 43 CFT Part 3600 now or hereafter in force.

This permit is hereby issued for the materials applied for but may be canceled if it appears that this permit was issued erroneously or the terms or conditions contained herein are not observed.

**The permit is subject to the following standard stipulations:**

Any use of the surface of the lands involved in this permit must not interfere with any claim subject to the provisions of Section 4 of the Act of July 23, 2955 (30 U.S.C. 612);

The permittee must allow BLM access for inspections as required by 43 CFR 3601.52

The permittee must clean up all work areas and must remove all equipment, personal property, and improvements not otherwise resulting from the permittee's operations, and equipment, personal property, and improvements must be removed from the permit area within 90 days after the permit expiration date as required by 43 CFR 3601.52

An annual report indicating the amount (cubic yards) of material removed must be filed with the BLM Field Office on the anniversary date of the permit, and within thirty days of the permit expiration.

**The permit is also subject to the following SPECIAL stipulations:**

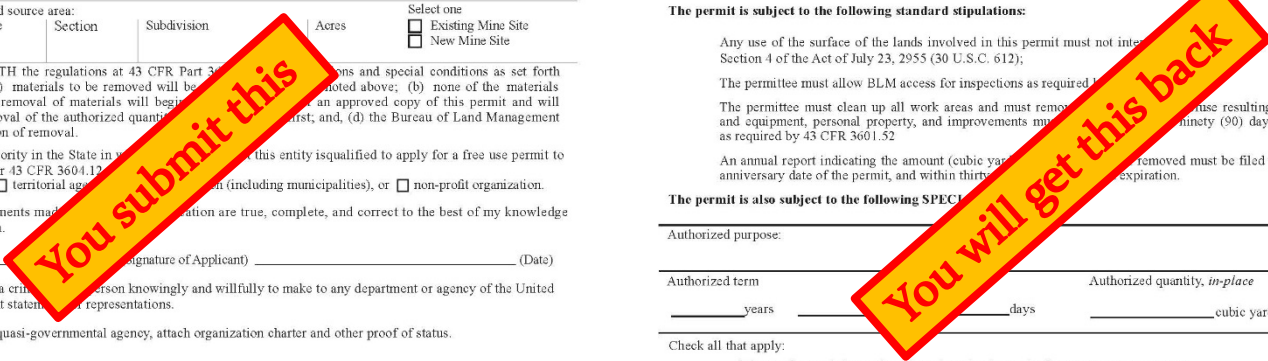
Authorized purpose:	
Authorized term	Authorized quantity, <i>in-place</i>
_____ years	_____ days _____ cubic yards or _____ tons

Check all that apply:

- Permittee Mining and Reclamation plan is required per 43 CFT 3601.40-44
- Permittee is responsible for reclamation of permit area
- Financial Guarantee is required per 43 CFR 3602.14
- Removal area is within Community Pit – Common Use Area - Serial No.
- Permittee will perform reclamation in Community Pit – Common Use Area in lieu of reclamation fee
- Permittee must follow/comply with BLM mining and reclamation plan
- Permittee will pay a reclamation fee for Community Pit – Common Use Area as identified below:

Type of Material	Quantity (select applicable <i>in-place</i> units)		Reclamation Fee (select applicable <i>in-place</i> units)		TOTAL Reclamation Fee (\$)
	<input type="checkbox"/> cu. yds.	<input type="checkbox"/> tons	\$ per cu. yds.	\$ per ton	

BLM will check this box if there are additional stipulations attached to this permit.



# How to Obtain a Free Use Permit

- Submit Form 3604-1a with appropriate information filled out
  - Make sure to state the qualifying use
  - The legal description on the form is for where the material is coming from
- Include a cover letter with Form 3604-1a
  - Briefly describe the activities/qualifying free use
  - Include primary contact info (name, title, phone #, address)
  - Who, What, When, Where, How

# Cost Recovery

- 3600 regulations require case-by-case cost recovery
  - Estimate prepared by us
  - Covers all aspects of contract administration
  - Must be collected prior to beginning any work
  - Can take several weeks to set up
- Free use permits are exempt from cost recovery

# Authorized Activities on a Permit/Contract Site?

- Processing of mineral materials
- Short term storage of mineral materials
- Reasonable equipment to excavate and process mineral materials
  
- Disclose what you will be doing upfront – the BLM does not like surprises
- Disclose what equipment you will use upfront – the BLM does not like surprises
  
- Will not be permitted as “stand alone” under the contract/FUP
  - Long-term storage of materials
  - Processing areas
  - Batch plants
  - Staging areas
  
- Keep permitted mineral material activities (e.g. processing, stockpiling) within the boundaries of your property, contract area, ROW or lease

# Excess Mineral Materials and Your Project

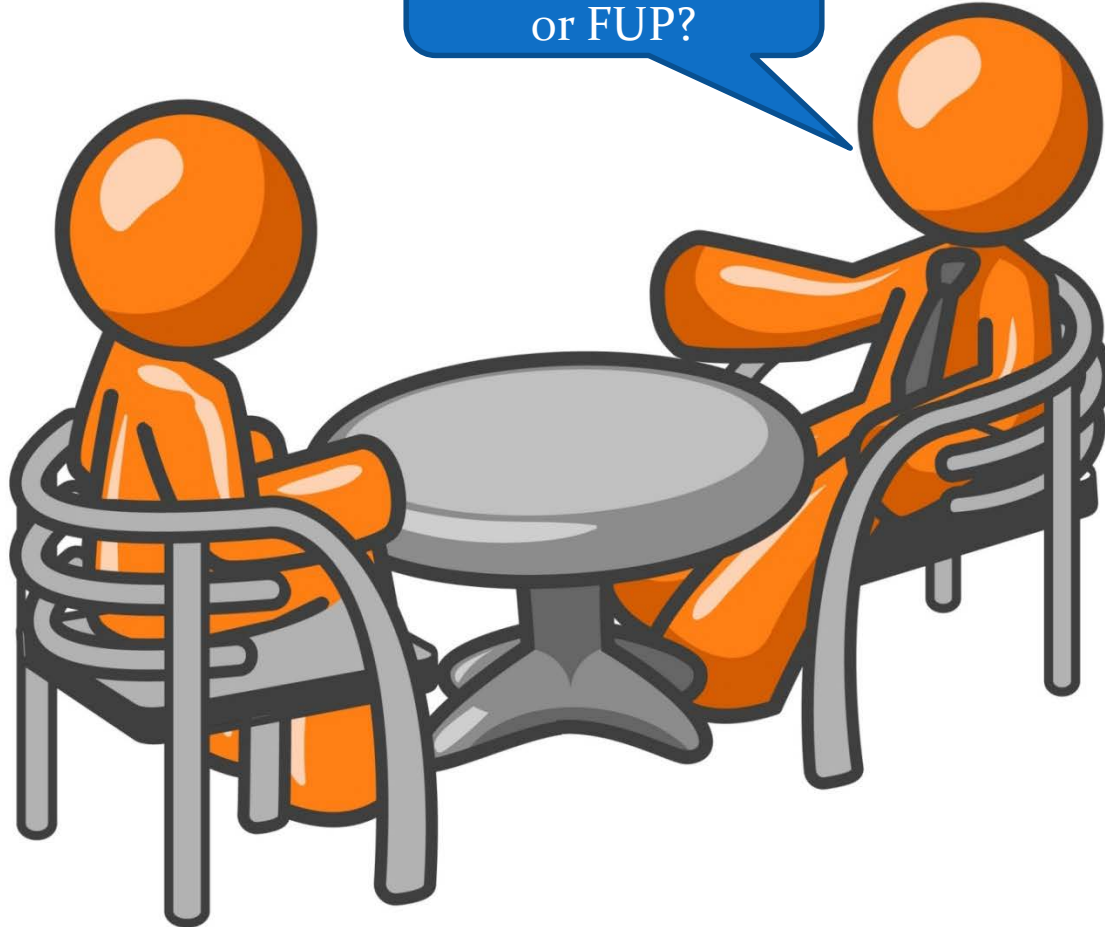
- Excess mineral materials may:
  - Cause unexpected costs
  - Delay your project
  - Cause conflict with your contractor
    - If not determined upfront who will pay for minerals
    - If not determined upfront where the minerals will go/how they will be used
    - Do not write “contractor is responsible for working with BLM to dispose of/purchase excess minerals” in your contract without working with the BLM first
      - Your property or project; minerals are your problem
  - Require a contract or FUP
    - Contracts and FUPs must be obtained prior to those materials leaving the site
  - Cause issuance of trespass decisions by the BLM

# How To Avoid Problems/Speed Things Up

- Always check mineral estate ownership
- Determine upfront how excess minerals will be handled by you or your contractor
- Apply early!
  - Make the mineral contract request/FUP application part of your permitting process
  - Understand BLMs processing time limitations
- Include disposal of excess minerals in ROW/lease POD
  - Prevents additional NEPA
  - Saves time
- **If you are unsure, call a mineral team member and ask**



I don't know if I  
need a contract  
or FUP?



**Contact a BLM Mineral Team Member!**

# Trespass and Unauthorized Use

- Extracting, severing or removing Federal mineral materials without a contract or free use permit could result in the issuance of a trespass decision (43 CFR 3601.71)
- You are liable for damages when it is determined you are in trespass
  - Cost of mineral materials used/severed
  - Administrative costs
  - Willful trespass – minerals used assessed at consumer market price minus transportation costs...\$\$\$\$
- If it is your construction contractor removing the mineral materials without a contract, you and your contractor could both be considered to be in trespass

# Take-Aways

- Consider how minerals will be used
  - Plan ahead
- Check mineral ownership
  - Many properties in Las Vegas are split estate
- Minimal personal use does not include:
  - Commercial or industrial uses
  - Construction uses
  - Barrow material
  - Alteration of the native material in any way
- Include mineral material use in your ROW/lease application
  - Saves time and money
  - Prevents additional NEPA
- Get the BLM your request early

# Thank You

- Contact a BLM Mineral Team member at
  - 702-515-5000
  - Ask for a Mineral Team member or Geologist

# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

WASHINGTON, D.C. 20240

<http://www.blm.gov>

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EMS TRANSMISSION 05/05/2014

In Reply Refer To:  
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Instruction Memorandum No. 2014- 085

Expires: 09/30/2015

To: All Field Office Officials

From: Assistant Director, Energy, Minerals, and Realty Management

Subject: Unauthorized Use of Mineral Materials on Split Estate Lands

**Program Area:** Mineral Materials.

**Purpose:** This Instruction Memorandum (IM) clarifies policies for addressing unauthorized uses of mineral materials by surface estate owners, including unauthorized personal uses of the mineral materials.

**Policy/Action:** Processing mineral materials trespass is a high priority for the Bureau of Land Management (BLM). Field offices must investigate and take enforcement actions on unauthorized removals of mineral materials from split estate land in accordance with established trespass procedures whenever the BLM identifies such removals. As part of the investigation, all BLM offices must verify, with the Office of the Solicitor, that the reserved mineral estate includes mineral materials.

A surface owner may extract, sever, or remove only minimal amounts of mineral materials from split estate land for personal use under 43 CFR 3601.71(b)(1) for purposes of improving the surface, even if the materials are not removed off of the tract.

The preamble to the *Federal Register* notice publishing the regulations explained the type of use that is regarded as “minimal personal use” for the purpose of 43 CFR 3601.71 (b)(1). The preamble reads:

[W]ithout a contract or permit, or other express authorization, a surface estate owner may make only minimal personal use of federally reserved mineral materials within the boundaries of the surface estate. Minimal use would include, for example, moving mineral materials to dig a personal swimming pool and using those excavated materials for grading or landscaping on the property. It would not include large-scale use of mineral materials, even within the boundaries of the surface estate (66 Fed. Reg. 58894 (Nov. 23, 2001)).”

Do not confuse the term “landscaping” in the preamble explanation with specific mineral material landscaping products such as decorative boulders, flagstone for walls and walkways, and crushed rock used for ground cover. The phrase “using those excavated materials for grading or landscaping on the property” means that mineral materials that must be excavated in connection with surface use of the property may be spread on other parts of the surface of that same property regardless of the amount, so long as the material is unaltered and is not used for or in connection with any construction purpose.

Any separation or alteration of the various constituents of the material, through methods such as screening or crushing, constitutes a mineral use of the materials and requires a contract or permit. Furthermore, any use of the materials in a construction project, such as for road base, building foundations, or ornamentation, also constitutes a mineral use of the materials – even if the material was not altered in any way – and also requires a contract or permit.

**Timeframe:** Effective immediately.

**Budget Impact:** This policy will not result in any additional impact to mineral materials budgets.

**Background:** On split estate parcels, mineral materials can be reserved under numerous Federal and State laws. Title to reserved mineral estate can be complex and individual situations must be analyzed to determine if mineral materials are reserved. BLM regulations at 43 CFR 3601.71(b)(1) do not quantify the minimal amount allowed for personal use and the *Federal Register* preamble explanation of minimal quantities is not reproduced in the regulations. Handbook H-9235-1, *Mineral Materials Trespass Prevention and Abatement*, provides extensive guidance on investigation and enforcement procedures but it does not define limited personal use.

**Manual/Handbook Sections Affected:** This IM transmits interim policy that we will incorporate into H-3600-1, *Mineral Materials Disposal Handbook*, at Section X.C., and H-9235-1, *Mineral Materials Trespass Prevention and Abatement Handbook*, at Sections V.5 and 6 during the next revision.

**Coordination:** The Division of Solid Minerals consulted with State Offices, and coordinated preparation of this guidance with the Office of the Solicitor.

**Contact:** If you have any questions concerning the content of this IM, please contact me at 202-208-4201, or your staff may contact Mitchell Leverette, Division Chief, Solid Minerals (WO-320), at 202-912- 7113 or [mleverette@blm.gov](mailto:mleverette@blm.gov), or George Brown, Geologist, Solid Minerals (WO-320), at 202-912-7118 or [g1brown@blm.gov](mailto:g1brown@blm.gov).

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