





## *Chapter IX*

---

# **SITING AND PERMITTING OF TS&D INFRASTRUCTURE**

This chapter is devoted to issues surrounding the siting and permitting of transmission, storage, and distribution (TS&D) infrastructure, building on the general identification of those issues in Chapter VII (Addressing Environmental Aspects of TS&D Infrastructure). The first section highlights the multiple jurisdictions involved in permitting. The second section describes the need for close collaboration with governments at a variety of levels. The third section focuses on the need for public engagement on siting issues. The fourth section discusses timetables for siting and permitting. The chapter concludes with a description of current Administration activities and plans and a number of recommendations for further action.

## **FINDINGS IN BRIEF:** **Siting and Permitting of TS&D Infrastructure**

---

**The involvement of multiple jurisdictions adds time to siting, permitting, and review of infrastructure projects.** As major infrastructure projects are proposed, Federal, state, local, and tribal governments must work to consider and minimize potential impacts on safety and security, as well as environmental and community resources (e.g., air, water, land, and historic and cultural resources). These entities often have overlapping and sometimes conflicting statutory responsibilities for siting and permitting projects. The interplay among the diverse sets of participants and statutorily defined responsibilities is challenging, and for particularly large and complex infrastructure projects, multiple permits and approvals can lead to inefficiencies and delay.

**Close collaboration with tribal, state, and local governments is critical to siting, permitting, and review of infrastructure projects.** Most infrastructure siting and permitting decisions are made at the state and local levels; some also require consultation with affected Indian Tribes. The bulk of Federal review and permitting responsibilities are also handled at regional offices rather than agency headquarters. The local nature of decision making requires close interaction between local and tribal governments and Federal agencies, and appropriate knowledge of resource concerns to be addressed in the permitting process.

**Robust public engagement is essential for the credibility of the siting, permitting, and review process.** Major infrastructure projects, such as high-voltage transmission lines and pipelines, are likely to trigger potentially conflicting stakeholder interests and have the potential to produce significant impacts on local communities and the environment due to their complexity and scale. Robust stakeholder engagement is necessary to avoid, minimize, and mitigate these potential impacts and is likely to reduce delays in reaching a decision.

**Siting timetables vary widely, and processes for siting energy infrastructure differ by sector.** Major infrastructure projects typically involve multi-year design, development, and construction timelines with complex approval processes. Timelines and processes for approval vary depending on the scope and type of project.

**The Federal Government is taking steps to modernize its siting, permitting, and review processes.** The complexity and pace of the Federal permitting and review processes for proposed infrastructure projects has been identified as a key challenge to building U.S. infrastructure for transporting, transmitting, and delivering energy. The Obama Administration has taken steps within and across Federal agencies to modernize the Federal permitting and review process for major infrastructure projects to reduce uncertainty for project applicants, to reduce the aggregate time it takes to conduct reviews and make permitting decisions by half, and to produce measurably better environmental and community outcomes.

## A New Urgency to Improve Siting and Permitting

The domestic oil-and-gas boom, expanding renewable energy production, actions to mitigate climate change, and ongoing steps to maintain electricity grid reliability are changing our energy infrastructure needs and driving demand for new TS&D energy infrastructure. Actions to expand both renewable and traditional energy production over the past decade have exposed the gap between typical permitting times for generation and production sources and the much longer times for midstream energy infrastructure. The discrepancy in permitting time frames makes it more challenging to plan, site, permit, finance, and construct midstream energy infrastructure projects. Given these challenges, it is essential to promote more timely permitting decisions while protecting our Nation's environmental, historic, and cultural resources.

While building much of this infrastructure depends on state and local decisions, the Federal Government plays a central role in reviewing and approving applications to site certain projects, including interstate gas pipelines and those that cross Federal lands, or have impacts to wildlife, cultural and historic resources, or waters of the United States. This chapter focuses on that Federal role and the actions taken across the Federal Government to permit and approve energy infrastructure projects and increase the efficiency of the permitting process while improving environmental and community outcomes.

Since 2009, the Department of the Interior's Bureau of Land Management (BLM) has approved 90 major transmission line projects, spanning approximately 3,000 total miles, approximately 1,600 miles of which cross BLM-managed lands. Since that time, BLM also has authorized more than nine major pipeline projects for oil, water, and natural gas, with nearly 1,050 miles on BLM lands. The Federal Energy Regulatory Commission (FERC) has authorized about 4,500 miles of pipeline since 2009, and about 6,200 miles of pipeline have been put in service. Since 2009, the Department of Agriculture's Rural Utilities Service has financed 5,591 total miles of transmission line, 3,316 miles of which are new transmission line and 2,275 miles are line upgrade and improvements. During the same time period, the Department of Agriculture's Forest Service has approved and reauthorized on National Forest System lands 4,921 power line projects covering 31,678 miles; 2,160 natural gas and oil pipelines covering 12,907 miles; and 158 water transmission projects covering 847 miles.

For the vast majority of projects, the environmental review and permitting requirements are accomplished effectively and efficiently. For particularly large and complex infrastructure projects, however, the diverse and often divergent sets of agency permit and decision-making responsibilities can lead to friction and create inefficiencies, as well as extend the time frame for the Federal permitting and review process.

To drive additional progress in Federal reviews of significant midstream infrastructure projects, the Administration launched a government-wide initiative to modernize the Federal permitting and review process. President Obama issued a Presidential Memorandum on August 31, 2011, and an Executive Order on March 22, 2012.<sup>1,2</sup> In those executive actions, the President directed Federal agencies to improve the efficiency and transparency of Federal permitting and review processes for infrastructure projects,<sup>a</sup> as well as to cut through red tape and get more timely decisions, while producing measurably better outcomes for communities and the environment.

Under that initiative, Federal agencies have expedited the review and permitting of more than 50 selected infrastructure projects, including 11 energy projects.<sup>b</sup> Thirty-two of these projects have completed the Federal review process, 29 remain under active Federal review, and 1 project was denied. Estimated time savings range from several months to several years in many cases.

---

<sup>a</sup> As defined in the Presidential Memorandum, infrastructure projects include electricity transmission, pipelines, renewable energy infrastructure, water resource projects, ports and waterways, transit systems, broadband Internet, roads, bridges, railways, and airports.

<sup>b</sup> More information about these projects is posted online on the Federal Infrastructure Projects Permitting Dashboard, which was established pursuant to a 2011 Presidential Memorandum on Speeding Infrastructure Development through More Efficient and Effective Permitting and Environmental Review. See: Federal Infrastructure Projects Permitting Dashboard. "Projects Under Active Review." [www.permits.performance.gov/projects/active-projects](http://www.permits.performance.gov/projects/active-projects).

## SUMMARY OF SELECT TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE SITING, PERMITTING, AND REVIEW AUTHORITIES

Multiple Federal, state, local, and tribal governments have jurisdiction over siting, permitting, and review of proposed transmission, storage, and distribution infrastructure. Projects that involve Federal funds, are proposed on Federal lands, cross Federal land or water, or will affect the air or water quality that is regulated by Federal law are subject to some kind of Federal permitting or review process. The following is a brief summary of some of these legal authorities.

### ELECTRIC TRANSMISSION LINES

#### Federal Jurisdiction:

- The Federal Energy Regulatory Commission has limited siting authority pursuant to Section 216 of the Federal Power Act, under limited circumstances within corridors designated by the Department of Energy. Implementation of this authority has been impacted by court decisions.<sup>c, d</sup>
- The Department of Energy has jurisdiction under Section 216(h) of the Federal Power Act (16 U.S.C. § 824p(h)) to coordinate applicable Federal authorizations and related environmental reviews for transmission projects.
- The Department of Energy has the authority under Section 1222 of the Energy Policy Act of 2005 (42 U.S.C. § 16421) to engage in or to participate with other entities in designing, developing, constructing, operating, maintaining, or owning (1) electric power transmission facilities and related facilities needed to upgrade existing transmission facilities owned by the Western Area Power Administration or Southwestern Area Power Administration, or (2) new electric power transmission facilities and related facilities located within any state in which either operates.
- The Department of the Interior's Bureau of Land Management (BLM) and the Department of Agriculture's Forest Service (USFS) have the authority under the Federal Land Policy and Management Act (43 U.S.C. §§ 1761–1771) to issue rights of way for electric transmission lines crossing their Federal lands.

#### State Jurisdiction:

- States have primary authority over siting, permitting, and review of electric transmission projects. Each state has different procedures to follow for approving a transmission line. Interstate lines must comply with the legal requirements of each state.

### NATURAL GAS PIPELINES

#### Federal Jurisdiction:

- The Federal Energy Regulatory Commission has jurisdiction under Section 7 of the Natural Gas Act to regulate interstate natural gas pipelines, including siting (15 U.S.C. § 717f(c)). The Federal Energy Regulatory Commission is also required as a lead agency to coordinate the environmental review and processing of all Federal authorizations related to natural gas infrastructure with other Federal agencies (15 U.S.C. § 717n(b)).<sup>e</sup>
- BLM has the authority to issue permits under the Mineral Leasing Act for natural gas pipelines that cross Federal lands (30 U.S.C. § 185). If a proposed pipeline crosses more than one Federal agency's lands, BLM issues the right-of-way permit (30 U.S.C. § 185(c) and 43 C.F.R. § 2882). If the pipeline crosses only USFS lands, USFS issues a special use permit (36 C.F.R. § 251).

#### State Jurisdiction:

- States have jurisdiction over lines that do not carry gas in interstate commerce.

<sup>c</sup> California Wilderness Coal v. U.S. Dep't of Energy, 631 F.3d 1072 (9th Cir. 2011).

<sup>d</sup> Piedmont Env'tl. Council v. FERC 558 F.3d 304 (4th Cir. 2009).

<sup>e</sup> The Department of the Army, et al. "Interagency Agreement on Early Coordination of Required Environmental and Historic Preservation Reviews Conducted in Conjunction with the Issuance of Authorizations to Construct and Operate Interstate Natural Gas Pipelines Certificated by the Federal Energy Regulatory Commission." May 2002. [http://www.ferc.gov/industries/gas/enviro/gas\\_interagency\\_mou.pdf](http://www.ferc.gov/industries/gas/enviro/gas_interagency_mou.pdf). Accessed January 30, 2015.

## SUMMARY OF SELECT TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE SITING, PERMITTING, AND REVIEW AUTHORITIES (continued)

---

### OIL PIPELINES

#### Federal Jurisdiction:

- There is no comprehensive Federal siting and permitting process for interstate or intrastate oil pipelines.
- BLM and USFS authority for oil pipelines crossing Federal lands mirrors that for gas pipelines set forth above (30 U.S.C. § 185).

#### State Jurisdiction:

- State and local laws govern approval of an oil pipeline route, other than the portions crossing Federal lands. Interstate lines must comply with the legal requirements of each state.

### CARBON DIOXIDE PIPELINES

#### Federal Jurisdiction:

- There is no comprehensive Federal siting and permitting process for interstate or intrastate carbon dioxide pipelines on non-Federal lands.
- BLM regulates carbon dioxide pipelines under the Mineral Leasing Act as a commodity shipped by a common carrier (30 U.S.C. §185(r)).<sup>f, g</sup>

#### State Jurisdiction:

- Oversight of siting, construction, and operations of carbon dioxide pipelines is largely handled at the state level.<sup>h</sup>

### RAIL LINES

#### Federal Jurisdiction:

- The Surface Transportation Board, created in the 1995 Interstate Commerce Commission Termination Act, regulates construction of rail lines.<sup>i</sup>

#### State Jurisdiction:

- State and local governments retain the power to protect public health and safety, such as regulating potentially harmful waste disposal, to the extent that regulation does not interfere with the Surface Transportation Board's exclusive jurisdiction over interstate rail operations.<sup>j, k</sup>

---

<sup>f</sup> Environmental Assessment for Anadarko E&P Company L.P. Monell CO<sub>2</sub> Pipeline Project.

<sup>g</sup> Exxon Corp. v. Lujan, 970 F.2d 757 (10th Cir. 1992).

<sup>h</sup> Congressional Research Service. "Carbon Dioxide (CO<sub>2</sub>) Pipelines for Carbon Sequestration: Emerging Policy Issues." p. 10. January 17, 2008. [http://assets.opencrs.com/rpts/RL33971\\_20080117.pdf](http://assets.opencrs.com/rpts/RL33971_20080117.pdf). Accessed January 21, 2015.

<sup>i</sup> Surface Transportation Board. "Overview of the STB." <http://www.stb.dot.gov/stb/about/overview.html>. Accessed January 20, 2015.

<sup>j</sup> See e.g., Norfolk Southern Railway Co. v. City of Toledo, 2015 WL 45537 (N.D. Ohio January 2, 2015).

<sup>k</sup> See e.g., Green Mountain Railroad Corp. v. Vermont, 404 F.3d 638, 643 (2d Cir. 2005).

## The Federal Government's Role in Siting, Permitting, and Review of Infrastructure Projects

Permitting and siting of the majority of TS&D infrastructure projects depends on state and local decisions.<sup>3,4,5</sup> Federal agencies have siting authority over proposed infrastructure projects that cross Federal land or water; interstate natural gas pipelines; and, to a limited extent, interstate electricity transmission projects. In states where most of the land is Federal land, Federal agencies make the key siting decisions. Federal approval will include environmental protection requirements, as well as required reviews that Federal agencies must follow and which may lead to decisions that ensure the protection of the environment and cultural and historic resources.<sup>1</sup> Applications for pipelines and power lines that cross tribal lands must also be approved by the tribal government and Federal Government.<sup>6</sup>

The number and type of permits and reviews required, as well as the process and the timelines, vary depending on the nature of the project. For example, Congress has granted FERC siting authority over interstate natural gas pipelines.<sup>7,m</sup> In contrast, there is no comprehensive Federal process for obtaining a permit for the routing of an interstate oil pipeline.<sup>n</sup> Rather, state and local laws govern approval of an oil pipeline's route. Similarly, states (with limited exceptions provided under the Energy Policy Act of 2005)<sup>o</sup> have siting authority over electricity infrastructure.<sup>p</sup> The regulation of carbon dioxide (CO<sub>2</sub>) pipelines is currently a joint responsibility of Federal and state governments.<sup>q</sup> Four Federal agencies maintain a role in cross-border Presidential permitting and/or export authorization of energy infrastructure that crosses the international borders with Canada or Mexico—the Department of State has delegated authority for oil and refined product pipelines;<sup>8</sup> FERC is the authorizing

<sup>1</sup> A full inventory of required Federal permits and approvals, as well as National Environmental Policy Act reviews and milestones relating to major infrastructure projects, is available on the Federal Infrastructure Projects Permitting Dashboard. See: Federal Infrastructure Projects Permitting Dashboard. "Permit Inventory." [www.permits.performance.gov/permit-inventory](http://www.permits.performance.gov/permit-inventory).

<sup>m</sup> The Natural Gas Act also provides FERC the authority to grant private companies that transport natural gas in interstate commerce the rights of eminent domain (15 U.S.C. § 717f(c)).

<sup>n</sup> FERC has no oversight authority over construction of interstate oil pipelines, nor does it have jurisdiction over wholly intrastate pipelines. There is also no eminent domain authority for liquid pipelines.

<sup>o</sup> FERC has limited siting authority pursuant to Section 216 of the Federal Power Act, under limited circumstances within corridors designated by the Department of Energy. Implementation of this authority has been called into question in recent court decisions. In the Energy Policy Act of 2005, Congress also added provisions addressing Federal Government jurisdiction over and processes for siting electricity transmission. Under Section 216(h) of the Federal Power Act (16 U.S.C. § 824p(h)), Congress granted DOE authority to coordinate applicable Federal authorizations and related environmental reviews for transmission projects. In 2009, pursuant to Section 216(h)(4)(C), nine Federal agencies signed a memorandum of understanding to expedite the siting and construction of qualified onshore electric transmission infrastructure projects in the United States. See: "Memorandum of Understanding Among the U.S. Department of Agriculture, Department of Commerce, Department of Defense, Department of Energy, Environmental Protection Agency, the Council on Environmental Quality, the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and Department of the Interior, Regarding Coordination in Federal Agency Review of Electric Transmission Facilities on Federal Land." October 23, 2009. [www.whitehouse.gov/files/documents/ceq/Transmission%20Siting%20on%20Federal%20Lands%20MOU.pdf](http://www.whitehouse.gov/files/documents/ceq/Transmission%20Siting%20on%20Federal%20Lands%20MOU.pdf). Accessed January 21, 2015.

<sup>p</sup> In almost all states, public utility commissions regulate siting of electricity infrastructure. Each state has different procedures to follow for approving a transmission line. Some states require the developer to demonstrate the necessity of new transmission capacity, and some states require the consideration of non-transmission alternatives. Some states mandate that all types of transmission lines be fully permitted before construction can start, while others only have siting requirements above certain voltage levels.

<sup>q</sup> CO<sub>2</sub> transportation pipelines are subject to Federal safety regulations that are administered by the Department of Transportation's Pipeline and Hazardous Materials Safety Administration (49 C.F.R. § 195). It directly oversees pipeline safety for all interstate lines, while intrastate pipelines are subject to state agency oversight (as long as the standards are at least as stringent as the Federal rules). If a pipeline crosses Federal land, then, prior to construction, permits from the relevant Federal agency and compliance with the National Environmental Policy Act are required. Otherwise, the power of oversight of siting (including the use of eminent domain), construction, and operations of CO<sub>2</sub> pipelines is largely handled at the state level.

agency for natural gas pipelines and liquefied natural gas facilities located onshore and in state waters;<sup>9,10,r</sup> and the Department of Energy (DOE) is the authorizing agency for cross-border electric transmission lines,<sup>11,12</sup> exports of electricity,<sup>13</sup> and imports and exports of natural gas.<sup>14,15</sup> The Department of Commerce exercises export authorities not granted to the preceding agencies.<sup>16</sup>

In all cases, projects that involve Federal funds, are proposed on Federal lands, require passage across Federal lands, or will affect the air or water quality that is regulated by Federal and state law are subject to some kind of Federal and state permitting or review process.<sup>5</sup>

## **Multiple Jurisdictions for the Siting, Permitting, and Review Process**

Large infrastructure siting and permitting in the United States is uniquely challenging in our Federal system of government because it often involves multiple state and Federal agencies and tribal governments with overlapping jurisdictions and different, sometimes conflicting statutory responsibilities. While this interdisciplinary system can help foster appropriate project siting decisions that reduce project impacts, there are often structural and cultural barriers to timely project siting and permitting decisions. Taken together, solely at the Federal level, there are “more than 35 distinct permitting and review responsibilities across more than 18 Federal agencies and bureaus, implemented by staff at headquarters and hundreds of regional and field offices” located across the country.<sup>17</sup>

## **Federal Collaboration with Tribal, State, and Local Governments**

Most infrastructure siting and permitting decisions are made at the state and local levels; some also require consultation with affected Indian Tribes on projects that impact traditional cultural properties and certain other historic and cultural resources.<sup>18,19</sup> The local nature of permitting decisions requires close stakeholder interaction and appropriate knowledge of local resource concerns to be addressed in the permitting process.<sup>20</sup> Effective collaboration between Federal agency regional leadership and the state, tribal, and local governments that share permitting and review responsibilities for infrastructure projects is essential to moving a project quickly and efficiently from planning to review and permitting. However, cooperation with state and local governments and consultation with tribes requires additional levels of coordination in the context of large, complex infrastructure permitting decisions and can create significant delays in project approval. State agencies can also lack incentives to act on multi-state linear infrastructure projects, especially when the projects’ primary beneficiaries are located elsewhere.

---

<sup>r</sup> Pursuant to the Deepwater Port Act (33 U.S.C. § 1501 et seq.), the Maritime Administration within the Department of Transportation has responsibility for permitting liquefied natural gas terminals located beyond state waters.

<sup>5</sup> Depending on the areas through which a pipeline or transmission line is proposed, there are a variety of Federal permitting or review processes that may apply in addition to state and local permits: Clean Water Act Section 401 water quality certificates (33 U.S.C. §§ 1251–1387), Section 402 National Pollutant Discharge Elimination System Permits (33 U.S.C. § 1342), Section 404 dredge and fill permits from the Army Corps of Engineers (33 U.S.C. § 1344), permits under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403), Clean Air Act permits (42 U.S.C. § 7401 et seq.), the Endangered Species Act (16 U.S.C. §§ 1531–1544), and the National Historic Preservation Act (16 U.S.C. § 470). In addition, compliance with the National Environmental Policy Act is always required when a proposed TS&D infrastructure project necessitates Federal action (such as funding, permitting, or otherwise approving a pipeline or electricity transmission project).



## Engagement of the Public in Energy Infrastructure Siting and Permitting

The complexity and scale of major infrastructure projects, such as high-voltage transmission lines and pipelines, are likely to trigger potentially conflicting stakeholder interests and have the potential to produce significant impacts on local communities and the environment, which must be addressed and mitigated through avoidance, minimization, or compensation. Under the National Environmental Policy Act (NEPA),<sup>21,22</sup> and the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA, any Federal action (such as funding or approving a major pipeline or electricity transmission project) requires the responsible official to consider the potential environmental impacts of the proposed action and any reasonable alternatives.<sup>23,24</sup> Federal agencies work to prepare a categorical exclusion, environmental assessment, or environmental impact statement, which—depending upon the scope and complexity of the project and the intensity of potential impacts on communities and the environment—can take time to address community and environmental impacts. Affected residential communities, nonprofit organizations, and other stakeholders also participate in the NEPA process through public comment opportunities.<sup>25</sup> Public outreach and engagement with diverse sets of stakeholders is essential to reduce the risks associated with uncertainty and potential challenges. Early and robust public engagement is a recognized best practice and can reduce delays and improve projects.<sup>26,27,28</sup>

### Cross-Border Presidential Permitting and Export Authorities

Four Federal agencies currently maintain a role in cross-border Presidential permitting and/or export authorization of energy commodities. The Department of Energy (DOE) oversees permits for cross-border electric transmission lines, exports of electricity, and imports and exports of natural gas. The Department of State permits cross-border oil and refined product pipelines. The Federal Energy Regulatory Commission permits natural gas pipelines and liquefied natural gas (LNG) facilities. The Department of Commerce exercises export authorities not granted to the preceding agencies. These authorities arise from the following statutes and Executive Orders:

#### PETROLEUM, PETROLEUM PRODUCTS, COAL, OR OTHER FUELS

##### Infrastructure: Pipelines, Land Transportation, Other

- Executive Order No. 11423 (1968), Executive Order No. 13337 (2004): Permitting authorities regarding pipelines, conveyor belts, bridges, and border crossings for land transportation, including motor and rail vehicles, delegated to the Secretary of State for a national interest determination.<sup>f,u</sup>

##### Export Authority

- Energy Policy and Conservation Act (1975): Delegates Presidential authority to restrict exports of coal, crude oil, petroleum products, natural gas, or petrochemical feedstocks, or related materials or equipment, for domestic use to the Secretary of Commerce.<sup>v</sup>

<sup>f</sup> Executive Order No. 10485. “Providing for the Performance of Certain Functions Heretofore Performed by the President with Respect to Electric Power and Natural Gas Facilities Located On The Borders Of The United States.” 18 Fed. Reg. 5397. September 9, 1953. <http://www.archives.gov/federal-register/codification/executive-order/10485.html>. Accessed January 20, 2015.

<sup>u</sup> Executive Order No. 12038. “Relating to Certain Functions Transferred to the Secretary of Energy by the Department of Energy Organization Act.” 43 Fed. Reg. 4957. February 7, 1978. <http://www.archives.gov/federal-register/codification/executive-order/12038.html>. Accessed January 20, 2015.

<sup>v</sup> 42 U.S.C. § 6212.

## Cross-Border Presidential Permitting and Export Authorities (continued)

---

### NATURAL GAS

#### Infrastructure: Pipelines, Onshore or Near-Shore LNG Facilities, Other

- Natural Gas Act Sections 3 and 7 (1938) and DOE Organization Act (1977): Permitting for natural gas pipelines, LNG terminals located onshore and in state waters, and related facilities assigned to Secretary of Energy (subsequently delegated in part to the Federal Energy Regulatory Commission Chair; see below).<sup>w,x</sup>
- DOE Delegation Order No. 00-004.00A (2006): Permitting authority for construction and operation of natural gas import/export facilities delegated to the Federal Energy Regulatory Commission Chair.<sup>y</sup>
- Coast Guard and Maritime Transportation Act of 2012: Responsibility for permitting LNG terminals located beyond state waters assigned to the Maritime Administration within the Department of Transportation.

#### Export Authority

- Natural Gas Act Section 3 (1938): Permitting authority for exports and imports of natural gas granted to the Secretary of Energy.<sup>z,aa</sup>

### ELECTRICITY

#### Infrastructure and Export Authority

- Federal Power Act (1935) and DOE Organization Act (1977): Permitting and export authority assigned to the Secretary of Energy.<sup>ab</sup>
- Executive Order No. 10485 (1953), Executive Order No. 11423 (1968), Executive Order No. 12038 (1978): Permitting authority for cross-border electric transmission lines delegated to the Secretary of Energy.<sup>ac, ad</sup>

---

<sup>w</sup> 42 U.S.C. § 7151(b).

<sup>x</sup> 15 U.S.C. § 717b(a).

<sup>y</sup> Department of Energy. "Delegation Order No. 00-004.00A." 2006. <http://www.ferc.gov/industries/electric/indus-act/siting/doe-delegation.pdf>. Accessed January 20, 2015.

<sup>z</sup> Executive Order No. 10485. "Providing for the Performance of Certain Functions Heretofore Performed by the President with Respect to Electric Power and Natural Gas Facilities Located On The Borders Of The United States." 18 Fed. Reg. 5397. September 9, 1953. <http://www.archives.gov/federal-register/codification/executive-order/10485.html>. Accessed January 20, 2015.

<sup>aa</sup> Executive Order No. 12038. "Relating to Certain Functions Transferred to the Secretary of Energy by the Department of Energy Organization Act." 43 Fed. Reg. 4957. February 3, 1978. <http://www.archives.gov/federal-register/codification/executive-order/12038.html>. Accessed January 20, 2015.

<sup>ab</sup> 16 U.S.C. § 824a(e).

<sup>ac</sup> Executive Order No. 10485. "Providing for the Performance of Certain Functions Heretofore Performed by the President with Respect to Electric Power and Natural Gas Facilities Located On The Borders Of The United States." 18 Fed. Reg. 5397. September 9, 1953. <http://www.archives.gov/federal-register/codification/executive-order/10485.html>.

<sup>ad</sup> Executive Order No. 12038. "Relating to Certain Functions Transferred to the Secretary of Energy by the Department of Energy Organization Act." 43 Fed. Reg. 4957. February 7, 1978. <http://www.archives.gov/federal-register/codification/executive-order/12038.html>.

## Variability in Siting and Permitting Timetables

Large and complex infrastructure projects typically involve multi-year design, development, and construction timelines with complex approval processes. Timelines for approval vary,<sup>29,30,31</sup> and hurdles exist across the process. Proposed infrastructure projects that cross state boundaries require the developer to obtain site permits from each state involved, each with its own timeline and process.<sup>32,33,34</sup> Some Federal agencies will not begin their approval processes until state and local permitting processes are completed.<sup>35</sup> Schedules are also affected by incomplete applications to the Federal agencies, as well as the multiple agency reviews required at the local, state, and Federal levels.<sup>36,37</sup> Numerous other risks—such as policy and regulatory uncertainty—and commercial conditions—such as the availability of capital—can jeopardize project timelines and permitting schedules.<sup>38,39</sup> Project applicants are ultimately responsible for project development and play a critical role in establishing and maintaining project time frames and changes in applicant priorities, or available funding can delay or cancel projects. The interplay among these factors can impact decision making and extend the time frame for the Federal permitting and review process, especially for large and complex infrastructure projects.<sup>40</sup>

## Administration Actions to Modernize Siting, Permitting, and Review Processes

Building a 21st century infrastructure in a manner that safeguards our communities and the environment is an important component of President Obama's effort to strengthen our Nation's economy, create new jobs, and improve U.S. competitiveness in the global market. Federal agencies seek to ensure that as these major infrastructure projects are proposed, potential impacts on safety, security, and environmental and community resources, such as air, water, land, and historical and cultural assets, are considered and minimized. Over time, the process and legal requirements for the permitting and review of major infrastructure projects have developed in a siloed and ad-hoc way, creating complex processes that in some cases have taken years or longer to complete. Although there are several reasons why a major infrastructure project may be delayed (including applicant funding uncertainty and state and local reviews), over the past 3 years, the Administration has undertaken an ambitious effort to modernize the Federal Government's role in permitting and review processes.

To ensure his Administration took action to modernize these permitting and review processes, the President signed Executive Order No. 13604, *Improving Performance of Federal Permitting and Review of Infrastructure Projects*, on March 22, 2012, and subsequently a Presidential Memorandum on May 17, 2013, charging an interagency steering committee to lead the development of a plan to turn best practices into standard practice.

To date, agencies have expedited the review and permitting of more than 50 selected major infrastructure projects, including bridges, transit projects, railways, waterways, roads, and renewable energy generation projects. More information about these projects is posted online on the Federal Infrastructure Projects Permitting Dashboard. As of the date of this plan, 32 of these projects have completed the Federal review process, with 1 project denied. Estimated time savings range from several months to several years in many cases. Federal agencies have also identified a set of best practices for infrastructure permitting and review, ranging from expansion of information technology tools to strategies for improving collaboration and synchronizing processes across Federal agencies. These practices are reflected in the June 2012 "Federal Plan for Modernizing the Federal Permitting and Review Process for Better Projects, Improved Environmental and Community Outcomes, and Quicker Decisions" and individual agency plans at [www.permits.performance.gov](http://www.permits.performance.gov).

The Obama Administration has issued several subsequent executive directives to improve the Federal permitting and review process.

- The President also issued a memorandum on May 17, 2013, directing an interagency steering committee to develop a plan to turn permitting and review best practices identified by the Federal agencies—focused on early collaboration, increased transparency and accountability, and greater consideration of citizens’ interests—into standard practice for all major infrastructure projects.<sup>ae</sup>
- On June 7, 2013, the President issued a separate but related memorandum, directing Federal agencies to “develop an integrated, interagency pre-application process for significant onshore electric transmission projects requiring Federal approval.”<sup>af</sup> That 2013 memorandum also lays out principles for designation of energy right-of-way corridors on Federal lands under Section 368 of the Energy Policy Act of 2005; it also directs Federal agencies to re-evaluate existing energy rights-of-way corridor designations to determine the necessity for revisions, deletions, or additions to those energy corridors and to develop interagency mitigation plans, where appropriate, for environmental and cultural resources potentially impacted by projects sited in energy corridors.

The following highlights some of the key actions taken by the Administration to modernize the Federal Government’s siting, permitting, and review processes and provides a summary of the areas that could be enhanced.

## Developing Pre-Application Procedures

Pre-application permitting and review procedures can result in more efficient processing of final applications for energy infrastructure siting—particularly when such applications require multiple Federal authorizations (although, care must be taken that such procedures do not create an unnecessary additional hurdle to project approval or unnecessary additional bureaucratic delay).<sup>af</sup> Pre-application procedures can include meetings with appropriate agencies and project sponsors in advance of formal application submissions to help expedite the process.<sup>af, 43</sup>

In 2013, DOE—through the Council on Environmental Quality and the Administration’s Rapid Response Team for Transmission—developed and sought public input on a proposed Integrated Interagency Pre-Application Process required under a June 2013 Presidential Memorandum.<sup>ag, 44</sup> DOE is now considering issuing a revised regulation under Section 216(h) of the Federal Power Act, a section through which Congress granted DOE authority to coordinate applicable Federal authorizations and related environmental

---

<sup>ae</sup> The Administration released the “Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting” on May 14, 2014. The plan can be accessed at [www.permits.performance.gov/pm-implementation-plan-2014.pdf](http://www.permits.performance.gov/pm-implementation-plan-2014.pdf). “Major” is used in the plan to refer to projects that:

- Involve multiple Federal agencies and potentially tribal, state, or local government permit decision making or review actions associated with their development
- Provide regional (rather than localized) economic, cultural, or environmental benefits, or are directly linked to other critical infrastructure projects (e.g., rail to port)
- May have significant impacts on communities or the environment
- Involve resources and permitting actions that are not routine and necessitate focused attention and enhanced coordination
- Are otherwise classified as major by law or regulation.

<sup>af</sup> For example, FERC has regulations requiring a “pre-filing procedures and review process” for applications for interstate natural gas facilities under its jurisdiction (18 C.F.R. § 157.21). See: Government Accountability Office. “Interstate Natural Gas Pipelines: Process & Timing of FERC Permit Application Review.” p. 6. February 15, 2013. [fas.org/sgp/crs/misc/R43138.pdf](http://fas.org/sgp/crs/misc/R43138.pdf). Accessed February 10, 2015. Other Federal agencies, including the Army Corps of Engineers, BLM, and the Department of Agriculture, also require applicants for certain projects to participate in multi-agency pre-application meetings.

<sup>ag</sup> DOE is piloting this pre-application process for the proposed Great Northern Transmission Line. See: The White House. “Fact Sheet – Building a 21st Century Infrastructure: Modernizing Infrastructure Permitting.” May 14, 2014. [www.whitehouse.gov/the-press-office/2014/05/14/fact-sheet-building-21st-century-infrastructure-modernizing-infrastructure](http://www.whitehouse.gov/the-press-office/2014/05/14/fact-sheet-building-21st-century-infrastructure-modernizing-infrastructure). Accessed January 21, 2015.



reviews for transmission projects. In August 2013, BLM issued a proposed rule that would, consistent with the Integrated Interagency Pre-Application process, require all applicants for rights of way across public lands for transmission lines of 100 kilovolts or greater and pipelines 10 inches or more in diameter to hold pre-application meetings to coordinate with appropriate Federal and state agencies and tribal and local governments. The BLM rule would also require proponents to pay reasonable or actual costs associated with the pre-application process.<sup>45</sup>

## Cost Recovery for Review of Certain Project Applications

The lack of budgetary resources often constrains agencies' ability to promptly review permits. Mechanisms by which project sponsors can fund agency overhead costs associated with the review of an application are critical to their implementation capacity by ensuring that the agencies can dedicate sufficient resources to permit infrastructure projects in a timely fashion, especially if the funding happens in the earliest stages of agency involvement.<sup>46, 47</sup> While cost-recovery procedures must be rooted in statutory authority, departments and the

### SELECT ADMINISTRATION SITING AND PERMITTING INITIATIVES

The following is a list of select Administration actions taken both across and within Federal agencies to reduce the aggregate permitting and review time for infrastructure projects, while improving environmental and community outcomes.

#### Coordinated Project Review

The Interagency Steering Committee established under Executive Order No. 13604 and the Interagency Infrastructure Permitting Improvement Team housed at the Department of Transportation are currently developing a Policy for Coordinated Review of infrastructure project applications among Federal agencies and with project sponsors.

#### Pre-Application Procedures and Cost Recovery for Project Reviews

In 2013, the Department of Energy (DOE)—through the Council on Environmental Quality and the Administration's Rapid Response Team for Transmission—developed a proposed Integrated Interagency Pre-Application Process for onshore electric transmission lines. DOE is now considering issuing a revised regulation under Section 216(h) of the Federal Power Act that would incorporate that process. In September 2014, the Bureau of Land Management issued a proposed rule that would require all applicants for rights of way across public lands for electric transmission lines of 100 kilovolts or greater and pipelines 10 inches or more in diameter to hold pre-application meetings to coordinate with appropriate Federal and state agencies and tribal and local governments. It would also require proponents to pay reasonable or actual costs associated with the pre-application process.

#### Expanding Online Project Tracking and Developing Metrics

The Administration launched a Federal Infrastructure Project Permitting Dashboard to track designated infrastructure project schedules. The dashboard also hosts a "Permit Inventory"—a searchable database of required permits and approvals—as well as National Environmental Policy Act (NEPA) reviews and milestones relating to major infrastructure projects.

#### Expanding Availability and Sharing of Data and Geographic Information System Tools

The Administration has identified a number of actions and policies to facilitate adequate collection, integration, and sharing of the best available data to assist project sponsors in siting projects in order to minimize resource impacts and to support Federal decision making, including (1) NEPA node; (2) the Fish and Wildlife Service Information, Planning, and Conservation Tool; (3) the Environmental Protection Agency's NEPAassist; (4) the Eastern Interconnection States Planning Council Energy Zones Mapping Tool; (5) the Army Corps' Federal Support Toolbox; (6) the Western Governors' Associations' Crucial Habitat Assessment Tool; and (7) the National Oceanic and Atmospheric Administration's Social Vulnerability Index.

## SELECT ADMINISTRATION SITING AND PERMITTING INITIATIVES (continued)

### Designating Corridors for Pipelines, Electric Transmission Lines, and Related Infrastructure

The Department of the Interior and the Department of Agriculture are conducting a periodic review of the Western energy rights-of-way corridors designated in 2009. As directed in the June 2013 Presidential Memorandum, DOE issued two reports—one for assessing potential corridors in the West, as proposed by the Western Electricity Coordinating Council, and one for the rest of the United States that looks at current and potential crossings for transmission lines and oil and gas pipelines on federally protected national trails.

### Landscape and Watershed Level and Mitigation and Conservation Planning

Federal land management agencies have begun to implement mitigation and conservation planning at the landscape, ecosystem, or watershed level. For example, in March 2014, the Department of the Interior released the Solar “Regional Mitigation Strategy for the Dry Lake Solar Energy Zone,” and in April 2014, Secretary Jewell issued the “Strategy for Improving the Mitigation Practices of the Department of the Interior.”

agencies under them can use regulatory processes to apply that authority in intelligent and innovative ways.<sup>ah</sup> Some agencies do not have the statutory authority to recover such costs; others do not have authority to accept money until the application is “complete,” which puts a strain on resources and also discourages early coordination. BLM has addressed the challenge of the cost of early coordination by requiring in its recent proposed rule that applicants for rights of way for transmission lines of 100 kilovolts or greater and pipelines 10 inches or more in diameter pay reasonable or actual costs associated with the pre-application process for these projects.<sup>48</sup>

## Expanding Online Project Tracking and Developing Metrics

The development and publication of timely metrics and milestones for project permitting enables public scrutiny, provides agencies with information to identify and improve permitting and siting processes, and increases accountability and predictability.<sup>49, ai</sup> Moreover, consistent, government-wide data will provide actionable insight into current Federal permit and review practices, as well as inform discussions on ways to further improve the effectiveness and efficiency of these processes. Budgetary concerns have affected efforts to expand the Federal Infrastructure Projects Permitting Dashboard,<sup>aj</sup> to develop and collect permitting and review time-frame metrics, and to pilot environment and community outcome metrics.<sup>50</sup> Lack of funding also

---

<sup>ah</sup> In its proposed rule, BLM has proposed expanding the regulatory definition of reimbursable “management overhead costs” to include costs incurred by other Federal agencies in reviewing the same project application (79 Fed. Reg. 59022; September 30, 2014). The cost reimbursement measures are intended to coincide with a Secretarial Order for delegation of Federal Land Policy Management Act cost-recovery authority to other agencies and offices of the Department of the Interior.

<sup>ai</sup> DOE has such an online dashboard for electricity transmission projects. This dashboard, known as e-Trans, serves as the online database containing pertinent project information about each project, including, but not limited to, the physical aspects of the line, lead agency contact information, project schedules, and required permits. The e-Trans dashboard can be accessed at [trackingsystem.nisc-llc.com/etrans/utility/Search.seam](http://trackingsystem.nisc-llc.com/etrans/utility/Search.seam).

<sup>aj</sup> The Federal Infrastructure Permitting Dashboard was launched in October 2011 and is used by all Steering Committee agencies and hosted by the Department of Transportation. See: Steering Committee on Federal Infrastructure Permitting and Review Process Improvement. “Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting.” [www.permits.performance.gov/pm-implementation-plan-2014.pdf](http://www.permits.performance.gov/pm-implementation-plan-2014.pdf). Accessed January 20, 2015. It features a public website that displays project schedules with key milestones for more than 50 infrastructure projects and an internal site with an information technology platform that supports effective government-wide collaboration and the development of interagency project schedules. See: Federal Infrastructure Projects Permitting Dashboard. “Projects Under Active Review.” [www.permits.performance.gov/projects/active-projects](http://www.permits.performance.gov/projects/active-projects).

limits the promise of more widely accessible geographic information system (GIS) and information technology tools that would supplement the Federal Permit Inventory<sup>ak</sup> and provide more transparency and clarity to project sponsors and public stakeholders.

## Expanding Availability and Sharing of Data and GIS Tools

Careful project planning and selection of an appropriate project site before a permit application is filed can minimize uncertainty and significantly reduce the overall time frame for completing necessary permits and reviews.<sup>51</sup> The Administration has identified a number of actions and policies to facilitate adequate collection, integration, and sharing of the best available data to assist project sponsors in siting projects in order to minimize resource impacts and support Federal decision making.<sup>52</sup> The Administration has also emphasized the importance of providing such data, information, and decision-support tools for climate preparedness and resilience to agencies and project sponsors.<sup>53</sup> Key Federal and state data sharing, GIS, and other information technology tools already in use for agencies and public stakeholders include (1) NEPA node, a geospatial and document management system made freely available to Federal staff and contractors to implement NEPA and related environmental review and permitting processes;<sup>al</sup> (2) the Information, Planning, and Conservation Tool developed by a partnership between the Fish and Wildlife Service and the U.S. Geological Survey;<sup>am</sup> (3) the Environmental Protection Agency's NEPA Assist;<sup>an</sup> (4) the Eastern Interconnection States Planning Council's Energy Zone Mapping Tool;<sup>ao</sup> (5) the Army Corps' Federal Support Toolbox;<sup>ap</sup> (6) the DOE-funded Western Governors' Crucial Habitat Assessment Tool;<sup>aq</sup> (7) the Department of Commerce's National Oceanic and Atmospheric Administration's Social Vulnerability Index;<sup>ar</sup> and (8) Climate.Data.Gov and the Climate

---

<sup>ak</sup> The Permit Inventory is a searchable database of required permits and approvals, as well as NEPA reviews and milestones relating to major infrastructure projects. The inventory can be accessed at [www.permits.performance.gov/permit-inventory](http://www.permits.performance.gov/permit-inventory).

<sup>al</sup> This interactive mapping tool contains 278 data sets/layers. It can be accessed at [nepanode.anl.gov](http://nepanode.anl.gov).

<sup>am</sup> The Information, Planning, and Conservation Tool system is an interactive, Web-based tool illustrating the natural resources for which the Fish and Wildlife Service has trust or regulatory responsibility. The tool allows interested parties to access a public website to determine if there are any Fish and Wildlife Service trust resources, including endangered and threatened species, in a potential project area before beginning the project design. In addition, project sponsors can get information about a species and its needs, as well as measures they can take to help protect and conserve the species when designing and constructing their project. The tool can be accessed at [ecos.fws.gov/ipac.0](http://ecos.fws.gov/ipac.0)

<sup>an</sup> NEPA Assist is a Web-based mapping tool to facilitate efficient and effective environmental reviews and project planning. The tool is part of an initiative developed by the Environmental Protection Agency and selected as a pilot by the Council of Environmental Quality to showcase its potential to modernize and reinvigorate Federal agency implementation of NEPA through innovation, public participation, and transparency. The tool can be accessed at [www.epa.gov/compliance/nepa/nepassist-mapping.html](http://www.epa.gov/compliance/nepa/nepassist-mapping.html).

<sup>ao</sup> The Energy Zone Mapping Tool, funded by DOE, is a free online mapping tool that identifies potential clean energy resource areas within the Eastern Transmission Interconnection. This website provides information about the study, background on the energy resources, and details on the data layers used in the tool. The tool includes 263 GIS data layers and links to policies and regulations, printable maps, and related documents. The tool can be accessed at [eispctools.anl.gov](http://eispctools.anl.gov).

<sup>ap</sup> The Federal Support Toolbox, launched in May 2013, is a comprehensive "one-stop-shop" online water resources data portal with direct links to valuable data, state-of-the-art models, and tools for utilization in information sharing and collaboration for the water resources community in the United States and internationally. It serves as a single point of entry to comprehensive information about water resources programs, initiatives, legislation, policies, regulations, collaborations, partnerships, databases, tools, models, data, research and development, education, and leadership that is housed on a participating agency's or organization's own server.

<sup>aq</sup> The Western Governors' Crucial Habitat Assessment Tool is an online system of maps that displays crucial wildlife habitat based on commonly agreed upon definitions developed by the Western Governors' Wildlife Council. The tool provides information across 16 Western states and links to five state-level Crucial Habitat Assessment Tools; it will link to new state Crucial Habitat Assessment Tools as they become available. The tool can be accessed at [www.westgovchat.org](http://www.westgovchat.org).

<sup>ar</sup> The Social Vulnerability Index measures the social vulnerability of U.S. counties to environmental hazards and the ability of those counties to prepare for, respond to, and recover from hazards. The tool was developed through a partnership with the University of South Carolina and funding via South Carolina Sea Grant and the National Oceanic and Atmospheric Administration's Office for Coastal Management. The tool can be accessed at [coast.noaa.gov/digitalcoast/data/sovi](http://coast.noaa.gov/digitalcoast/data/sovi).

Resilience Tool Kit.<sup>as</sup> The Desert Renewable Energy Conservation Plan (DRECP), a draft of which was issued in September 2014,<sup>54</sup> employed sophisticated integration of GIS and resource data across four agencies—two Federal agencies (BLM and the Fish and Wildlife Service) and two states—allowing them to plan development and conservation areas in 22.5 million acres in the California desert.<sup>at</sup>

## Designating Corridors for Pipelines, Electric Transmission Lines, and Related Infrastructure

Section 368 of the Energy Policy Act of 2005 required the Departments of Interior, Agriculture, Commerce, Defense, and Energy—in consultation with FERC and tribal entities—to work together to designate energy rights-of-way corridors for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities on Federal lands—first in 11 Western contiguous states (Section 368(a)) and later, if warranted, in the remaining states (Section 368(b)).<sup>au, 55</sup> The Departments of Interior and Agriculture designated more than 6,000 miles of these corridors in 2009 for 11 Western states<sup>56, 57, av</sup> and are currently undertaking a periodic corridor review for the Western states that may lead to revised or new corridor designations.<sup>aw</sup> While their use is voluntary, project developers and relevant Federal agencies have, to varying extents, used portions of the Western energy transport corridors for projects since 2009. Unless funding resources are provided to the Federal agencies to continue this work, it is likely any new corridor decisions will be delayed.

## Expanding Landscape and Watershed-Level Mitigation and Conservation Planning

Federal land management agencies can implement mitigation and conservation planning at the landscape, ecosystem, or watershed level to provide environmental, cost, and time-saving benefits to energy infrastructure siting and mitigation.<sup>58, 59</sup> Through proper analysis and application of applicable GIS technologies, potential

---

<sup>as</sup> Climate.data.gov includes data related to climate change that can help inform America's communities, businesses, and citizens. Initially, users can find data and resources related to coastal flooding, food resilience, and water and ecosystem vulnerability. Over time, users will be able to find additional data and tools relevant to other important climate-related impacts, including risks to energy infrastructure and human health. The site can be accessed at [www.data.gov/climate](http://www.data.gov/climate). The U.S. Climate Resilience Toolkit provides scientific tools, information, and expertise to help people manage their climate-related risks and opportunities and improve their resilience to extreme events. The site is designed to serve interested citizens, communities, businesses, resource managers, planners, and policy leaders at all levels of government. The site can be accessed at [toolkit.climate.gov/tools](http://toolkit.climate.gov/tools).

<sup>at</sup> The DRECP is intended to advance state and Federal conservation goals in the Mojave and Colorado Desert regions of California—an area covering more than 22 million acres of private, local, state, and Federal land—while also facilitating the timely permitting of renewable energy projects and related electric transmission projects under applicable state and Federal laws.

<sup>au</sup> Designation of energy corridor on Federal lands may help expedite the siting, permitting, and review process for projects within the corridors.

<sup>av</sup> For the rest of the United States, which includes 37 Eastern states, Alaska, and Hawaii, a 2008 public request for interest in energy transport corridors showed a relatively indifferent and minor public response, with only one request for a designation, which was subsequently withdrawn. Therefore, the Departments of Energy, Interior, Agriculture, Defense, and Commerce collectively decided at that time not to take actions to designate energy transport corridors in those states. See: Argonne National Laboratory. "Energy Transport Corridors: The Potential Role of Federal Lands in States Identified by the Energy Policy Act of 2005, Section 368(b)." August 2011. [eastcorridoreis.anl.gov/documents/docs/Section368bReport.pdf](http://eastcorridoreis.anl.gov/documents/docs/Section368bReport.pdf).

<sup>aw</sup> The corridor review is part of a court settlement to a complaint filed in 2009 and pursuant to the June 2013 Transmission Presidential Memorandum. See: Department of the Interior, Bureau of Land Management. "Electric Transmission Facilities & Energy Corridors." [www.blm.gov/wo/st/en/prog/energy/transmission.html](http://www.blm.gov/wo/st/en/prog/energy/transmission.html). Supporting the Western corridor review is a 2014 DOE report that assesses potential energy corridors proposed by the Western Electricity Coordinating Council. See: Department of Energy. "Analysis of Potential Energy Corridors Proposed by the Western Electricity Coordinating Council." March 4, 2014. [www.ipd.anl.gov/anlpubs/2014/02/103660.pdf](http://www.ipd.anl.gov/anlpubs/2014/02/103660.pdf). Pursuant to the 2013 Transmission Presidential Memorandum, DOE issued another report in 2014 for these same states, which looked at current and potential crossings by electricity transmission lines and oil and gas pipelines of the thousands of miles of 20 federally protected national trails. The report gives new baseline information available for use by interested parties to study routing scenarios for new projects that could mitigate impacts on national trails. The report also describes the 2008 work. See: Department of Energy. "Electricity Transmission, Pipelines, and National Trails: An Analysis of Current and Potential Intersections on Federal Lands in the Eastern United States, Alaska, and Hawaii." March 25, 2014. [www.ipd.anl.gov/anlpubs/2014/03/104083.pdf](http://www.ipd.anl.gov/anlpubs/2014/03/104083.pdf).



conflicts in project siting that can create substantial barriers to project completion can be avoided and minimized.<sup>60</sup> Determining compensatory mitigation requirements as an integrated part of project planning can expedite development and increase certainty for interested stakeholders.<sup>61, 62, 63</sup> The preparation of advanced mitigation strategies, which pre-identify potential mitigation measures, can facilitate important collaboration, reduce project costs, and substantially streamline the project review process through minimization of conflicts with other resource values, especially if advanced mitigation actions have taken place and provide credits that can be used to offset future project needs.<sup>64, 65</sup>

Federal land management agencies are implementing such initiatives. For example, in April 2014, Secretary of the Interior Jewell released the Strategy for Improving the Mitigation Practices of the Department of the Interior. Through the implementation of this strategy, the Department will work to advance landscape-scale, science-based management approaches that both encourage infrastructure development and protect natural and cultural resources.<sup>66</sup> DRECP (mentioned above) and the Solar “Regional Mitigation Strategy for the Dry Lake Solar Energy Zone” are two additional examples of ambitious Federal-state landscape-level planning. When completed, DRECP is expected to provide binding, long-term endangered species permit assurances for project development within specified areas, while also reserving 13.7 million acres of the California Desert for conservation.<sup>ax</sup> The Dry Lake Solar Energy Zone, developed pursuant to the Western Solar Programmatic Environmental Impact Statement, is designed to encourage project applicants to invest in conservation opportunities on a landscape scale, thereby maximizing the value of their mitigation dollars.<sup>67</sup>

Another particularly relevant initiative aimed at implementing landscape-scale and watershed-scale approaches nationwide is “Eco-Logical: An Ecosystem Approach to Infrastructure Development.”<sup>68</sup> Eco-Logical is the outcome of a partnership among eight Federal agencies<sup>ay</sup> to deliver a step-wise approach to “ecosystem-based mitigation.”<sup>az</sup> Since 2008, these agencies have continued to work together and in parallel to realize the vision laid out in Eco-Logical through regular meetings and individual agency programs. Support for landscape-scale and watershed-scale approaches also appears in the 2008 Environmental Protection Agency and Army Corps of Engineers Final Compensatory Mitigation Rule,<sup>69</sup> which formally established a mitigation hierarchy with a strong preference for mitigation banking and in-lieu fee programs for unavoidable impacts to wetlands, streams, and other aquatic resources.

## **Establishing Regional and State Partnerships and Dedicated Cross-Disciplinary Energy Infrastructure Teams**

Federal partnerships with state and regional actors—such as a Transmission Siting Task Force that the Western Governors’ Association and its member state siting agencies created, which includes Federal siting agencies on an ex-officio basis<sup>70</sup>—may prove helpful in speeding up the development of infrastructure projects because much of the review and permitting decisions for such projects occurs in regional and field offices of Federal agencies and within and across states.<sup>71, 72</sup> When building capacity or making other energy-infrastructure-related staffing decisions, it is advantageous to establish, wherever practical, joint, single-point-of-contact offices that consolidate agency expertise. Co-location of energy infrastructure environmental review and permitting staff from multiple Federal agencies helps to ensure coordinated, efficient, and expeditious permitting (e.g., in the Departments of Agriculture and the Interior’s Service First authority<sup>73</sup> and BLM’s Oil

---

<sup>ax</sup> DRECP is a Natural Community Conservation Plan under California State law and will include one or more Habitat Conservation Plans under the Federal Endangered Species Act.

<sup>ay</sup> BLM, the Federal Highway Administration, the National Oceanic and Atmospheric Administration, the National Park Service, the Army Corps of Engineers, the Environmental Protection Agency, the Fish and Wildlife Service, and the Forest Service.

<sup>az</sup> Eco-Logical encourages Federal, state, tribal, and local partners involved in infrastructure planning, design, review, and construction to use flexibility in regulatory processes. Specifically, Eco-Logical puts forth the conceptual groundwork for integrating plans across agency boundaries and endorses ecosystem-based mitigation, an innovative method of mitigating infrastructure impacts that cannot be avoided. Eco-Logical can be accessed at [www.environment.fhwa.dot.gov/ecological/eco\\_index.asp](http://www.environment.fhwa.dot.gov/ecological/eco_index.asp).

and Gas Pilot Office Program<sup>74</sup>). For example, the regional response teams established by the Administration in 2013—including the Pacific Northwest Regional Infrastructure Team<sup>75</sup> and the Renewable Energy Action Team, a partnership between the Department of the Interior and the State of California that helped permit thousands of megawatts of renewable energy generation projects and related transmission lines<sup>76</sup>—have facilitated state partnerships and collaboration across agencies with different missions.

## Facilitating Non-Federal Activity in Support of Siting and Permitting

Partnerships with state and tribal governments, regional planning authorities, and the private sector can improve infrastructure siting and permitting. For example, DOE and the Western Governors' Association partnered in 2014 to launch an online toolkit—the Regulatory and Permitting Information Desktop Toolkit—that collects publicly available information about permits and regulations affecting energy and bulk transmission project development to facilitate communication among project developers; agency personnel at all jurisdictional levels; and project stakeholders, including the public.<sup>77</sup> Elsewhere, the Council of State Governments developed an Interstate Transmission Line Siting Compact with model language for state legislatures to enact a compact for interstate cooperation on electric transmission siting.<sup>78</sup> That compact includes a mechanism through which Federal agencies and tribal governments can participate as equals with states in evaluating proposed electric transmission routes and in the decision-making processes used to determine whether an application is approved, approved with changes, or rejected for cause. More informal than a legal regional compact, regional siting protocols for siting transmission lines were signed in 2002 among the Western Governors' Association and five Federal agencies;<sup>79</sup> protocols were signed again in 2011 among then-member governors of the Midwest Governors Association and Manitoba, Canada.<sup>80</sup> Elsewhere, the New England States Committee on Electricity created in 2011 an Interstate Transmission Siting Collaborative.<sup>81</sup> Fostering additional efforts of this sort may benefit all project proposals and help streamline the siting and permitting process.

## QER Recommendations

Siting, permitting, and review of energy-related TS&D infrastructures are critical elements for meeting energy, environmental, and competitiveness goals. Current Administration initiatives are designed to expedite siting; improve communication and engagement among tribal, state and local governments, and the public at large; and modernize tools and processes available to policymakers. To these ends, we recommend the following:

**Allocate resources to key Federal agencies involved in the siting, permitting, and review of infrastructure projects:** Federal agencies responsible for infrastructure siting, review, and permitting have experienced dramatic appropriations cuts and reductions in staff. Competing demands for agency resources and inadequate support for affected agency staff means that energy infrastructure projects could face delays. Many of the components of the overall effort to improve the Federal siting and permitting processes have been stymied in recent years by appropriations shortfalls. Congress should fully fund these priorities.

**Prioritize meaningful public engagement through consultation with Indian Tribes, coordination with state and local governments, and facilitation of non-Federal partnerships:** While the Federal Government's role in infrastructure siting and permitting is important, many large energy infrastructure projects depend on state and local siting decisions. The Federal Government also has a responsibility to consult with affected Indian Tribes on projects that cross tribal lands or impact traditional cultural properties and certain other historic and cultural resources. Early and meaningful public engagement with affected residential communities, nonprofit organizations,

## QER Recommendations (continued)

and other non-Federal stakeholders through the NEPA process and other forums can reduce siting conflicts. Federal agency coordination with state and local governments and government-to-government consultation with affected Indian Tribes should remain a Federal Government priority.

**Establish regional and state partnerships and co-locate dedicated cross-disciplinary energy infrastructure teams:** When possible, Federal agencies should co-locate energy infrastructure environmental review and permitting staff from multiple Federal agencies' regional and field offices. An interagency effort should be made to facilitate interagency collaboration and engage the impacted communities.

**Expand landscape- and watershed-level mitigation and conservation planning:** Given their size and complexity, many major infrastructure projects have impacts on the Nation's landscapes and natural and cultural resources. When adverse impacts cannot be avoided or minimized any further, Federal agencies should seek innovative approaches to compensate for adverse project impacts commensurate with the scope and scale of the project and effects to resources. In order to produce the greatest environmental benefits, mitigation efforts should be focused on activities where environmental needs and potential environmental contributions are the greatest and in accordance with statutory requirements. Through mitigation planning at a landscape, ecosystem, or watershed scale, agencies can locate mitigation activities in the most ecologically important areas.

**Enact statutory authorities to ensure coordination across agencies:** To implement its Federal permitting and review proposals, the Obama Administration proposed establishing an Interagency Infrastructure Permitting Improvement Center in the Office of the Secretary of Transportation. Congress should authorize and fund the center, as set forth in Section 1009 of the Administration's draft legislation for the Generating Renewal, Opportunity, and Work with Accelerated Mobility, Efficiency, and Rebuilding of Infrastructure and Communities throughout America Act, or GROW AMERICA Act.

**Adopt Administration proposals to authorize recovery of costs for review of project applications:** While some agencies have legal authority to recover permitting costs from project applicants, others do not possess the authority to do so. In some circumstances, as proposed in the President's Fiscal Year 2016 Budget, additional flexibility for certain agencies to accept funds from applicants would be appropriate and could expedite the Federal permitting and review process.

## RECOMMENDATIONS IN BRIEF: Siting and Permitting of TS&D Infrastructure

---

**Allocate resources to key Federal agencies involved in the siting, permitting, and review of infrastructure projects.** Federal agencies responsible for infrastructure siting, review, and permitting have experienced dramatic appropriations cuts and reductions in staff. Many of the components of the overall effort to improve the Federal siting and permitting processes have been stymied in recent years by appropriations shortfalls. Congress should fully fund these priorities.

**Prioritize meaningful public engagement through consultation with Indian Tribes, coordination with state and local governments, and facilitation of non-Federal partnerships.** Early and meaningful public engagement with affected residential communities, nonprofit organizations, and other non-Federal stakeholders through the National Environmental Policy Act process and other forums can reduce siting conflicts. Federal agency coordination with state and local governments and government-to-government consultation with affected Indian Tribes should remain a Federal Government priority. When possible, Federal agencies should co-locate energy infrastructure environmental review and permitting staff from multiple Federal agencies' regional and field offices.

**Expand landscape- and watershed-level mitigation and conservation planning.** When adverse impacts to the Nation's landscape cannot be avoided or minimized any further, Federal agencies should seek innovative approaches to compensate for adverse project impacts commensurate with the scope and scale of the project and effects to resources. Through mitigation planning at a landscape, ecosystem, or watershed scale, agencies can locate mitigation activities in the most ecologically important areas.

**Enact statutory authorities to improve coordination across agencies.** Congress should authorize and fund the Interagency Infrastructure Permitting Improvement Center in the Department of Transportation, as set forth in Section 1009 of the Administration's draft legislation for the Generating Renewal, Opportunity, and Work with Accelerated Mobility, Efficiency, and Rebuilding of Infrastructure and Communities throughout America Act, or GROW AMERICA Act.

**Adopt Administration proposals to authorize recovery of costs for review of project applications.** Consistent with the proposal in the President's Fiscal Year 2016 Budget request, additional flexibility for certain agencies to accept funds from applicants would be appropriate and could expedite the Federal permitting and review process.



## Endnotes

1. The White House. “Presidential Memorandum - Speeding Infrastructure Development through More Efficient and Effective Permitting and Environmental Review.” August 31, 2011. <http://www.whitehouse.gov/the-press-office/2011/08/31/presidential-memorandum-speeding-infrastructure-development-through-more>. Accessed March 19, 2015.
2. Executive Order No. 13604. “Improving Performance of Federal Permitting and Review of Infrastructure Projects.” 77 Fed. Reg. 18887. March 22, 2012. <http://www.whitehouse.gov/the-press-office/2012/03/22/executive-order-improving-performance-federal-permitting-and-review-infr>. Accessed January 15, 2015.
3. Government Accountability Office. “2013 Pipeline Permitting: Interstate and Intrastate Natural Gas Permitting Processes Include Multiple Steps, and Time Frames Vary.” February 15, 2013. <http://www.gao.gov/assets/660/652225.pdf>. Accessed January 15, 2015.
4. Vann, A. “The Federal Government’s Role in Electric Transmission Facility Siting.” Congressional Research Service. October 2010. <http://fas.org/sgp/crs/misc/R40657.pdf>. Accessed March 27, 2015.
5. IOGCC/NARUC Pipeline Siting Work Group. “Final Report: Recommendations of the naruc/iogcc Pipeline Work Group.” July 2001. <http://www.naruc.org/Publications/pipelinelworkgroup.pdf>. Accessed March 27, 2015.
6. 25 C.F.R. § 169.
7. 15 U.S.C. § 717f(c).
8. Executive Order No. 11423. “Providing for the Performance of Certain Functions Heretofore Performed by the President with Respect to Certain Facilities Constructed and Maintained on the Borders of the United States.” 33 Fed. Reg. 11741. August 20, 1968. <http://www.archives.gov/federal-register/codification/executive-order/11423.html>.; Executive Order No. 13337. “Issuance of Permits with Respect to Certain Energy-Related Facilities and Land Transportation Crossings on the International Boundaries of the United States.” 69 Fed. Reg. 25299. May 5, 2004. <http://www.gpo.gov/fdsys/pkg/FR-2004-05-05/pdf/04-10378.pdf>.; Executive Order No. 10485. “Providing for the Performance of Certain Functions Heretofore Performed by the President with Respect to Electric Power and Natural Gas Facilities Located on the Borders of the United States.” 18 Fed. Reg. 5397. September 9, 1953. <http://www.archives.gov/federal-register/codification/executive-order/10485.html>. Accessed January 20, 2015.; Executive Order No. 12038. “Relating to Certain Functions Transferred to the Secretary of Energy by the Department of Energy Organization Act.” 43 Fed. Reg. 4957. February 3, 1978. <http://www.archives.gov/federal-register/codification/executive-order/12038.html>. Accessed January 20, 2015.
9. Natural Gas Act §§ 3 and 7, 15 U.S.C. § 717f, 42 U.S.C. § 7151(b). June 21, 1938.
10. Department Of Energy Organization Act. 15 U.S.C. § 717b(a). August 4, 1977.
11. Executive Order No. 10485. “Providing for the Performance of Certain Functions Heretofore Performed by the President with Respect to Electric Power and Natural Gas Facilities Located on the Borders of the United States.” 18 Fed. Reg. 5397. September 3, 1953. <http://www.archives.gov/federal-register/codification/executive-order/10485.html>.
12. Executive Order No. 12038. “Relating to Certain Functions Transferred to the Secretary of Energy by the Department of Energy Organization Act.” 43 Fed. Reg. 4957. February 3, 1978. <http://www.archives.gov/federal-register/codification/executive-order/12038.html>.
13. 16 U.S.C. § 824a(e).
14. Executive Order No. 10485. “Providing for the Performance of Certain Functions Heretofore Performed by the President with Respect to Electric Power and Natural Gas Facilities Located on the Borders of the United States.” 18 Fed. Reg. 5397. September 3, 1953. <http://www.archives.gov/federal-register/codification/executive-order/10485.html>. Accessed January 20, 2015.

15. Executive Order No. 12038. “Relating to Certain Functions Transferred to the Secretary of Energy by the Department of Energy Organization Act.” 43 Fed. Reg. 4957. February 3, 1978. <http://www.archives.gov/federal-register/codification/executive-order/12038.html>. Accessed January 20, 2015.
16. 42 U.S.C. § 6212.
17. Steering Committee on Federal Infrastructure Permitting and Review Process Improvement. “Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting.” p. 7. May 2014. <http://www.permits.performance.gov/pm-implementation-plan-2014.pdf>. Accessed January 15, 2015.
18. Executive Order No. 13175. “Consultation and Coordination with Indian Tribal Governments.” 65 Fed. Reg. 67249. November 6, 2000.
19. Secretarial Order 3317. “Department of the Interior Policy on Consultation with Indian Tribes.” December 31, 2012. <http://www.doi.gov/cobell/upload/FINAL-Departmental-tribal-consultation-policy.pdf>.
20. Steering Committee on Federal Infrastructure Permitting and Review Process Improvement. “Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting.” p. 12. May 2014. <http://www.permits.performance.gov/pm-implementation-plan-2014.pdf>. Accessed January 15, 2015.
21. 42 U.S.C. § 4321 et seq.
22. 40 C.F.R. §§ 1500–1508.
23. 40 C.F.R. §§ 1508.14 and 1508.15.
24. Government Accountability Office. “National Environmental Policy Act: Little Information Exists on NEPA Analyses.” April 15, 2014. <http://www.gao.gov/assets/670/662546.pdf>. Accessed January 30, 2015.
25. 40 C.F.R. § 1503 and §§ 1501.4(e) and 1506.6.
26. Zichella, C. and J. Hladik. “America’s Power Plan – Siting: Finding a Home for Renewable Energy and Transmission.” September 19, 2013. <http://americaspowerplan.com/wp-content/uploads/2013/09/APP-SITING-PAPER.pdf>. Accessed February 10, 2015.
27. Center for Rural Affairs. “Landowner Compensation in Transmission Siting for Renewable Energy Facilities Siting.” May 2014. [http://www.cfra.org/sites/www.cfra.org/files/publications/landowner-compensation-052014\\_0.pdf](http://www.cfra.org/sites/www.cfra.org/files/publications/landowner-compensation-052014_0.pdf). Accessed February 25, 2015.
28. Western Governors’ Association. “Siting and Permitting Transmission Reforms.” p. 4. May 2012. [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.westgov.org%2Fcomponent%2Fdocman%2Fdoc\\_download%2F1605-siting-report-2012&ei=jG\\_vVJ5Xk4Y21Y-D6A8&usq=AFQjCNF39jwmg03JgEBc8DU1ocov8jyqg&bvm=bv.86956481,d.eXY](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.westgov.org%2Fcomponent%2Fdocman%2Fdoc_download%2F1605-siting-report-2012&ei=jG_vVJ5Xk4Y21Y-D6A8&usq=AFQjCNF39jwmg03JgEBc8DU1ocov8jyqg&bvm=bv.86956481,d.eXY). Accessed February 26, 2015.
29. Government Accountability Office. “National Environmental Policy Act: Little Information Exists on NEPA Analyses.” p. 18. April 2014. <http://www.gao.gov/assets/670/662546.pdf>. Accessed January 30, 2015.
30. Government Accountability Office. “2013 Pipeline Permitting: Interstate and Intrastate Natural Gas Permitting Processes Include Multiple Steps, and Time Frames Vary.” February 15, 2013. <http://www.gao.gov/assets/660/652225.pdf>. Accessed January 15, 2015.
31. Congressional Research Service. “Interstate Natural Gas Pipelines: Process & Timing of FERC Permit Application Review.” January 16, 2015. <https://www.hsdl.org/?view&did=761686>. Accessed February 10, 2015.
32. Luciani, R. and M. Shober. “Transmission Planning Whitepaper.” Eastern Interconnection States’ Planning Council. p. 19 and Appendix B. January 2014. <http://communities.nrri.org/documents/68668/466bb83f-729e-4787-9c02-ca140679e488>.
33. Keyes & Fox LLP. “Report to Western Governors’ Association: State Transmission Siting Processes.” p. 11. April 30, 2012. [www.westgov.org/component/docman/doc\\_download/1593-state-siting](http://www.westgov.org/component/docman/doc_download/1593-state-siting).

34. Government Accountability Office. “2013 Pipeline Permitting: Interstate and Intrastate Natural Gas Permitting Processes Include Multiple Steps, and Time Frames Vary.” February 15, 2013. <http://www.gao.gov/assets/660/652225.pdf>. Accessed January 15, 2015.
35. Government Accountability Office. “2013 Pipeline Permitting: Interstate and Intrastate Natural Gas Permitting Processes Include Multiple Steps, and Time Frames Vary.” February 15, 2013. <http://www.gao.gov/assets/660/652225.pdf>. Accessed January 15, 2015.
36. Government Accountability Office. “2013 Pipeline Permitting: Interstate and Intrastate Natural Gas Permitting Processes Include Multiple Steps, and Time Frames Vary.” p. 30. February 15, 2013. <http://www.gao.gov/assets/660/652225.pdf>. Accessed January 15, 2015.
37. Executive Order No. 13604. “Improving Performance of Federal Permitting and Review of Infrastructure Projects.” 77 Fed. Reg. 18887. March 22, 2012. <http://www.whitehouse.gov/the-press-office/2012/03/22/executive-order-improving-performance-federal-permitting-and-review-infr>. Accessed January 21, 2015.
38. Zichella, C. and J. Hladik. “America’s Power Plan—Transmission Policy: Planning for and Investing in Wires.” p. 14. September 19, 2013. <http://americaspowerplan.com/wp-content/uploads/2013/09/APP-TRANSMISSION-PAPER.pdf>.
39. National Electrical Manufacturers Association. “Siting Transmission Corridors – A Real Life Game of Chutes and Ladders.” 2011. <http://www.nema.org/Policy/Documents/tc-gameboard-4web.pdf>. Accessed January 21, 2015.
40. Steering Committee on Federal Infrastructure Permitting and Review Process Improvement. “Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting.” p. 4–5. May 2014. <http://www.permits.performance.gov/pm-implementation-plan-2014.pdf>. Accessed January 15, 2015.
41. The White House. “Presidential Memorandum – Transforming our Nation’s Electric Grid Through Improved Siting, Permitting, and Review.” June 7, 2013. <https://www.whitehouse.gov/the-press-office/2013/06/07/presidential-memorandum-transforming-our-nations-electric-grid-through-i>. Accessed January 15, 2015.
42. Government Accountability Office. “2013 Pipeline Permitting: Interstate and Intrastate Natural Gas Permitting Processes Include Multiple Steps, and Time Frames Vary.” p. 12–16. February 15, 2013. <http://www.gao.gov/assets/660/652225.pdf>. Accessed January 15, 2015.
43. Government Accountability Office. “Renewable Energy – Agencies Have Taken Steps Aimed at Improving the Permitting Process for Development on Federal Lands.” p. 26. January 18, 2013. <http://www.gao.gov/products/GAO-13-189>. Accessed February 10, 2015.
44. Department of Energy. “Improving Performance of Federal Permitting and Review of Infrastructure Projects.” 78 Fed. Reg. 53436. August 29, 2013. <http://www.energy.gov/sites/prod/files/2013/08/f2/RFI-IIP-FRN082913.pdf>. Accessed January 20, 2015.
45. Department of the Interior, Bureau of Land Management. “Competitive Processes, Terms, and Conditions for Leasing Public Lands for Solar and Wind Energy Development and Technical Changes and Corrections.” Proposed Rule. 79 Fed. Reg. 59022. September 30, 2014. <http://www.gpo.gov/fdsys/pkg/FR-2014-09-30/pdf/2014-23089.pdf>. Accessed February 26, 2015.
46. Government Accountability Office. “Renewable Energy – Agencies Have Taken Steps Aimed at Improving the Permitting Process for Development on Federal Lands.” p. 37. January 18, 2013. <http://www.gao.gov/products/GAO-13-189>. Accessed February 10, 2015.
47. Steering Committee on Federal Infrastructure Permitting and Review Process Improvement. “Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting.” p. 44. May 2014. <http://www.permits.performance.gov/pm-implementation-plan-2014.pdf>. Accessed January 15, 2015.
48. Department of the Interior, Bureau of Land Management. “Competitive Processes, Terms, and Conditions for Leasing Public Lands for Solar and Wind Energy Development and Technical Changes and Corrections.” Proposed Rule. 79 Fed. Reg. 59022. September 30, 2014. <http://www.gpo.gov/fdsys/pkg/FR-2014-09-30/pdf/2014-23089.pdf>. Accessed February 26, 2015.

49. Executive Office of the President. "Report to the President – Rebuilding America's Infrastructure: Cutting Timelines and Improving Outcomes for Federal Permitting and Review of Infrastructure Projects." May 2013. <http://www.whitehouse.gov/sites/default/files/omb/reports/report-to-the-president-rebuilding-americas-infrastructure.pdf>. Accessed January 15, 2015.
50. Cobert, B., M. Boots and V. Mendez. "Cross-Agency Priority Goal, Infrastructure Modernization, Quarterly Progress Update." Fiscal Year 2014 Quarter 4. <http://www.performance.gov/content/infrastructure-permitting-modernization#progress-update>. Accessed February 11, 2015.
51. Government Accountability Office. "2013 Pipeline Permitting: Interstate and Intrastate Natural Gas Permitting Processes Include Multiple Steps, and Time Frames Vary." p. 32. February 15, 2013. <http://www.gao.gov/assets/660/652225.pdf>. Accessed January 15, 2015.
52. Steering Committee on Federal Infrastructure Permitting and Review Process Improvement. "Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting." p. 23–24. May 2014. <http://www.permits.performance.gov/pm-implementation-plan-2014.pdf>. Accessed January 15, 2015.
53. Executive Order No. 13653. "Preparing the United States for the Impacts of Climate Change." 78 Fed. Reg. 66819. November 6, 2013. <https://www.whitehouse.gov/the-press-office/2013/11/01/executive-order-preparing-united-states-impacts-climate-change>. Accessed March 15, 2015.
54. California Energy Commission. "Draft: Desert Renewable Energy Conservation Plan." September 23, 2014. <http://www.drecp.org/draftdrecp/>. Accessed January 21, 2015.
55. The White House. "Presidential Memorandum – Transforming our Nation's Electric Grid Through Improved Siting, Permitting, and Review." June 7, 2013. <https://www.whitehouse.gov/the-press-office/2013/06/07/presidential-memorandum-transforming-our-nations-electric-grid-through-i>. Accessed January 15, 2015.
56. Department of the Interior, Bureau of Land Management. "Approved Resource Management Plan Amendments/ Record of Decision (ROD) for Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States." [http://www.corridoreis.anl.gov/documents/docs/Energy\\_Corridors\\_final\\_signed\\_ROD\\_1\\_14\\_2009.pdf](http://www.corridoreis.anl.gov/documents/docs/Energy_Corridors_final_signed_ROD_1_14_2009.pdf). Accessed March 9, 2015.
57. Department of Agriculture, Forest Service. "Designation of Section 368 Energy Corridors on National Forest System Land in 10 Western States." [http://corridoreis.anl.gov/documents/docs/WWEC\\_FS\\_ROD.pdf](http://corridoreis.anl.gov/documents/docs/WWEC_FS_ROD.pdf). Accessed March 9, 2015.
58. Steering Committee on Federal Infrastructure Permitting and Review Process Improvement. "Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting." p. 36–42. May 2014. <http://www.permits.performance.gov/pm-implementation-plan-2014.pdf>. Accessed January 15, 2015.
59. Environmental Law Institute & The Nature Conservancy. "Watershed Approach Handbook: Improving Outcomes and Increasing Benefits Associated with Wetland and Stream Restoration and Protection Projects." September 2014. [http://www.eli.org/sites/default/files/eli-pubs/watershed-approach-handbook-improving-outcomes-and-increasing-benefits-associated-wetland-and-stream\\_0.pdf](http://www.eli.org/sites/default/files/eli-pubs/watershed-approach-handbook-improving-outcomes-and-increasing-benefits-associated-wetland-and-stream_0.pdf). Accessed March 9, 2015.
60. Presentation of Nicole Korfanta, PhD., Quadrennial Energy Review Infrastructure Siting Meeting. Cheyenne, WY. August 8, 2014. [http://www.energy.gov/sites/prod/files/2014/08/f18/l\\_korfanta\\_presentation\\_qer\\_cheyenne.pdf](http://www.energy.gov/sites/prod/files/2014/08/f18/l_korfanta_presentation_qer_cheyenne.pdf). Accessed February 28, 2015.
61. Department of the Interior, Fish and Wildlife Service. "Permits – HCPs in Development: NiSource Multi-Species Habitat Conservation Plan." June 2013. <http://www.fws.gov/midwest/Endangered/permits/hcp/nisource/2013NOA/NiSourceHCPfinalJune2013.html>. Accessed February 26, 2015.
62. Department of the Interior, Fish and Wildlife Service. "NiSource, Inc.; Record of Decision, Habitat Conservation Plan, Environmental Impact Statement, and Permit Issuance." 78 Fed. Reg. 68465. November 14, 2013. <http://www.gpo.gov/fdsys/pkg/FR-2013-11-14/pdf/2013-27230.pdf>. Accessed February 26, 2015.
63. Department of Transportation, Federal Highway Administration. "Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects." [http://environment.fhwa.dot.gov/ecological/eco\\_4.asp](http://environment.fhwa.dot.gov/ecological/eco_4.asp). Accessed February 11, 2015.

64. Department of the Interior. “A Strategy for Improving the Mitigation Policies and Practices of the Department of the Interior.” April 2014. [http://www.doi.gov/news/upload/Mitigation-Report-to-the-Secretary\\_FINAL\\_04\\_08\\_14.pdf](http://www.doi.gov/news/upload/Mitigation-Report-to-the-Secretary_FINAL_04_08_14.pdf). Accessed January 21, 2015.
65. Department of the Interior, Bureau of Land Management. “The BLM’s Landscape Approach for Managing Public Lands.” January 31, 2014. [http://www.blm.gov/wo/st/en/prog/more/Landscape\\_Approach.html](http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach.html). Accessed February 23, 2015.
66. Department of the Interior, Bureau of Land Management. “Dry Lake Solar Energy Zone (SEZ) Solar Regional Mitigation Planning Project.” April 4, 2014. [http://www.blm.gov/nv/st/en/fo/lvfo/blm\\_programs/energy/dry\\_lake\\_solar\\_energy.html](http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/energy/dry_lake_solar_energy.html). Accessed January 21, 2015.
67. Department of the Interior, Bureau of Land Management. “Dry Lake Solar Energy Zone (SEZ) Solar Regional Mitigation Planning Project.” April 4, 2014. [http://www.blm.gov/nv/st/en/fo/lvfo/blm\\_programs/energy/dry\\_lake\\_solar\\_energy.html](http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/energy/dry_lake_solar_energy.html). Accessed January 21, 2015.
68. Department of Transportation, Federal Highway Administration. “Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects.” [http://www.environment.fhwa.dot.gov/ecological/eco\\_index.asp](http://www.environment.fhwa.dot.gov/ecological/eco_index.asp). Accessed February 22, 2015.
69. Army Corps of Engineers and Environmental Protection Agency. “Compensatory Mitigation for Losses of Aquatic Resources.” 73 Fed. Reg. 19594. 40 C.F.R. § 230. April 10, 2008. <http://www.gpo.gov/fdsys/pkg/FR-2008-04-10/pdf/E8-6918.pdf#page=94>. Accessed February 26, 2015.
70. Western Governors’ Association. “Regional Transmission Expansion Planning: Transmission Siting Task Force.” [http://www.westgov.org/index.php?option=com\\_content&view=article&id=311&Itemid=81](http://www.westgov.org/index.php?option=com_content&view=article&id=311&Itemid=81). Accessed January 15, 2015.
71. Government Accountability Office. “Renewable Energy – Agencies Have Taken Steps Aimed at Improving the Permitting Process for Development on Federal Lands.” p. 29–30. January 18, 2013. <http://www.gao.gov/products/GAO-13-189>. Accessed February 10, 2015.
72. Executive Office of the President. “Report to the President – Rebuilding America’s Infrastructure: Cutting Timelines and Improving Outcomes for Federal Permitting and Review of Infrastructure Projects.” p. 11. May 2013. <http://www.whitehouse.gov/sites/default/files/omb/reports/report-to-the-president-rebuilding-americas-infrastructure.pdf>. Accessed January 15, 2015.
73. Government Printing Office. “Cooperative Action and Sharing of Resources by Secretaries of the Interior and Agriculture.” 43 U.S.C. § 1703. January 3, 2012. <http://www.gpo.gov/fdsys/pkg/USCODE-2011-title43/pdf/USCODE-2011-title43-chap35-subchapl-sec1703.pdf>. Accessed February 26, 2015.
74. Department of the Interior, Bureau of Land Management. “Pilot Project to Improve Federal Permit Coordination.” October 20, 2009. [http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/pilot\\_project.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/pilot_project.html). Accessed January 21, 2015.
75. Department of the Interior, Bureau of Land Management. “Pacific Northwest Regional Infrastructure Team.” [http://www.blm.gov/or/energy/files/PNWRIT\\_Factsheet.PDF](http://www.blm.gov/or/energy/files/PNWRIT_Factsheet.PDF). Accessed February 26, 2015.
76. Department of the Interior. “Memorandum of Understanding Between the Department of the Interior and the State of California on Renewable Energy.” October 12, 2009. [https://www.fws.gov/cno/pdf/Energy/Energy\\_2009-10-12\\_DOI\\_CA\\_MOU.pdf](https://www.fws.gov/cno/pdf/Energy/Energy_2009-10-12_DOI_CA_MOU.pdf). Accessed February 26, 2015.
77. Open Energy Information. “Bulk Transmission Regulations and Permitting.” <http://en.openei.org/wiki/RAPID/BulkTransmission>. Accessed January 21, 2015.
78. National Center for Interstate Compacts. “Transmission Line Siting Compact.” 2011. <http://www.csg.org/NCIC/TransmissionLineSitingCompact.aspx>. Accessed February 26, 2015.



79. Department of Agriculture, Forest Service. "Protocol Among the Members of the Western Governors' Association, the U.S. Department of the Interior, the U.S. Department of Agriculture, U.S. Department of Energy, and the Council on Environmental Quality and the Western Governors' Association Governing the Siting and Permitting of Interstate Transmission Lines in the Western United States." June 23, 2002. [http://www.fs.fed.us/specialuses/documents/interagency\\_wga\\_elec\\_trans\\_Protocol.pdf](http://www.fs.fed.us/specialuses/documents/interagency_wga_elec_trans_Protocol.pdf). Accessed January 21, 2015.
80. Organization of MISO States. "Protocol Among the Midwestern Governors Regarding the Permitting and Siting of Interstate Electric Transmission Lines In The Midwestern United States And Manitoba, Canada." 2005. <http://www.misostates.org/files/MGATransProtocolFinalDraft7-8.pdf>. Accessed January 21, 2015.
81. New England States Committee on Electricity. "New England States Form Interstate Transmission Siting Collaborative." June 23, 2011. [http://www.nescoe.com/uploads/Interstate\\_Siting\\_Collaborative.pdf](http://www.nescoe.com/uploads/Interstate_Siting_Collaborative.pdf). Accessed January 21, 2015.