



MEMORANDUM

June 7, 2017

To: House Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit
Attention: Andrew Okuyiga

From:

Subject: Questions regarding the report *Two Years Not Ten Years: Redesigning Infrastructure Approvals*

This memorandum responds to your request to CRS to answer three questions regarding the 2015 report *Two Years Not Ten Years: Redesigning Infrastructure Approvals*, prepared by Philip Howard for the organization Common Good (hereinafter the Howard report). The report states that a broad array of infrastructure projects often take ten years to approve, but could take two years to approve if changes are made to America’s “permitting system.” The author also assumes that delays attributable to permitting and environmental reviews result in costs created by “avoidable delays” that total over \$3.7 trillion (presumably over the six years after the report was released). As it is used in the Howard report, the term “environmental review” refers to the process of complying with the National Environmental Policy Act (NEPA).¹ It is not clear, however, what is meant by “permitting.” It appears to refer broadly to any approval issued by any agency—local, state, or federal, not necessarily a permit document in all instances.

To “better understand the validity” of several statements made in the Howard report, you asked CRS to answer the following:

- The report concludes, in part, that “[t]he main barrier to an infrastructure initiative is not financing, but an absurdly complex and lengthy permitting system.”² Does evidence show that environmental reviews and permitting presents a bigger challenge to the completion of infrastructure projects than the availability of funding?
- The report includes an assumption that “avoidable delay on major projects is six years.”³ This assumption figures prominently in “approximate costs of delay in rebuilding” calculated for each category of infrastructure projects. Is the assumption—that environmental reviews and permitting delay projects for six years—an accurate one?

¹ 42 U.S.C. §4321 *et seq.*

² The Howard report, p. 23.

³ The Howard report, p. 6.

- The report estimates that the costs attributable to “avoidable delays” of road and bridge construction projects amounts to \$427.8 billion over six years.⁴ Is the methodology used to calculate the cost reasonable?

To answer these questions, CRS analyzed the Howard report itself; reviewed relevant information in reports, studies, and other data *cited in* the Howard report; and reviewed background information of infrastructure projects identified in the Howard report as examples of projects delayed by permitting.

Before answering these questions, this memo will provide selected background information relevant to CRS’s responses. First, it provides an overview of federal agency roles in environmental reviews and regulatory approvals for infrastructure projects. Also, it discusses some of the challenges associated with identifying causes or costs of delay for the types of infrastructure projects discussed in the Howard report.

Background

Environmental reviews and “permitting”

The Howard report focuses on the effects of permitting and environmental reviews on infrastructure development. As a result, it may be useful to first clarify what that may involve. The Howard report explicitly states that an environmental review involves actions necessary to comply with NEPA. What constitutes “permitting” is more difficult to determine. It appears to refer to a potentially wide array of activities that may be required under any local, state, and federal laws, regulations or executive orders.

In part, NEPA requires federal agencies to identify and consider the environmental impacts of their actions before a final decision is made about the action. Regulations implementing NEPA were promulgated by the Council on Environmental Quality (CEQ).⁵ Those regulations identify actions subject to NEPA to include those over which a federal agency⁶ has some control or responsibility.⁷ Infrastructure projects discussed in the Howard report are generally undertaken or funded by private entities or non-federal agencies (e.g., state or municipal agencies). NEPA would generally apply only to projects undertaken or funded by a federal agency or a project that requires a specific federal agency approval (i.e., it involves a particular action that is otherwise prohibited under federal law, absent prior approval from a specific federal agency).

Each federal agency was required to adopt the CEQ regulations, supplement them as necessary to include procedures relevant to that agency’s authority, and ensure that those procedures implementing NEPA are integrated into the agency’s broader decisionmaking procedures.⁸ The resulting agency-specific NEPA review process is used to determine what level of environmental review is required (see below) and identify any potentially relevant issues or impacts that must be considered during that agency’s decisionmaking process. Procedures for determining the scope of the environmental review and the type of impacts analyzed during that review are delineated in both the CEQ and the individual agency NEPA regulations.

⁴ The Howard report, pp. 9-10.

⁵ See Council on Environmental Quality, “Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act,” in 40 C.F.R. Parts 1500-1508 (43 *Federal Register* 55990, November 28, 1978).

⁶ “Federal agencies” are defined at 40 C.F.R. §1508.12 to include all agencies of the federal government, but not Congress, the Judiciary, or the President.

⁷ 40 C.F.R. §1508.18.

⁸ See directives included in 40 C.F.R. §§1505.1 and 1507.3.

NEPA requires federal agencies to provide a detailed environmental impact statement (EIS) for “major federal actions significantly affecting the quality of the human environment.”⁹ If the agency is uncertain whether a proposal would have significant impacts, it may prepare an environmental assessment (EA) to determine if an EIS is necessary, or if a finding of no significant impact (FONSI) may be issued. Federal agencies may also identify categories of actions they are authorized to undertake that have been found to have no significant effect on the environment. Such actions are categorically excluded from the need to prepare an EIS or EA and are, hence, broadly referred to as “categorical exclusions” (CEs or CATEXs).¹⁰

As a procedural statute, NEPA is intended to inform a federal agency’s decision-making process. It obligates federal agencies to consider the environmental impacts of their actions, among others they must consider, but does not require agencies to elevate environmental concerns above other factors (e.g., costs, economic benefits) in the overall federal decision-making process. If the adverse environmental effects of a proposed action are adequately identified and evaluated, an agency is not constrained by NEPA from deciding that other project benefits outweigh the environmental costs and moving forward with the action.

Most agencies have structured their NEPA process as an umbrella compliance process. That is, within the framework of identifying any adverse impacts to cultural, natural, or environmental resources, agencies identify any additional state, tribal, or federal environmental requirements that may be applicable as a result of those impacts. Rather than NEPA itself, it is under those additional requirements that some permit or other authorization may be required.

In contrast to NEPA, “other” requirements may dictate or somehow affect the outcome of a project decision. For example, other federal laws may require the project sponsor to select a project alternative that will have the least impact to a protected resource (e.g., surface water or groundwater), require certain mitigation measures to limit a project’s impacts, or require that certain activities take place in accordance with certain criteria (e.g., pursuant to an outside agency permit or approval).

Whether or which additional requirements will apply to an infrastructure project will likely depend on the type of project and the resources its construction and operation may affect. A number of construction-related activities may be prohibited under federal law, without prior approval from a specific federal agency. Such actions require federal agency approval for various reasons. Generally, Congress has authorized a specific federal agency to approve actions that, if not implemented in accordance with certain conditions, may pose some threat to human health or safety or to certain cultural, natural, or environmental resources. Required authorizations may come in various forms, such as a license or permit that specifies conditions an applicant must meet to ensure compliance with applicable law. For example, under Section 404 of the Clean Water Act (CWA), a permit from the U.S. Army Corps of Engineers (Corps) may be required for any construction activity that would result in the discharge of dredged or fill material into navigable waters of the United States, including wetlands.

Also, a number of federal laws establish baseline regulatory standards that are implemented by and enforced by delegated states. For example, under Section 402 of the CWA, delegated states, tribes, and territories administer the National Pollutant Discharge Elimination System (NPDES). An NPDES permit is required for the discharge of pollutants through a specific point source into a water of the United States. Such permits are subject to federal regulatory standards, but are most often issued by a delegated state.

Apart from referring to environmental reviews conducted under NEPA, the Howard report does not identify the federal laws or regulations under which “permits” are issued. The report also appears to refer

⁹ See NEPA §102(2)(C); 42 U.S.C. §4332(2)(C). Of note, CEQ defines *federal actions* subject to NEPA to include actions that require federal agency approvals via a permit or other regulatory approval (see 40 C.F.R. §1508.18).

¹⁰ Each agency’s regulations implementing NEPA are required to provide for “extraordinary circumstances” in which a normally excluded action may have significant environmental effect (see 40 C.F.R. § 1508.4).

to permits as any authorization issued under local, state, or federal law. Although it may not be the case for all categories of infrastructure projects discussed in the Howard report, requirements implemented by local and state agencies generally apply more often than requirements implemented by federal agencies.

In the past, Congress has primarily shown interest in expediting federal agency approvals (funding approvals and regulatory approvals). As discussed in the following section, the Howard report discusses a wide array of infrastructure projects. Many would generally be undertaken by a non-federal entity (e.g., a private individual or company or a local or state agency) and, hence, would generally be subject to NEPA only if they receive federal program funding or if they must use or cross federal land.

Issues with Infrastructure Projects

The Howard report discusses issues associated with permits and environmental reviews associated with projects that are broadly categorized as related to modernizing “infrastructure.” As suggested by the title, the Howard report broadly states that prospective review of infrastructure projects should be completed in two years, but that large projects are routinely approved in ten. This statement is used to refer to a diverse array of projects in categories identified as—

- **Electricity transmission.** Described as transmission and distribution infrastructure.
- **Power generation.** This appears to include any project related to the construction of new or modifications to existing plants powered by coal, natural gas, solar energy, wind energy, nuclear energy, or water (hydroelectric plants).
- **Inland waterways.** This appears to refer specifically to civil works projects undertaken and funded directly by the U.S. Army Corps of Engineers (the Corps).
- **Roads and bridges.** This appears to refer to projects eligible to receive federal funding from programs administered by the Department of Transportation’s (DOT) Federal Highway Administration (FHWA), as well as projects entirely funded by state or municipal agencies.
- **Rail.** This appears to refer to freight rail projects, rather than intercity or public transportation rail projects.
- **Water.** This appears to refer to projects that may supply drinking water and/or to wastewater treatment facilities.

For each infrastructure *category* listed above, a potentially wide array of projects or activities may be undertaken to “modernize infrastructure,” as that term is used in the Howard report. For example, a “project” could involve the construction of entirely new facilities or systems or it may involve actions necessary to rebuild, repair, replace, maintain, or otherwise improve existing facilities or systems. Even within the same category of infrastructure projects, factors that affect the project development process will be unique to the individual project. For example, with respect to power generation, the factors that affect the development of a project undertaken by a private entity to modernize a coal-fired power plant will differ from those associated with the construction of a new solar-powered plant. With respect to road and bridge projects, the factors that affect a state agency’s decision to construct a new highway would be different than those related to a local agency’s decision to repair or reconstruct an existing bridge. The federal requirements likely applicable to the construction of a major, new civil works project, undertaken by the Corps, will be substantially different than those applicable to a facility upgrade at a municipal wastewater treatment facility, undertaken by a local agency.

The wide range of projects identified in the Howard report as related to “infrastructure” does not allow for an “apples to apples” comparison of the issues likely to affect their delivery. Further, the variation among them means that the types of regulatory requirements applicable to each would likely vary substantially.

CRS identified a number of factors that make it difficult to support statements and assumptions in the Howard report related to the effect that permitting and environmental review may have on infrastructure projects. Those factors include, but are not limited to the following:

- **Lack of data.** There is no centralized source of project development data for the categories of infrastructure projects discussed in the Howard report. Project sponsors (local, state, or federal agencies or private entities) generally do not track project development time from planning to construction. States and local governments also do not attempt to isolate elements of the NEPA review or regulatory approval process, which are generally integrated with aspects of preliminary project planning, design, or engineering. The Howard report notes that there is little cumulative data, but that there is “ample anecdotal evidence of actual years of delay.”¹¹ However, limited anecdotal evidence is provided in the report.
- **What constitutes a “delay” can be difficult to identify and/or measure.** There is no standard measure for determining when a category of projects is completed “quickly” or would be considered “delayed.” Broadly speaking, no standard baseline project completion timetable is available for comparison. The fact that a given project took years to move from initiation (i.e., the identification of a problem that needed to be solved) to construction does not mean that it was delayed. Large, complex, expensive projects routinely start, stop and re-start for a variety of reasons (see the discussion of state and local issues, below).
- **Identifying “permitting” as a cause of delay does not provide the information necessary to identify a role for Congress.** Identifying permitting, with no additional information, does not provide sufficient detail to inform Congress on whether or the degree to which there is a federal role in project delays. Most categories of projects identified in the Howard report involve no federal action subject to review under NEPA. Permitting appears to refer to any category of approval issued under any local, state, or federal requirement.
- **The influence of state and local issues on project delivery is not recognized.** Depending on the project, local and state issues often have the most influence on whether a given project moves forward relatively quickly or takes longer than anticipated. Those issues include the project’s level of priority among others proposed in the state; changes in funding availability (issues with funding availability will also vary depending on whether the project’s funding source is a private or public entity); and local controversy or opposition to the project (which may or may not be connected to environmental issues).

CRS Response to Questions

As noted above, the term “permitting” is not defined in the Howard report. For the purposes of this memorandum, CRS interprets the term to mean the issuance of some permit, license or other form of regulatory approval, in accordance with applicable local, state, and/or federal requirements, by an authorized local, state, and/or federal agency.

¹¹ The Howard report, p. 6.

Question 1. The report concludes, in part, that “[t]he main barrier to an infrastructure initiative is not financing, but an absurdly complex and lengthy permitting system.”¹² Does evidence show that permitting presents a bigger challenge to the completion of infrastructure projects than the availability of funding?

No evidence is provided in the Howard report to support the conclusion that permitting has a *greater* impact than funding on the infrastructure project categories identified in that report. Instead, the other reports and studies *cited in* the Howard report contradict its conclusion that permitting, rather than funding, presents a greater challenge to completing the infrastructure projects.

The Howard report cites data from other existing reports prepared by federal agencies, such as DOT’s Federal Highway Administration (FHWA) or the Department of Energy’s Energy Information Administration; and organizations, such as the American Society of Civil Engineers (ASCE), the Texas A&M Transportation Institute, and the National Electrical Manufacturers Association, among others. Following are several reports cited in the Howard report:

- ASCE’s *2013 Report Card for America’s Infrastructure*. This infrastructure report card was part of a series of economic reports broadly titled “Failure to Act:...” In 2016, Report Card was updated and titled “Failure to Act: Closing the Infrastructure Investment Gap for America’s Economic Future.”¹³
- *Buried No Longer: Confronting America’s Water Infrastructure Challenge*, prepared by America Water Works Association, undated.¹⁴
- *Cost of Project Delays, An Estimate of Foregone Benefits and Other Costs Related to Schedule Delays of Inland Waterway Projects*, prepared for the National Waterways Foundation by HDR: Decision Economics, June 2012.¹⁵
- The Department of the Treasury and Council of Economic Advisers, *A New Economic Analysis of Infrastructure Investment*, March 2012.¹⁶
- *Getting America’s Freight Back on the Move: A Plan for Investing in Our Freight Infrastructure*, Center for American Progress, August 2012.¹⁷

These reports discuss a range of issues related to the need for infrastructure improvement. A common, if not the primary, issue identified in each report relates to funding. The reports highlight funding deficiencies or present evidence of the economic, societal or other costs that may arise as a result of continued underinvestment. For example, the purpose of the ASCE *2013 Infrastructure Report Card* is to provide evidence to decisionmakers that the costs of investing in various infrastructure improvements are actually offset by cost savings associated with implementing those improvements. CRS’s review found that no outside report or study cited in the Howard report identified permitting, generally, or compliance with specific local, state, or federal requirements, in particular, as a primary barrier to completing various infrastructure projects.

¹² The Howard report, p. 23.

¹³ The most recent and past versions of the ASCE *Infrastructure Report Card* are available at <https://www.infrastructurereportcard.org/>.

¹⁴ Available at <http://www.awwa.org/Portals/0/files/legreg/documents/BuriedNoLonger.pdf>.

¹⁵ Available at <http://www.nationalwaterwaysfoundation.org/study/HDRstudy.pdf>.

¹⁶ Available at <http://www.treasury.gov/resource-center/economic-policy/Documents/20120323InfrastructureReport.pdf>.

¹⁷ Available at <http://www.americanprogress.org/issues/technology/report/2012/08/14/11994/getting-americas-freight-back-on-the-move/>.

Of potential relevance to Members of Congress interested in expediting infrastructure projects, two additional factors may be useful to recognize. First, given the diverse array of infrastructure projects identified in the Howard report, it cannot be stated with any degree of certainty that most or even a substantial percentage of them would generally be subject to a “complex and lengthy permitting system” (i.e., a diverse array of regulatory requirements). At least, they are not necessarily subject to an array of regulatory approvals issued from federal agencies.¹⁸ Further, as noted, most projects identified in the report generally do not involve “federal actions” subject to review under NEPA. Second, identifying “money and permits” as the only components associated with “modernizing America’s aging infrastructure” ignores the complex array of additional project-specific factors that have been identified in other studies and reports (including those cited in the Howard report) as factors in project development. (See the discussion of avoidable delay, in the response to Question 2, below.)

Question 2. The report includes an assumption that “avoidable delay on major projects is six years.”¹⁹ This assumption figures prominently in “approximate costs of delay in rebuilding” calculated for each category of infrastructure project. Is the assumption—that environmental reviews and permitting delay projects for six years—an accurate one?

It is not clear how the assumption of a six-year delay was determined. The report notes that there is little cumulative data associated with projects that were “delayed,” but that there is “ample anecdotal evidence of actual years of delay” for different types of infrastructure projects.²⁰ However, no such anecdotal evidence is provided.

With respect to the potential for “avoidable delays,” no evidence is provided to support the assertion that large U.S. projects take a decade or longer “to permit.” Why the various stages of project development take the time they do would depend on factors specific to each project. The planning and the design and engineering phases of development can take years for large and/or complex construction projects. It may also be assumed that the larger or more complex the project the greater the chance that the project would have multiple impacts on people or communities or cultural, natural, or environmental resources. To control or mitigate those impacts, the project sponsor may be required to meet a number of requirements established under local, state, or federal law. While compliance with these requirements takes time, it is difficult to determine whether they routinely delay projects.

CRS reviewed the history and details of projects explicitly identified in the report which were, presumably, examples of projects delayed by permitting. That review found no evidence to support an assertion that the projects identified were delayed by federal regulatory requirements (permitting) or environmental reviews. For example, the Howard report refers to a desalination plant in San Diego that was delayed by multiple lawsuits.²¹ However, press sources indicate that lawsuits were brought by local groups opposed to the project under state, not federal, law.²² Further, like many of the project categories

¹⁸ A number of federal laws establish baseline regulatory standards that are implemented by and enforced by delegated states. For example, most permits issued under the Clean Air Act or Clean Water Act are issued by state agencies. Such permits are subject to federal regulatory standards, but are most often issued by a delegated state.

¹⁹ The Howard report, p. 6.

²⁰ The Howard report, p. 6.

²¹ While not explicitly identified in the report, CRS assumes it is referring to the Carlsbad Desalination Plant. For information see <http://www.carlsbaddesal.com/>.

²² See the Los Angeles Times, “Backers of desalination hope Carlsbad plant will disarm critics,” June 4, 2015 available at <http://www.latimes.com/local/california/la-me-carlsbad-desalination-20150604-story.html>.

identified in the Howard report, a desalination plant is not the type of project that involves a federal action subject to NEPA review.

Question 3. The report estimates that the costs attributable to “avoidable delays” of road and bridge construction projects amounts to \$427.8 billion over six years.²³ Is the methodology used to calculate the cost reasonable?

The \$427.8 billion estimate related to road and bridge projects is reached after identifying certain economic costs associated with delaying construction, then multiplying those costs by certain factors attributable to permitting-related delays. The Howard report provides no evidence that either the costs cited or the multipliers accurately gauge costs of delay that can be tied to regulatory approvals and/or the NEPA process.

For each infrastructure category, the Howard report uses “studies by government agencies and industry groups” to identify “costs attributable to continued inefficiencies and environmental damage” resulting from delaying project construction, as well as inflationary costs associated with delays. The “approximate costs of delay in rebuilding roads and bridges” are tied to:

- **Continued traffic congestion.** Estimated by identifying the annual costs to motorists from wasted time and fuel and the environmental losses tied to greenhouse gas emissions from fuel wasted, then multiplying those costs by 45% (the proportion of road and bridge projects attributable to “recurrent” congestion sources), then multiplying that resulting percentage by six (the estimated number of years of delay).
- **Construction costs.** Estimated by identifying an estimated annual investment to “improve American roads to an acceptable level” and “repair all needed bridges in the U.S.” multiplied by inflation-related factors.

The Howard report provides no evidence that the costs identified or multipliers used would provide an accurate estimate of costs directly attributable to permitting-related delays. As noted in the response to Question 2, CRS determined that there is no evidence that infrastructure projects or some proportion of most projects are delayed by six years. Accordingly, there is no basis for assuming that multiplying *any* cost by six would result in an accurate estimate of costs related to not building road or bridge projects. CRS identified additional issues with the cost estimates in the Howard report.

Congestion-related costs

To determine congestion-related costs, the Howard report relies primarily on data included in ASCE’s *2013 Infrastructure Report Card* and the 2012 Department of the Treasury report *A New Economic Analysis of Infrastructure Investment*. Both reports identify costs associated with continued underinvestment in infrastructure. None of those reports suggested that, given the availability of the funds, projects to address traffic congestion could not be undertaken in a timely way. More specifically, the reports cited do not suggest that projects necessary to address congestion would be delayed by local, state, or federal regulatory approvals. As a result, CRS cannot assume that economic, societal, or environmental costs of congestion, tied to underinvestment, could be tied to permitting and environmental reviews.

The Howard report does not attempt to tie all costs of noninvestment to permitting. It cites a 2010 FHWA study that cites “recurring congestion” as the cause of 45% of highway congestion. The Howard report then assumes that 45% of congestion-related costs can be attributed to road and bridge projects delayed

²³ Howard report, pp. 9-10

by permits or environmental reviews. No evidence, however, supports that assumption. The 2010 FHWA report identifies a number of operational and management strategies to mitigate congestion. For recurring congestion, it suggests a number of strategies including roadway improvements (e.g., widening and bottleneck removal), operational improvements, and ramp management, to name a few. Other than road widening, implementing such strategies could involve activities that are not subject to any regulatory approval and/or to limited environmental review. That is, no evidence is provided that suggests the 45% multiplier adequately reflects the percentage of road and bridge projects potentially subject to various permitting or environmental review requirements.

Building costs

As noted, the Howard report identifies an estimated “increase in rebuilding costs from six-year delay” that involves the following formula:

$$[\$385 \text{ billion (roads)} + \$121 \text{ billion (bridges)}] \times 30 \text{ percent} = \$151.8 \text{ billion}^{24}$$

The amount for roads was determined by taking a proportion of the annual cost of investment necessary to improve American roads to an acceptable level—using the American Association of State Highway and Transportation Officials’ (AASHTO) estimate of annual investment needed until 2020. To get the estimated amount for “bridges,” the Howard report estimated the cost “to repair all needed bridges in the US,” taken from the 2013 ASCE *Infrastructure Report Card*. To determine the estimated increased cost attributable to permitting related delays, the Howard report multiplied the total, combined costs of roads and bridges by 30%, based on the following assumption:

Project developers conservatively budget three percent inflation in “hard” construction costs and ten percent added overhead cost for each year of delay. As a rule of thumb, construction represents 70 percent of project costs and overhead 30 percent. Thus, we assume here that the total increase in direct cost from delay is five percent per year (70 percent times three percent = 2.1 percent, plus 30 percent times ten percent = three percent, for a total delay cost of 5.1 percent per year).²⁵

CRS found a number of problems with this formula that were similar to those associated with the congestion-related costs. No evidence is provided to support the assumption that the costs or the multiplier can be tied to actions that would be taken if not for delays tied to permitting or environmental reviews. The AASHTO estimate is of annual funding needed to address all road and bridge projects. It does not necessarily mean that all such projects could, plausibly, be undertaken in a year. That is, it is an estimate of needed funds, not an estimate of resources and labor that would actually be available to implement those projects every year. As a result, it cannot be assumed that, absent permitting and environmental review, all projects would move forward in that year.

²⁴ The Howard report, p. 10.

²⁵ The Howard report, p. 6.