AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

S. HRG. 115–23

INFRASTRUCTURE PROJECT STREAMLINING AND EFFICIENCY: ACHIEVING FASTER, BETTER, AND CHEAPER RESULTS

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

MAY 3, 2017

Printed for the use of the Committee on Environment and Public Works

Available via the World Wide Web: http://www.fdsys.gov

U.S. GOVERNMENT PUBLISHING OFFICE

25–783 PDF WASHINGTON : 2017

For sale by the Superintendent of Documents, U.S. Government Publishing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ONE HUNDRED FIFTEENTH CONGRESS
FIRST SESSION

JOHN BARRASSO, Wyoming, *Chairman*

JAMES M. INHOFE, Oklahoma
SHELLEY MOORE CAPITO, West Virginia
JOHN BOOZMAN, Arkansas
ROGER WICKER, Mississippi
DEB FISCHER, Nebraska
JERRY MORAN, Kansas
MIKE ROUNDS, South Dakota
JONI ERNST, Iowa
DAN SULLIVAN, Alaska
RICHARD SHELBY, Alabama

THOMAS R. CARPER, Delaware
BENJAMIN L. CARDIN, Maryland
BERNARD SANDERS, Vermont
SHELDON WHITEHOUSE, Rhode Island
JEFF MERKLEY, Oregon
KIRSTEN GILLIBRAND, New York
CORY A. BOOKER, New Jersey
EDWARD J. MARKEY, Massachusetts
TAMMY DUCKWORTH, Illinois
KAMALA HARRIS, California

RICHARD M. RUSSELL, *Majority Staff Director*
GABRIELLE BATKIN, *Minority Staff Director*

C O N T E N T S

Page

MAY 3, 2017

OPENING STATEMENTS

Barrasso, Hon. John, U.S. Senator from the State of Wyoming 1
Carper, Hon. Thomas R., U.S. Senator from the State of Delaware 2

WITNESSES

Panos, William T. "Bill," Director, Wyoming Department of Transportation 5
Prepared statement 7
Responses to additional questions from Senator Carper 16
Pilconis, Leah F., Consultant on Environmental Law & Policy, Associated General Contractors of America 19
Prepared statement 21
Responses to additional questions from Senator Carper 58
Porcari, John, President of U.S. Advisory Services, WSP Parsons Brinckerhoff 66
Prepared statement 69
Responses to additional questions from:
Senator Carper 78
Senator Duckworth 82
Senator Markey 82

ADDITIONAL MATERIAL

Article: Can You Really Make Money With Vending Machines? by Suzanne Kearns, http://quickbooks.intuit.com 162
40 Proposed U.S. Transportation and Water Infrastructure Projects of Major Economic Significance, a report prepared by AECOM for the Build America Investment Initiative 164
Memorandum of Understanding between the City of Warwick and the Rhode Island Airport Corporation, May 2012 267

INFRASTRUCTURE PROJECT STREAMLINING AND EFFICIENCY: ACHIEVING FASTER, BETTER, AND CHEAPER RESULTS

WEDNESDAY, MAY 3, 2017

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The Committee met, pursuant to notice, at 10:04 a.m. in room 406, Dirksen Senate Office Building, Hon. John Barrasso (Chairman of the Committee) presiding.

Present: Senators Barrasso, Carper, Inhofe, Capito, Boozman, Wicker, Fischer, Moran, Rounds, Ernst, Sullivan, Cardin, Whitehouse, Gillibrand, Booker, Duckworth, and Harris.

OPENING STATEMENT OF HON. JOHN BARRASSO, U.S. SENATOR FROM THE STATE OF WYOMING

Senator BARRASSO. Good morning. I call this hearing to order.

Infrastructure is a shared bipartisan priority of all of the members of this Committee. It is also a major priority for the President. The largest hurdles to starting roadwork is getting the needed Government approvals. The costs and delays of regulatory red tape can be staggering.

Washington needs to be smarter about these rules and more aware of the effects that they have in communities. We need to find ways to get projects started faster, build roads better, and make costs cheaper.

Simplifying these processes will allow for construction companies to start hiring and for workers to begin building faster; it is a common sense way to boost our economy and upgrade our public works. If we find ways to streamline review processes, mindful of environmental protection and other public interests, then we can initiate projects more promptly.

More efficient and streamlined regulation can enable transportation departments to focus on efforts to improve safety and personal mobility, and facilitate economic growth. Less time and money and staff effort would need to be dedicated to regulatory compliance.

When we find opportunities to streamline regulation, it enables the State Department of Transportation or other regulated entities to focus more closely on delivering transportation projects and programs and do a better job on them.

Now, there are many reasons to provide more relief to State Departments of Transportation. For example, I have concerns with

subjecting rural States to the same rules as more densely populated States. The idea that we would need to have Wyoming or Alaska, South Dakota, Oklahoma do transportation traffic congestion studies on roads that are infrequently traveled is a waste of valuable time and taxpayer resources. Most importantly, these requirements meant for more urban areas impact a rural State's ability to complete projects.

I also have concerns about barriers that exist at the Federal level that might interfere with applications of technologies that can accelerate project delivery at lower costs. Modifying these requirements to allow technological innovations that can save valuable taxpayer money and speed project construction is just common sense.

We also should remember that in most cases regulation in the highway program by the U.S. Department of Transportation is regulation of State governments. A citizen could ask whether it is really necessary to have one government regulate another government. State Departments of Transportation are public sector entities; they are concerned with safety and environmental protection, and they deserve respect.

The Wyoming Department of Transportation Director Panos' diverse experience makes his participation today particularly helpful to the Committee. He has served as an environmental regulator, as a construction program executive, and now as our State Transportation Agency CEO. He has seen these issues from many perspectives, and as the Director's testimony notes, it is important to move the projects associated with additional funding through the review process promptly, responsibly, and get them built. I agree, and I think it can be done responsibly.

So I urge my colleagues to work with me in a bipartisan way to find these solutions.

With that, I would now turn to the Ranking Member for his testimony.

Senator Carper.

OPENING STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM THE STATE OF DELAWARE

Senator CARPER. Thanks, Mr. Chairman.

Welcome to our witnesses, at least one who has been before us. A couple have been before us before, and one of them I was just telling about, Senator Inhofe, the work that has been done on the omnibus budget bill involving the Diesel Emission Reduction Act, and instead of seeing it eliminated or greatly diminished, it is actually going to be increased a little bit. And I know that is something you and George Voinovich and I have worked on a lot, and we appreciate your help as well, Leah.

I am glad to be here with all of you today. This hearing's title asks whether we are able to build transportation projects faster, better, and cheaper, and that has a nice ring to it. I certainly agree with the intent. I suspect we all do. But I want to add maybe one other adjective to that list, and it is smarter.

I am sure we all remember stuff that our parents used to say to us growing up. I certainly do. My dad always wondered if any of it was actually getting through. But among the things he was al-

ways saying to my sister and me, when we would do our chores and not do them well, he would say, if a job is worth doing, it is worth doing well. That is what he would say. If a job is worth doing, it is worth doing well. And he said that a lot. We must not have done our chores so well.

But out of that I took the idea, I take the idea that everything I do I can do better. I think the same is true of all of us. That includes all Federal programs. We can do them all better, including the ones we have partnerships with the States.

The other thing my dad used to say a lot to my sister and me, he used to say, just use some common sense. He said that a lot too, not so nicely. We must not have had any common sense. But he said it a whole lot.

And I am thinking of those two things—if it isn't perfect, make it better, and just use some common sense—today as we approach this hearing.

When it comes to streamlining legislation, being smarter also means understanding how things are working now and allowing the existing streamlining measures to be well on their way to implementation before we enact new ones that are likely to delay the benefits of earlier streamlining measures that are still being implemented.

It is a little bit like you are moving into a house. Maybe it is a fixer-upper. It needs a lot of work, and the house needs to be painted. And you have the option, you can move your furniture in before painting, or you can wait, paint the house, and then move in the furniture.

It is the same kind of situation. I just want us to keep that in mind as we approach today's hearing.

But as we know one tool designed to help public agencies make smarter decisions is the National Environmental Policy Act, NEPA. When it works as intended, NEPA ensures that Federal decision-makers are better informed through project analysis and community engagement. When the NEPA process is well coordinated, it can improve project outcomes; it can reduce costs and identify conflicts early enough to resolve them without delay.

Unfortunately, there are times when coordination isn't done well, and projects are delayed without good reason. That is why I supported the 22 streamlining provisions that passed in MAP–21 in 2012. And again I turned to Jim Inhofe. I know he did a lot of work, and our staffs did a lot of work on that. Eighteen additional streamlining provisions were included in the FAST Act in 2015. Again, kudos to all who were involved.

But I believe that it is smart to improve coordination between agencies. I think it is smart to avoid duplication and to focus agency reviews and public input on the projects with the most significant impacts.

I continue to believe that measures intended in the past two bills have real promise to improve timelines and outcomes. But we will only see those benefits if we give them an opportunity to be fully implemented by USDOT and actively used by our States, native American tribes, and community partners.

For that reason, one of our Committee's top priorities right now should be, I think, oversight to make sure that the existing stream-

lining measures that we have adopted in the last 5 years are being fully implemented and effectively implemented as a good part of our job.

Moreover, adopting new measures at this juncture could well perform a disservice, if we are not careful, to project delivery by delaying implementation of the new authorities for MAP–21 and FAST Act. I don't think we want to do that, so we have to be smart about it.

A new report released in March by USDOT's Office of Inspector General states that there are real risks in enacting new streamlining measures before the old ones are implemented. The IG report says that streamlining measures Congress adopted in the FAST Act may have perversely delayed the benefits from the MAP–21 streamlining provisions, which had to be revised in order to incorporate the FAST Act changes.

In other words, we are already seeing some counterproductive effects of adopting additional streamlining measures. We must act carefully to avoid doing so yet again. In my father's words, let's just use some common sense.

Finally, we also need to be clear on two critical points when it comes to transportation project delivery and delays. First, 90 percent of highway projects are already categorically excluded from extensive environmental analysis under NEPA. I was surprised to learn that. The environmental reviews for those projects are completed in a month, on average. About 4 percent of the remaining highway projects face the most extensive reviews, and they are large, complicated projects; they are not our vast majority of highway projects, though.

Second, although environmental permits and reviews take a lion's share of the blame for delays, multiple studies and reports have demonstrated that project delays more often result from causes that are unrelated to environmental laws. Last year, a report from the Treasury Department found a lack of public funding is by far the most common factor hindering the completion of transportation projects. We will not solve our underlying funding shortage by cutting environmental reviews alone.

The best way to ensure a timely completion of environmental permits and reviews is by bringing all the agencies together to coordinate early. However, funding constraints at the Federal permitting agencies, such as EPA and U.S. Fish and Wildlife Service, do not enable them to engage early in all projects. Let's keep that in mind. Unfortunately, the fiscal year 2018 cuts proposed to EPA and the Department of Interior budgets would only exacerbate permitting delays if we adopt them.

I will also be open to looking for ways to make the government more effectively, to improve transparency and accountability, and avoid unnecessary duplication or delays. Completing projects more quickly brings the benefits of that project to a community more quickly, whether it is less time wasted in traffic, fewer fatalities, or new access to jobs, housing, and other destinations.

We also know that projects can have real impacts on communities and the environment. Congress must ensure that any revisions to the way we review projects are going to result in smarter

processes and better outcomes that will not impede the progress we have made to date.

That it is. All right, thank you all for being here. It is great to be with us. Let's have a wonderful hearing. Thank you.

Thanks, Mr. Chairman.

Senator BARRASSO. Thank you very much, Senator Carper.

We will now hear from our witnesses, and we will start with Bill Panos, who is the Director of the Wyoming Department of Transportation.

Welcome back to the Committee. Look forward to your testimony.

STATEMENT OF WILLIAM T. "BILL" PANOS, DIRECTOR, WYOMING DEPARTMENT OF TRANSPORTATION

Mr. PANOS. Thank you, Mr. Chairman.

Chairman Barrasso, Senator Carper, members of the Committee, I am Bill Panos, the Director and Chief Executive Officer of the Wyoming Department of Transportation.

Today, infrastructure investment is on the national agenda. Yet, delivering the best possible transportation infrastructure requires more than money. We also must use each dollar efficiently.

There are ways to reform Federal requirements so that transportation dollars can be put to work more efficiently while protecting the environment and other public interests.

We can improve the project review process. We can also streamline other regulations. When regulation is not streamlined, personnel effort and scarce dollars have to be unnecessarily redirected from executing projects to regulatory compliance. That is a suboptimal result.

More specifically, we can improve scheduling for review of projects requiring an EIS. Today, Federal agencies can obtain more time for review by not concurring in the lead agency's proposed schedule. Congress should assume that the lead agency will give fair consideration to the scheduling views of other agencies, and let the lead agency set the schedule.

Turning to smaller infrastructure projects, they generally receive categorical exclusion treatment for NEPA review. This expedited approach helps States use funds more promptly. We would welcome additions to the classes of projects receiving categorical exclusion treatment.

Let me add that smaller projects can also be delayed by requirements other than NEPA review. For example, a State DOT may have to wait months for a determination that no 404 permits are needed for a project within an existing operational right-of-way. This is frustrating, especially when there is no water in the project area. We suggest that for cases like that a time limit should be placed on responses from other agencies.

Turning to other regulation, rural States should be excused from requirements intended to address urban traffic congestion. For example, in the proposed rulemaking notice for the System Performance and Congestion Management Rule, the first reason provided by FHWA for the proposal was congestion reduction. Rural States do not experience anything resembling the congestion in heavily populated areas.

However, under that rule, States must develop computerized applications and report on millions of traffic data points. For example, Wyoming would report to USDOT the number of vehicles on the road halfway between Cody and Casper at 10 a.m. on a Monday. USDOT does not need this information from States like Wyoming. But it will take time and money for us to comply. That will detract from our efforts to advance basic transportation improvements, including those intended for safety.

We also have concerns with stewardship agreements between FHWA and State DOTs. These agreements, once brief, now routinely exceed 50 pages. Most texts in these agreements is standardized, and the subject matter extends beyond the provision that give rise to these agreements. For example, a State assumes DOT responsibilities for project design, plan, specifications, and other similar matters. Yet, these agreements require advanced notice or approval of changes in many State DOT practices. This includes those for which the State supposedly assumed USDOT responsibilities. Statute does not require these advanced approvals. Yet, today States have to accept these terms in stewardship agreements.

Instead, requirements for these agreements should be established through rulemaking. USDOT should have to include in a proposed rulemaking notice justification for requirements that are not in statute. The provisions that survive the rulemaking process would then supersede the current provisions.

Before closing, I will briefly comment on infrastructure investment. The nation benefits from Federal investment in surface transportation infrastructure in rural States like ours. Yet, public-private partnerships and other approaches that depend on a positive revenue stream from a surface transportation project are not a solution for rural States.

Projects in rural States are unlikely to be able to generate revenues that attract investors; however, using the formula-based FAST Act approach to distributing funds would ensure that all States participate in the transportation portion of an infrastructure initiative. It would also help deliver the benefits of any increase in infrastructure investment to the public promptly.

In conclusion, as the nation considers increasing transportation infrastructure investment, our statement offers ideas for streamlining transportation project and program regulation while continuing to protect public interests. The public won't want additional investments in transportation to be slowed down by unproductive requirements, and we hope our suggestions are timely and helpful to the Committee.

Thanks for your consideration and for the opportunity to testify.

[The prepared statement of Mr. Panos follows:]

Statement of the Transportation Departments of
Wyoming, Idaho, Montana, North Dakota, and South Dakota
before the
Committee on Environment and Public Works, United States Senate
presented by
William T. Panos,
Director, Wyoming Department of Transportation
regarding
Streamlining Regulatory Processes and Project Delivery
May 3, 2017

Chairman Barrasso, Ranking Member Carper, and Members of the Committee:

I am Bill Panos, Director and Chief Executive Officer of the Wyoming Department of Transportation. I appear today to present a statement on behalf of my own department and also for the transportation departments of Idaho, Montana, North Dakota, and South Dakota.

I commend the Committee for holding this hearing on streamlining regulatory processes and increasing the efficiency of project delivery.

As we meet today, the President has put improving the nation's infrastructure on the policy agenda, and there is wide interest in Congress in providing funding for infrastructure.

Yet, the level of funds available to invest is only part of the equation in the effort to deliver the best possible transportation program to the public. It is also important for the transportation program to deliver as much benefit as possible with each dollar.

That brings us to the question we will address today:

> Can we reform Federal requirements so that State DOTs and others can put transportation dollars to work more effectively and efficiently – while protecting the environment and other public interests?

The answer is "yes." We can and we should, in at least two ways.

First, I'll touch on opportunities for improvement in the project review and delivery process.

Second, I'll note other opportunities to reduce regulation. Unneeded regulation adversely impacts a State DOT's ability to deliver its program, as management effort is significantly redirected from executing projects and programs to achieving regulatory compliance.

Let me turn to specifics.

Expediting the Review Process for Projects Large and Small

Larger Projects. There has been some progress over time in improving the environmental review process for projects. Today, for projects for which an Environmental Impact Statement (EIS) is prepared, under 23 USC 139 the lead agency establishes a plan for review of projects including a schedule. Similarly, under 23 USC 139 and 168, Congress has established the concept of developing a single EIS for a project even if multiple agencies have a decision making role in the project.

A schedule proposed by the lead agency (usually USDOT), however, is subject to concurrence from every other agency that has a meaningful role in the project. This should be changed. Other agencies should be consulted on the schedule but not provided with concurrence authority. Today, with virtually every player at the table having control over the schedule, the dynamics simply push the schedule out. It's easy for agencies to obtain a longer time period for review by not concurring in the lead agency's schedule. Congress should assume that the lead agency will give fair consideration to the concerns of other agencies in setting a schedule, and will consider past timelines and other factors. That is a basis for letting the lead agency set the schedule.

Some may say we can't risk letting the lead agency set a schedule that another agency considers too prompt. I'd first respond that is a hypothetical problem. In addition, the other agency can be given a right to appeal to the Executive Office of the President. On such appeal the agencies are on equal footing. But, today, a non-lead agency is able to lengthen the schedule simply by not concurring in the lead agency's proposed schedule. Nobody is personally at fault. But the incentives in the system need to be changed in favor of promptness, as determined by the lead agency after consultation with the other agencies, combined with providing the other agencies the ability to appeal the schedule.

In addition, the highway program has important value to the economy, to economic growth, to jobs, and to the quality of life. It warrants efforts to improve the review process, as suggested here.

Let me add that the length of the review process can impact project selection by a State. If a project is not classified as a "categorical exclusion" (CATEX) project within the meaning of the National Environmental Policy Act (NEPA), it may be pushed back in project prioritization, in favor of projects that can be completed more promptly and less expensively. So, prompt but fair review schedules are important to advancing significant projects.

Further, a more definite schedule for completing the environmental review process does not resolve any substantive disputes that may arise between agencies. 23 USC 139 also includes dispute resolution provisions. The dispute resolution provisions may also need reform. But, at a minimum, empowering the lead agency to set schedules for environmental reviews should bring any disputes to light sooner.

Smaller Projects. Let me turn now to smaller projects. There has been considerable progress in the review process for smaller and routine projects.

To some extent the increase in the percentage of highway projects receiving CATEX treatment results from the increasing emphasis given to preservation-type projects within State DOT budgets. That has been the case in Wyoming where, in recent years, nearly all projects have been CATEX under NEPA.

Congress has also contributed to this favorable trend, having passed provisions designating additional types of projects as CATEX projects. A noteworthy example is the commendable legislation designating projects with a Federal contribution of less than $5 million as CATEX, and the subsequent decision to index that amount to inflation (measured by the Consumer Price Index), a refinement that we advocated. These modifications have increased the ability of the Wyoming DOT and other State DOTs to use funds more promptly and efficiently.

We would welcome further additions to the classes of projects receiving CATEX treatment.

But smaller projects, even those to be undertaken entirely within a highway's existing operational right-of-way, can still be delayed by other requirements, as State DOTs wait for permits or for jurisdictional determinations from other agencies as to whether there is even any issue for those other agencies to review. This is a distinct problem for smaller projects because the multi-agency coordination mechanisms of 23 USC 139 are not intended to address smaller or CATEX projects. A coordination process for smaller projects could complicate rather than streamline the review of such projects.

More particularly, consider when a State DOT has to wait for months for a determination that, for a project within an existing operational right-of-way, no 404 permits are needed. This is frustrating for a State, as it is frequently the case that there is no water in the project area except for any contained in man-made roadside ditches that drain a highway for safety purposes. We suggest that, for carefully circumscribed projects, such as those within the right-of-way and not for new travel lanes, some kind of time limit on other agencies to respond is appropriate. After that time period, the State should be free to proceed as to the requirement in question, for that specific case. Frankly, the resource agency would then be free to focus its time and energy on other matters.

Delegation of Review Authority is of Limited Value to Many Rural States. As to the project review process, let me acknowledge that one response to the (lack of) speed of the environmental review process has been to allow USDOT to delegate or assign certain review authorities to States. We think that can make sense, particularly for States with relatively high volumes of projects warranting environmental assessment (EA) or EIS level review. But our rural States have low volumes of such projects. State DOT responsibility for undertaking environmental review of complex projects under Federal law is an added layer of work, effort, stress, and cost for intermittent use. So, while we support other States in their efforts to obtain delegated authority, our focus is on expediting and simplifying the process itself, not on who undertakes it.

Concerns with Other Requirements

Let us turn now to concerns with other USDOT requirements or proposed requirements.

Don't Subject Rural States to Rules Inspired By the Problems of Heavily Populated States

One concern that we have is that rules sometimes are not merely burdensome, but maddeningly subject rural States to requirements intended to help address traffic congestion in America's largest metropolitan areas.

This over inclusive approach is one of the reasons we are pleased that the effective date of the performance management rules that were published in the Federal Register this January 18 have been delayed. Aspects of those rules were burdensome and complex. Hopefully, they will be withdrawn and different rules proposed.

Let me elaborate.

Our States are rural, without a high population metropolitan area. Yet, in the NPRM for the system performance and congestion management rule, where FHWA described the "Purpose of the Regulatory Action," the first purpose identified was "Congestion Reduction." See 81 Federal Register at 23807.

Our States do not experience anything remotely resembling the congestion in large metropolitan areas. To the extent that the rule in that docket published on January 18 would subject us (and rural areas in other States) to requirements intended to help address congestion, no problem is solved. Instead, the rule would impose direct data-related costs and require management and staff time to address regulatory compliance. It will, therefore, detract from the ability of State DOT officials to address safety and other important transportation issues and needs.

Under the rule as published in January, States must use FHWA's National Performance Management Research Data Set (NPMRDS) in a way that effectively requires States to develop computerized applications and report on millions of data points, principally to identify areas where traffic is congested. Adding such requirements to the already heavy workload of State DOTs is not appropriate with respect to rural States like Wyoming. Yet the proposal would require States, including very rural States, to report on traffic on all NHS routes. It would have us report to FHWA how many vehicles were on the road halfway between Cody and Casper at 10 o'clock on a Monday morning, for example. This information is not needed to combat congestion, and every dollar used to obtain the data and implement the rule would be unavailable for use elsewhere.

Accordingly, large portions of that final rule as published on January 18 should not apply to rural States, and even to rural areas in more populated States. Those rural roads are not congested and have reliable travel times. They are not generating significant emissions. For a rural State, a simple State certification that its roads are not significantly congested except in unusual circumstances (e.g., road blocked by a crash or landslide) will more than suffice. FHWA should not force States to collect, administer, or report on huge amounts of data to confirm what is already known – that roads in rural States are not generally congested and not generating significant emissions of any kind.

If any such requirements are imposed on a rural State, they would divert management and staff

time and focus, and other costs, to regulatory compliance and away from real work, including efforts to promptly deliver the best possible transportation program to the State. Accordingly, if further developments in the regulatory process do not free a State like Wyoming from such requirements, clarifying legislation should.

Burdensome regulations can impact heavily populated States and areas as well. Congress has correctly acted swiftly to nullify complicating changes in metropolitan planning rules that were published in December. The regulatory burdens facing rural States may differ but they, too, warrant prompt corrective action.

Subject Stewardship "Agreements" to Notice and Comment Rulemaking and Reduce the Burden They Impose on States

Another area of concern is the "Stewardship and Oversight" agreements between FHWA and State DOTs. These "agreements" initially were brief, but now routinely exceed 50 single-spaced pages per State.

While some State-specific material is included in a State's stewardship and oversight agreement with FHWA, most text in these documents consists of standardized clauses. And the number of clauses periodically expands – far beyond the subject matter of 23 USC 106(c), the provision that gave rise to these agreements. Under 23 USC 106(c) a State is able to "assume the responsibilities of the Secretary under this title for design, plans, specifications, estimates, contract awards, and inspections with respect to the projects."

Yet, as the American Association of State Highway and Transportation Officials (AASHTO) has noted, the stewardship and oversight agreements require advance notice of or approval of changes in many kinds of State DOT policies and practices. This includes those for which the State supposedly assumed the responsibilities of the Secretary, such as for: the State's standard specifications; pavement design policy; value engineering policy; quality assurance programs; and other matters. Statute does not require such advance notice or approval of such State decisions. As noted, the statute actually calls for the State to assume the Secretary's responsibility in many of these areas. But, in practice, the "assumption" is subject to periodic approvals as to many matters. This is not what most people think of as an assumption of a responsibility. Nor is it straightforward oversight of how a State exercises assumed responsibility. Yet, States have no real choice other than to accept those terms. We're not saying that the individual provisions in these "agreements" are crushingly burdensome, but they are burdensome and not specifically required by statute.

The Federal highway program is a "federally assisted State program." See 23 USC 145. We are not saying that there should be no strings attached to Federal assistance, or that States are not subject to FHWA oversight to ensure compliance with Federal highway statutes. But creation of obligations to obtain approvals for actions is not mere oversight. It is below the radar regulation. To the extent that such requirements in these agreements are really needed, they should be established by rule that survives the rigors and scrutiny of the rulemaking process. Otherwise, States should have more flexibility, subject to FHWA oversight.

Further, State DOTs are public sector entities, serving the public interest, and subject to public review within the State. We suggest that USDOT/FHWA be more trusting of State DOTs and reduce the burdens it imposes on them.

We suggest that USDOT be required to minimize the number of standard clauses in a stewardship agreement, and publish a revised draft agreement for notice and comment. That notice should be required to include justification for any proposed requirements for advance notification or approval of State policies not specifically called for by statute, or for any other requirements not specified by statute. The provisions that survive the comment process and that are adopted in final rule would supersede the current agreements, with allowance made for any appropriate State-specific adjustments that are mutually agreed.

Waiver Authority Should Be Built into USDOT Rules

USDOT sometimes adopts significant and complex rules that do not include provision for waivers, such as for good cause shown. There are narrow waiver provisions scattered throughout titles 23 and 49 of the U.S. Code, but no general waiver provision for what happens when highway program rules encounter, for example, unusual or unforeseen circumstances. We suggest that a waiver provision be added to title 23 as to highway program regulatory requirements developed by USDOT (i.e., requirements beyond any mere repetition of statutory provisions in the rules). This is different than a waiver from statutory requirements. Such a provision for waivers from regulatory requirements would enable FHWA to grant extensions or other relief to States and MPOs from its own rules. It could also facilitate innovation and development of streamlined or simplified processes as alternates to provisions in rules. Further, we suggest that any denial of a waiver request be accompanied by a written explanation of the reasons for the agency action.

Planning and Flexibility Issues

For a project to be subject to the environmental review process, it must first emerge from the planning process. That is a very complex process that needs no more requirements. This does not mean that new planning approaches should not be tried, but any additions to current planning requirements should be voluntary, not mandatory.

Similarly, it is important that any legislation maintain or increase flexibility available to States under the current highway program. This is not just a question of maintaining current flexibility across programs but, in some cases, a matter of improving flexibility within programs. For example, more flexibility to designate additional mileage as urban or rural connectors would enhance flexibility in the use of freight program funds.

If new legislation provides additional funding for highway and other infrastructure, the success of that initiative can be better assured if States have flexibility in putting the funds to work.

The prospect of additional funds is also a compelling reason for streamlining and regulatory reduction. One wants to move the additional projects associated with the additional funding through the system responsibly, but promptly.

Help Improve USDOT's Performance

To assist the Congress and the public in understanding USDOT's stewardship of its program activities, Congress could require some new reporting by USDOT. We recognize that USDOT already submits a number of important reports on such topics as the condition and performance of highway and transit systems and highway fatalities, but some others could be useful.

They could include annual reports such as the following:

> For all projects under Chapter 1 of title 23 for which a Record of Decision was issued for an EIS, the average amount of time between issuance of the ROD and publication in the Federal Register of the notice of intent to prepare an EIS. USDOT also could be invited to set a target for that average time period for future years.
>
> A list of all regulatory requirements imposed on States or local governments or the public pursuant to the Federal highway program, whether in the Code of Federal Regulations or otherwise, removed or reduced, and the estimated value of those reductions.
>
> A list of all regulatory requirements newly imposed on States or local governments or the public pursuant to the Federal highway program, whether in the Code of Federal Regulations or otherwise, and the estimated additional costs of such new requirements.
>
> A list of any categorical exclusions added to or deleted from 23 CFR 771.117.

This is not a long or complicated list, but the point is that, of all the data and reports and decisions generated by USDOT regarding the highway program, some of them should be concerned with reductions in burdens imposed on State DOTs and others. We think it would be useful for that perspective to receive increased attention and reporting by USDOT.

Additional Streamlining and Regulatory Reforms

In our statement today we have recommended action on several ideas for streamlining and reduced regulation while protecting the environment and other public interests. But there are other ideas for streamlining and regulatory reform that do not conflict with ours. Other States have ideas. The private sector has ideas. Trade associations, including the association to which we belong (AASHTO), have continued to work on areas for regulatory reform and streamlining. So, there are additional ideas for reform for the Committee to consider.

A Few Words on Infrastructure Investment

Before closing, let us add a few comments on infrastructure investment. We have made some of these points in previous testimony, but they deserve further mention.

Significant Federal Transportation Investment in Rural States Benefits the Nation.

The entire nation, including residents of major metropolitan areas, is well served by Federal investment that improves surface transportation infrastructure in and across rural States like ours. Among other benefits, Federal-aid highways in our rural States enable:

- truck movements between the West Coast and the large cities of the Midwest and East, benefitting people and commerce in the big metropolitan areas at both ends of the journey;
- agricultural, energy, and natural resource products, which largely originate in rural areas, to move to national and world markets;
- tourists to visit scenic wonders like Yellowstone National Park and Mount Rushmore; and
- movement of military personnel and equipment.

Rural States face funding challenges.

Yet, our States face significant transportation infrastructure funding challenges. We can't provide all these benefits to the nation and ensure a sufficiently connected national system without Federal investment. We –

- are geographically large;
- often include vast tracts of Federal lands (that cannot be taxed or developed);
- have extensive highway networks; and
- have low population densities.

This means that we have very few people to support each lane mile of Federal-aid highway – and preserving and maintaining this aging, nationally connected system is expensive. Yet, citizens from our States contribute to this effort significantly. Nationally, the per capita contribution to the Highway Account of the Highway Trust fund is approximately $111.45. The per capita contribution to the Highway Account attributable to rural States is much higher. In Wyoming it is much, much higher – $319.87.

Public Private Partnerships (P3s) and other approaches to infrastructure investment that depend on a positive revenue stream from a project are not a surface transportation infrastructure solution for rural States. The relatively low traffic volumes on projects in rural States are not suitable for tolls, even if one wanted to impose them. Put another way, projects in rural areas are unlikely to generate revenues that will attract investors for bonds or other instruments to finance those projects – even if the revenues are supplemented by tax credits for investors. So, an infrastructure initiative comprised of funding that supports P3s would not be enough to make a difference in surface transportation infrastructure in rural States. Other funding approaches must be part of any national infrastructure initiative for rural States to be able to participate substantially in the initiative, particularly as to surface transportation infrastructure.

Using the current predominantly formula-based FAST Act approach to distribution would ensure that both rural and urban States participate in the initiative. It also would help push the benefits of any new infrastructure initiative out to the public promptly.

AASHTO made similar points in its April 5 statement before the House Transportation and Infrastructure Committee presented by the CEO of the Oklahoma DOT (page 9):

> Based on the Federal surface transportation program's long track record of efficiency and flexibility, we recommend that any increase in federal funds should flow through the existing FAST Act formula-based program structure rather than through untested new approaches that will require more time and oversight. Any effort that does not rely on the existing federal surface transportation program, such as an approach that chooses only certain projects based on a priority list, would leave most of the country behind no matter the size of such a list. In addition, I believe this type of a top-down approach from Washington will not only undermine the state and local prerogatives honored in the FAST Act, but also impede timely and successful delivery of the new infrastructure package.

Conclusion

In conclusion, we have offered today various ideas for streamlining regulatory processes while continuing to protect public interests. We hope that Congress will take favorable action on those proposals.

That concludes our statement. I'll be pleased to respond to questions at the appropriate time, though, to the extent the responses go beyond the positions we have addressed in the written statement, I am able to respond only for my own department.

We (the transportation departments of Idaho, Montana, North Dakota, South Dakota, and Wyoming) thank the Committee for its consideration of our views and suggestions and for the opportunity to present testimony today.

****

Senate Environment and Public Works Committee
Hearing entitled, "Infrastructure Project Streamlining and Efficiency: Achieving Faster, Better, and Cheaper Results."
May 3, 2017
Questions for the Record for Mr. Bill Panos

Ranking Member Carper:

1. *Streamlining for small projects*
   a. In your testimony you noted that in recent years nearly all projects have been Categorically Excluded under NEPA. For a state such as Wyoming, what percent of your projects are Categorically Excluded and what percent of projects would benefit from additional environmental streamlining provisions focused on larger projects that require Environmental Impact Statements?

      Reply: Over the last two decades, 98 percent of projects undertaken by the Wyoming Department of Transportation (WYDOT) have received a categorical exclusion (CE) under NEPA. Approximately 2 percent of projects have required an environmental impact statement (EIS) or an environmental assessment (EA). However, EA and EIS projects are generally far more costly than CE projects. So, EA and EIS projects represent a much higher percentage of the overall budget for projects than of the percentage of projects.

   b. Would proposals that primarily benefit projects requiring Environmental Impact Statements have any negative impact on a rural state that primarily uses categorical exclusions?

      Reply: No, we would welcome process streamlining of EIS projects. Further, in all or nearly all states most of the highway program projects are CEs.

2. *Tools to improve reviews*
   In her testimony, Ms. Pilconis recommended building a database of technical information on endangered species habitats, and other protected resources to reduce the new information gathering requirements for each project. Is this something that Wyoming has considered or would benefit from?

   Reply: WYDOT already is an active participant in a multi-agency, multi-level cooperative effort on a wide range of matters, including data, related to protected resources, endangered species, and sensitive habitats in so far as they involve the transportation systems in Wyoming. This coordination includes federal resource agencies (including the US Fish and Wildlife Service and the Bureau of Land Management), state agencies (such as the Wyoming Game and Fish Department, the Wyoming Department of Environmental Quality, and others), and local organizations, in addition to tribal nations, environmental watch groups, and advocacy research and

policy associations. From this ongoing cooperative effort, both WYDOT and relevant Federal agencies are significantly informed as to data that could be relevant in the context of the environmental review process for a transportation project in Wyoming. Thus, in WYDOT's circumstances, we would not anticipate benefit from a new requirement to build certain technical data bases or additional data in anticipation of future project reviews.

3. *Performance Management*

You have testified that the requirement to measure the performance of infrastructure investments in your state constitute an unnecessary burden. The goal of the performance management statute is to improve knowledge of how infrastructure assets perform, in terms of safety, state of good repair, air quality, and other national goals. Do you believe that States should be trying to improve outcomes by investing wisely based on data and up to date information?

Reply to first part of Question 3: First, specifically, I testified as to a very specific aspect of USDOT/FHWA performance measurement and management requirements, those concerning collection and reporting of certain traffic data. I did testify that the specific traffic data requirements included in one of the performance management rules is, as applied to Wyoming and other rural states, overly inclusive, imposing burdens but little or no value. Simply, our roads are free-flowing and without congestion other than incident congestion (e.g., a landslide or snow blocks the road). Let me add that, in the applicable regulatory docket, the American Association of State Highway and Transportation Officials (AASHTO), representing all 50 states, also asked to cut back the specific traffic data collection requirement we mentioned.

Second, turning to the value of performance measurement and management more generally, we are among the many in agreement that there is value in having up to date data on key matters and making use of it in deciding how to allocate funds among potential investments in projects or programs. We certainly operate in that manner in running our program at WYDOT.

How would you propose that states measure outcomes and performance?

Reply to second part of Question 3: At the Wyoming DOT we have for years taken measurements as to the condition of our bridges and pavements as well as safety data, such as fatalities and other incidents. WYDOT was a national leader among state DOTs in integrating a comprehensive asset management computer system into its overall business management software. Today, Wyoming, like many states, is implementing the new Federal performance measurement and management program. To some extent, those Federal requirements will overlap substantively with our prior practices, and we will have to determine whether to continue all of our past work as we phase in the new work required by Federal rules. We need to be efficient in our measurement efforts. However, there is no question but that our state will continue to

undertake measurements over time regarding pavements, bridges, safety and other important matters, so that we can see our performance and weigh that in our programming decisions.

Do you believe that it is appropriate for Congress and the public to have access to comprehensive, transparent information about the investment effectiveness of the billions of highway dollars made available to States?

Reply to third part of Question 3: We strongly agree that Congress and the public should have access to information about the investments made under the Federal transportation program, including information as to the effectiveness of investments. We note, however, that "comprehensive" and "effective" are words that involve some judgment. So, in saying that we agree with the basic point of this question, that does not mean that we agree in advance to develop and provide access to additional measures beyond those required because someone believes that adding more measures or calculations would, for example, make the suite of measures more "comprehensive" (a term that does not appear in the performance measure statute, 23 USC 150). We would review each proposed requirement on its merits before agreeing or disagreeing. But that is not general disagreement with the approach of performance management.

****

Senator BARRASSO. Well, thank you so very much, and I thought those comments were timely and were helpful, and we appreciate you being here, and we have some questions for after we get through the panel.

Mr. PANOS. Thank you, sir.

Senator BARRASSO. I would like to next turn to Leah Pilconis, who is the Consultant on Environmental Law and Policy on behalf of the Associated General Contractors of America.

Thanks so much for joining us today.

STATEMENT OF LEAH F. PILCONIS, CONSULTANT ON ENVIRONMENTAL LAW & POLICY, ASSOCIATED GENERAL CONTRACTORS OF AMERICA

Ms. PILCONIS. Thank you.

Chairman Barrasso, Ranking Member Carper, and members of the Committee, thank you for inviting Associated General Contractors of America to testify here today. My name is Leah Pilconis, and I am AGC's Senior Environmental Law & Policy Advisor.

I have spent the last 16 and a half years establishing and leading AGC's environmental program. AGC members know firsthand how to build infrastructure in a safe, effective, and efficient manner, but funding has been insufficient to repair and replace it. Congress and the Administration must first and foremost increase funding for our nation's infrastructure programs to ensure that we can address our increasingly dire infrastructure backlog.

In addition to increased funding, AGC has long been committed to simplifying the sequential and layered approach of the existing environmental permitting process. The chart behind me attempts to illustrate how complex it is. The chart identifies areas of duplication, as well as each of the potential procedural and legal chokepoints that can grind the process to a halt or even restart it entirely.

AGC believes we can make the Federal environmental review process faster, better, and cheaper without sacrificing environmental protections. AGC recommends expanding the meaningful reforms this Committee has helped to enact in MAP–21 and the FAST Act.

The current laws provide a mechanism to ensure that leading agencies engage in early outreach and meetings with participating agencies and stakeholders. But importantly, there is no deadline for the Government to complete the NEPA review process from start to finish. And where current law does set deadlines for agency actions under NEPA or for issuing permits and permissions, those deadlines are missed because the list of exceptions is as long as the list of approvals you need to be in compliance with the 30+ Federal environmental statutes.

MAP–21 goes so far as to impose penalties on Federal agencies that fail to meet deadlines. Even so, these deadlines aren't being met, and fines aren't being collected. It is not happening because the deciding agency can say the permit application was not complete or it is waiting on another entity to make a decision. And there is apparently a reluctance to elevate disputes.

The Government also is not conducting Federal and State permitting reviews concurrently, even though this is called for by

MAP–21 and FAST–41. It is not happening because the laws say you don't have to do this or these things at the same time if it would impact your ability to conduct any analysis or meet any obligation.

Congress should strengthen the time limited schedules in current law to make them truly mandatory. There also should be a hard deadline for completing a NEPA review. In addition, AGC has identified three ripe, high level opportunities for streamlining.

First, Congress should require a nationwide merger of the NEPA and the Clean Water Act Section 404 permitting processes. Congress should require the Corps to issue the 404 permit at the end of the NEPA process based on the information generated by NEPA.

Second, and more generally, the monitoring, mitigation, and other environmental planning work performed during the NEPA process included in the final EIS and Record of Decision must satisfy Federal environmental permitting requirements unless there is a material change in the project. Time and money are wasted on redoing project analyses and reviews and on collecting duplicate information from permit applicants.

Agencies must break away from always preparing one of a kind products from the ground up. Congress should strengthen the programmatic approaches in current law and require agencies to use the work previously prepared by other agencies for similar type projects and for projects in the same region and/or impacting similar resources.

Third, Congress must consider a reasonable and measured approach to citizen suit reform to prevent misuse of environmental laws. These lawsuits can take years to resolve and delay or prevent the public from receiving and benefiting from cleaner water, safer roads and bridges, and a more reliable energy system.

Congress should clarify requirements for legal standing, require bonds to be posted by plaintiffs seeking to block activities, and require that enforcement of complex environmental rules be enforced only by trained staff of Government agencies.

Thank you again for the opportunity to testify on behalf of AGC. I look forward to answering your questions.

[The prepared statement of Ms. Pilconis follows:]

Statement of

Leah F. Pilconis
Senior Environmental Law & Policy Advisor

With

The Associated General Contractors of America

to the

U.S. Senate

Committee on Environment and Public Works

For a hearing on

"Infrastructure Project Streamlining and Efficiency: Achieving Faster, Better, and Cheaper Results"

May 3, 2017

AGC of America
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA
Quality People. Quality Projects.

The Associated General Contractors of America (AGC) is the largest and oldest national construction trade association in the United States. AGC represents more than 26,000 firms, including America's leading general contractors and specialty-contracting firms. Many of the nation's service providers and suppliers are associated with AGC through a nationwide network of chapters. AGC contractors are engaged in the construction of the nation's commercial buildings, shopping centers, factories, warehouses, highways, bridges, tunnels, airports, waterworks facilities, waste treatment facilities, levees, locks, dams, water conservation projects, defense facilities, multi-family housing projects, and more.

2300 Wilson Boulevard, Suite 300 • Arlington, VA 22201 • Phone: (703) 548-3118

Statement of Leah F. Pilconis
The Associated General Contractors of America
Committee on Environment & Public Works
United States Senate
May 3, 2017

Chairman Barrasso, Ranking Member Carper and members of the committee, thank you for inviting the Associated General Contractors of America (AGC) to testify on infrastructure project streamlining and efficiency. My name is Leah Pilconis, and I am AGC's Senior Environmental Law and Policy Advisor. One of my core functions for AGC is to monitor, summarize, and regularly comment on federal legislation and regulations that may implicate either the scope or nature of the construction industry's obligations to the environment. On behalf of AGC, I maintain liaison with the U.S. Environmental Protection Agency and other federal agencies that interpret and enforce federal environmental laws.

In a pro-active effort to help AGC members meet federal environmental requirements, I also develop and disseminate practical "compliance tools" for construction contractors, and help to organize and hold environmental seminars, forums, and other programs for such contractors. I serve as the editor of AGC's monthly newsletter on environmental issues that affect construction. I also develop and distribute fact sheets on environmental requirements, and brochures and flyers highlighting the association's environmental initiatives.

AGC also advises lawmakers, regulators and the media of the impact that various economic forces and policy choices are likely to have on the construction industry.

AGC represents more than 26,000 construction contractors, suppliers and service providers across the nation, through a nationwide network of 92 chapters in all 50 states, DC, and Puerto Rico. AGC contractors are involved in all aspects of nonresidential construction and are building the nation's public and private buildings, highways, bridges, water and wastewater facilities, locks, dams, levees and more.

As such, our members know first-hand how to build infrastructure in a safe, effective and efficient manner. Similarly, they know the many challenges to doing just that. The primary challenge, simply stated, is money. For example, Congress has not raised a primary source of infrastructure funding–the federal gas tax—since 1993. Over the last 24 years, the total inflation rate has risen 71 percent, using Consumer Price Index data. Put another way, $1 of gas tax generated revenue in 2017 would have been worth 58 cents in 1993. Therefore, the relative buying power of this revenue source has diminished substantially. Meanwhile, the relative needs of America's infrastructure needs—from surface transportation like highways, bridges, locks, dams, ports and harbors, airports and railways to clean water and wastewater facilities—remain astronomically high.

In terms of surface transportation, Congress and the Administration must restore solvency to the Highway Trust Fund to ensure that our nation can address our transportation infrastructure needs. AGC has long-supported increasing the federal gas tax and absent such an increase we encourage a commitment to identifying a long-term, reliable, dedicated, user-based revenue source for the Highway Trust Fund. Failure to resolve the issues facing the trust fund prior to the expiration of the Fixing America's Surface Transportation Act (FAST Act) in 2020 will require Congress and the Administration to either pass additional short-term stopgap measures or find a $110 billion off-set to pass a long-term bill that will, at best, maintain current funding levels for federal surface transportation programs. Absent

the long-term stability for the Highway Trust Fund, many projects critical to the efficient movement of people and goods have the real potential to be backlogged or never built.

Nevertheless, I am neither here to discuss financing options for infrastructure, nor is that where my expertise lies. My testimony before you focuses on the opportunities to reduce duplication in, and to improve the efficiency of, the federal environmental review and permitting process; a process that is circuitous, costly and time-intensive for many infrastructure projects. Improving environmental approval processes alone while maintaining the integrity of those processes to mitigate environmental impacts could generate project cost savings. In addition, such improvements could allow the public to receive and benefit from infrastructure projects in a timelier fashion.

Enclosed with this written statement is AGC's comprehensive proposal entitled "*Reforms for Improving Federal Environmental Review and Permitting*." I will briefly highlight several reforms from that proposal.

I. Why Further Improving the Environmental Review and Permitting Process is Necessary

First, AGC must note its appreciation for the work this Committee has untaken in helping enact several environmental reforms in The Moving Ahead for Progress for the 21st Century Act (MAP-21), the FAST Act and the Water Resources Reform and Development Act (WRRDA). But, more work can to be done and improvements upon those enacted reforms can be made.

For example, a National Association of Environmental Professionals (NAEP) review of the 194 Environmental Impact Statements (EIS) published in 2015 found that the average time to complete an EIS was five years and only 16 percent were prepared in two years or less. Meanwhile, 2015 report by Common Good, a non-profit government watchdog, finds that a six-year delay in starting construction on public projects costs the nation more than $3.7 trillion in lost employment and economic gain, inefficiency, and unnecessary pollution. That is a staggering amount of statutory and regulatory inefficiency that needs to be addressed.

II. Opportunities for Improving Efficiency, While Maintaining Process Integrity

The ripe, high-level opportunities for improving the efficiency of the environmental review and permitting processes rest in the ability of Congress to: (A) merge sequential and duplicative federal environmental reviews; (B) mandate the use of previously completed environmental review and study information to avoid duplicative reviews; and (C) consider a reasonable and measured approach to citizen suit reform designed to prevent misuse of environmental laws.

A. Sequential and Duplicative Reviews Add Hurdles to Infrastructure Approvals

The current process of performing sequential and often duplicative environmental reviews and permits on the same project – performed by all levels of government following the National Environmental Policy Act (NEPA) approval process – is presenting massive legal hurdles to infrastructure approvals. A builder of infrastructure—whether a contractor or government agency—must seek approval not from "the government," but from a dozen or more different arms of the government. According to bonding companies that finance large public works projects, two environmental approvals are critical in rating a project's risk for bond financing. Those are the NEPA review (1,679 days, on average, to complete an EIS) and Clean Water Act (CWA) Section 404 permit authorization (788 days, on average, to obtain an

individual permit). Obtaining these approvals prior to bonding greatly reduces risk and achieves a higher bond rating to the benefit of the project sponsor.

FAST-41 requires that state and federal permitting reviews run concurrently for a "covered project" so long as doing so does not impair a federal agency's ability to review the project. The law does not specify the permits and approvals required to be included in the schedule. There is no penalty or regulatory consequence for missed deadlines. MAP-21 directs cooperating agencies to coordinate and carry out activities concurrently, instead of sequentially, and in conjunction with the NEPA review, and expanded the use of categorical exclusions. Notably, the "concurrent review" requirement under MAP-21 is waived if it "would impair the ability" of any agency to conduct any analysis or meet any obligation. WRRDA similarly requires agency coordination and concurrent action on environmental reviews to accelerate project delivery.

AGC REFORMS: Several states have merged their NEPA and CWA Section 404 permitting processes; this should be the national standard and the U.S. Army Corps of Engineers' (USACE) current regulations already point in this direction but do not go far enough. Across the nation there is considerable variation in the usage and emphasis of merger processes. In an integrated process, the project sponsor would submit the 404-permit application to USACE simultaneously with the publication of the draft EIS. USACE would be required to issue the 404 permit at the end of the NEPA process based on the information generated by NEPA.

Both the NEPA and Section 404 processes involve the evaluation of alternatives, the assessment of impacts to resources, and the balancing of resource impacts and project need. Conducting two processes simultaneously (or allowing the former to satisfy the latter) would greatly expedite project decision-making and avoid duplication and process inefficiencies. The federal funding agency should assume a lead role in shaping the project "purpose and need" and "range of alternatives" during the NEPA review. To simplify the review process, and reduce the potential for impasses over minor changes, Congress should modify any existing requirements for lead agencies to obtain participating agencies' "concurrence" in project schedules or the adoption/use of "planning products."

More generally, it should be a requirement for all government agencies involved in the issuance of a federal permit for any given project to complete concurrent reviews (in conjunction with the NEPA review process) within established time periods. From the perspective of the permit applicant, a coordinated concurrent review under all major federal and state authorities avoids duplication and delays and helps to avoid potentially conflicting permit conditions or limitations (e.g. differing mitigation requirements). There must be timelines and deadlines for completing the environmental permitting process as well as NEPA review deadlines.

B. Redoing Permit Documentation and Analyses Wastes Time and Money

Time and money is wasted on redoing project analyses and reviews and on collecting duplicative information from permit applicants. Challenges with environmental documentation and permitting processes are root causes for delays on infrastructure projects. The environmental permit approval process generally entails sequential reviews by multiple agencies and various requests for project-specific information. Even though each agency has slightly different forms and different information requirements, some of the information (like project descriptions) is duplicated across applications. This means that there can be multiple forms requesting the same information in different ways.

MAP-21 allows the use of errata sheets, rather than rewriting the draft EIS, when minor modifications are needed in a final EIS. Also, the lead agency should use a single document for the final EIS and ROD, as much as possible, unless there are substantial changes or there are significant new circumstances or information changes. By preventing the needless production of multiple additional documents, MAP-21 significantly reduces the amount of time involved in EISs. MAP-21 also encourages the use of "programmatic" mitigation plans and makes it somewhat easier to use previous planning work to meet NEPA requirements. Notably, MAP-21 also calls for the lead agency to develop a NEPA ROD that is sufficient to satisfy any other federal approvals/permits that the project may require; however, the duty to use a "single document" is void if its use would be impracticable, e.g., impair the ability of any federal agency to conduct needed analyses or meet any obligations.

AGC REFORMS: The monitoring, mitigation and other environmental planning work performed during the NEPA process, and included the final EIS/ROD, must satisfy federal environmental permitting requirements, unless there is a material change in the project.

- Implement an integrated "one-stop" permitting system by creating a single form that collects all information needed for major permits. That way, applicants only need to provide information once (and to fill out one long form and file it once);
- Also, build an online database of technical information (e.g., on distributions of endangered species, critical habitat, or previous permit requirements) so that new information does not have to be gathered anew for every project operating in a similar watershed or geographic area;
- Allow environmental reviews to adopt material from previously completed environmental reviews from the same geographic area; and
- Require federal agencies to use regional- or national-level programmatic approaches for authorizations and environmental reviews, for frequently occurring activities as well as those activities with minor impacts to communities and the environment.

C. Judicial Review Reforms in Current Law Are Limited and Not Likely To Provide Significant Relief

The citizen suit provisions in 20 environmental statutes are being used to challenge all types of projects, land restrictions and permit requirements relating to the projects. These lawsuits can take years to resolve and the delay not only impacts the ability to secure the necessary environmental approvals and the financing of the project, but – in far too many cases – impedes projects that are vital to the renovation and improvement of our nation's municipal water supplies, wastewater treatment facilities, highway and transit systems, bridges and dams.

As currently written, the FAST Act's judicial review changes are limited and not likely to provide significant relief. FAST-41 reduced the statute of limitations (SOL) for NEPA challenges from six to two years; however, most NEPA lawsuits already are filed well within two years. FAST-41 also provides that in any action seeking a temporary restraining order or preliminary injunction of a covered project, the court shall "consider the potential effects on public health, safety, and the environment, and the potential for significant negative effects on jobs resulting from an order or injunction" and shall not presume that such harms are reparable. However, most courts already consider an injunction's negative impact when balancing the harms and equities. Another FAST-41 provision dictates that NEPA challenges can only be brought by those who commented on an EIS and did so with sufficient detail to put the lead agency on notice of the claims. With regard to standing, many courts have limited NEPA challenges to comments raised within the public review period on the EIS (others allow plaintiffs to file suit as long as they can show "injury in fact").

MAP-21 reduced the time limit to 150 days after publication of a notice in the *Federal Register* announcing that a permit, license or approval is final, for parties to file lawsuits that challenge agency environmental decisions regarding surface transportation projects. However, the preparation and announcement of a "supplemental" EIS, when required, restarts to 150-day clock.

AGC REFORMS: Citizen suit reforms are necessary to prevent their abuse.

- Further shorten and standardize the SOL for challenges to final NEPA RODs or claims seeking judicial review of an environmental permit, license or approval issued by a Federal agency for an infrastructure project;
- Require interested parties to get involved early in a project's review process to maintain standing to sue later;
- Require bonds be posted by plaintiffs seeking to block activities to reduce abuse and delay tactics that harm private parties and taxpayers; and
- Require that the enforcement of federal environmental rules on a construction site be enforced only by trained staff of government agencies -or-
    - Limit citizen suit penalties to violations of objective, numeric limitations rather than subjective, narrative standards;
    - Extend "notice period" beyond the current 60 days (giving regulatory agencies more time to review notice of intent letters and initiate formal actions);
    - Clarify definition of "diligent prosecution" of alleged violations, thereby allowing federal/state authorities to exercise their primacy in enforcement and preventing unnecessary citizen suit intervention.

III. Conclusion

As noted, AGC appreciates the previous efforts this Committee has taken to reduce the duration of the federal environmental review and permitting processes. But, again, more reforms must be enacted to address the significant bottlenecks and redundancies in the environmental process.

We believe that the reforms suggested here and additionally enclosed below would both shorten the process while maintaining the integrity of the overall process that helps ensure infrastructure project impacts on the environment are mitigated.

Thank you again for the opportunity to testify on behalf of AGC, and I look forward to answering your questions.

AGC of America
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA
Quality People. Quality Projects.

Reforms for Improving Federal Environmental Review and Permitting

PROBLEM

The Federal Government is a steward of the public trust and the timeliness of its decisions can have major implications for the environment and the economy. Delays in environmental review and permitting decisions, as well as lengthy procurement processes, often derail the efficient delivery of needed infrastructure projects by many years. These processes are bureaucratic, lengthy, complex and duplicative. They involve multiple interrelated approvals within a labyrinth of numerous agencies. Throughout these processes, too often, litigation abounds. Delays deny the public the substantial benefits that come from a construction project: improving our economy, our competitiveness, and our quality of life.

GOAL

AGC hopes this document will help frame the problems that are playing out on public projects and demonstrate the need for reform. The sections that follow identify ways to lessen the time and costs associated with environmental review and permitting – with a focus on integrating the processes to avoid sequential and duplicative reviews, minimize redoing permit documentation and analyses, foster innovation, reduce litigation, and mitigate the unreasonable contractual risks that are unnecessarily driving up costs for infrastructure projects. AGC offers specific reforms that seek to offset lengthy National Environmental Policy Act review schedules and avoid the Clean Water Act Section 404 permitting lag that follows.

Prepared by:
The Associated General Contractors of America
2300 Wilson Boulevard, Suite 300
Arlington, Virginia 22201
Main Phone Number: (703) 548-3118

Date: April 30, 2017 (Discussion Draft)

AGC of America
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA
Quality People. Quality Projects.

Table of Contents

I. Executive Summary ***3***

II. Introduction to Federal Review and Permitting ***4***

A. The Use of NEPA 4
B. The Interplay between NEPA and other Federal Requirements 5
C. Federal Review and Permitting in Action 7
D. Federal Review and Permitting Costs 7

III. General Recommendations to Improve Federal Review and Permitting Efficiency ***8***

A. Streamlining Reforms in Current Law Have Limited Application; Fail to Mandate Schedules 8
B. Sequential and Duplicative Reviews Add Hurdles to Infrastructure Approvals 9
C. Redoing Permit Documentation and Analyses Wastes Time and Money 10
D. Environmental Justice and "Not in My Backyard" (NIMBY) Principles Are Being Used to Stop Infrastructure Growth 11
E. Citizen Suits Are the 800-Pound Gorilla 11
F. Permitting Risk Remains Key Barrier to Infrastructure Investment 13

IV. Recommended Reforms Specific to the NEPA Process ***14***

A. NEPA Process Issues Compromise Efficient Delivery of Infrastructure Projects 14
1. Initiating Design-Build or P3 Procurement Prior to Conclusion of NEPA Process Drives Up Cost
2. Even Minor Construction Changes Cause Major Delay When It Re-Opens NEPA; Stifling Private Sector Innovation
B. Inefficient Bureaucratic Processes Force Reevaluation of Previously Approved NEPA Documents, Decisions 16
C. Disagreements Loom Over Role Coordinating Agencies Play in NEPA Process 16
D. USEPA Plays Commanding Role in NEPA Review Process 16
E. Agencies Struggle with Climate-Change Impacts Analyses 17

V. Federal Permitting Example: The Clean Water Act Section 404 Permit Process ***17***

A. At-A-Glance Look at the CWA Section 404 Permit Process 18
B. 'Chokepoint' Details in CWA Section 404 Individual Permit Process 19
1. Jurisdictional Determination
2. Application Adds/Corrections
3. Public/Agency Input Process
4. Related Reviews/Permits
5. USEPA Veto 404(c) or 404(q) Elevation
6. Litigation
7. Permit Conditions
C. Recommended Reforms Specific to the 404 Program 21
1. USEPA's Authority to Veto a Duly Issued Permit Casts Uncertainty on Development
2. Permitting Authorities Are Thwarting Advanced Mitigation, Mitigation Banking, and Future Mitigation Investments

VI. AGC Staff Contacts ***23***

Appendix 1: Expedited Environmental Review of Infrastructure Projects – FAST-41 Highlights ***28***

I. Executive Summary

Most large infrastructure projects must receive environmental reviews and approvals that involve many federal agencies and multiple levels of government. What is more, these projects generally do not qualify for efficient general permitting procedures and must obtain extremely costly and time-consuming individual permits, on a project-by-project basis. AGC, in this document, is focused on reforming the National Environmental Policy Act (NEPA) and the federal environmental permitting process to eliminate delays, unnecessary duplication, and frivolous litigation, and give worthy projects a timely green light.

Specifically, Congress should strengthen and expand the time-limited schedules and other meaningful "streamlining" reforms in current law and impose action-forcing mechanisms as well as incentive programs to ensure agency-wide compliance. To avoid sequential and duplicative reviews that slow down many large infrastructure projects, Congress should require the issuance of Clean Water Act Section 404 permits in conjunction with the NEPA Record of Decision. To this end, it is critical that Congress require agencies to allow the monitoring, mitigation and other environmental planning work performed during the NEPA process, and included the final Environmental Impact Statement, to satisfy federal environmental permitting requirements.

AGC also points out why undisclosed environmental risk – as for managing and remediating unforeseen hazardous material – can unnecessarily drive up construction costs (due to added cost contingencies) and limit the universe of qualified, responsible construction firms (due to contractors dropping out of the procurement). Congress should require the government to bear such unquantifiable risk on public works projects and/or provide contractual relief through cost sharing mechanisms.

Importantly, the threat of endless litigation (with regard to environmental justice, climate impacts and other issues) is forcing agencies to try to make their NEPA analyses litigation-proof so they survive judicial challenges under NEPA's well worn "hard look" standard. AGC herein makes the case for why Congress should work to remove the incentives for frivolous and obstructive litigation that are delaying, and sometimes defeating, proposed projects.

AGC also offers specific reforms to the NEPA process that would help to expedite project construction at a reduced price, while supporting the innovation needed to our nation's infrastructure, include prohibiting the initiation of procurement prior to the NEPA approval and exempting *de minimis* changes formal NEPA re-evaluation. Specific to the 404-permitting process, reforms are needed to encourage advance mitigation planning and investment.

II. Introduction to Federal Review and Permitting

A. The Use of NEPA

NEPA is a procedural "planning" statute with two primary aims. First, it obligates federal agencies to consider every significant aspect of the environmental impact of an action before proceeding with it. Second, it ensures that the agency responsible for the action will inform the public what the action is, and that it has considered environmental concerns in its decision-making process. In this capacity, NEPA has become one of the primary mechanisms through which the public can participate in the federal decision-making process.

There are three triggers for NEPA's procedural requirements:

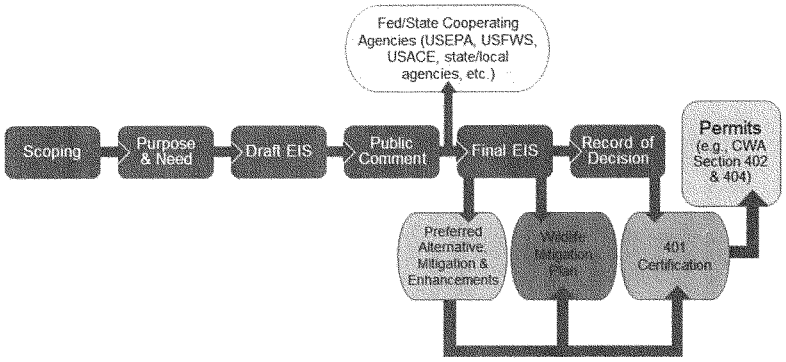
- One or more project components will occur on federal lands, such as national forest or Bureau of Land Management lands (e.g., building powerlines, drilling for oil, logging, installing renewable energy projects).[1]
- The project or its components will be funded in part or whole by federal funds.
- The project will require a federal permit or license.

Federal actions to which NEPA applies involve the participation of a "lead agency" and "cooperating agencies." The lead agency is the federal agency that takes responsibility for preparing the NEPA documentation.[2] A cooperating agency is any federal agency, other than a lead agency, that has jurisdiction by law or special expertise regarding any environmental impact involved in a proposal. A tribal, state, or local agency may also be a cooperating agency.[3] As explained below, there are a host of environmental statutes that may apply to a given federal action and, as such, numerous federal agencies may be required to participate in the NEPA process.

NEPA covers the full range of potential impacts, including but not limited to water quality impacts, wetlands impacts, air quality impacts, endangered species impacts, and historic resources impacts. NEPA establishes procedural and planning practices for federal agencies but it does not replace (or conflict with) other substantive environmental laws (e.g., Clean Air Act, Clean Water Act, Endangered Species Act) and the additional permitting and process procedures required therein.[4] See Section II.B below.

If the environmental consequences of a proposed federal action may be significant, the federal agency prepares an Environmental Impact Statement (EIS). An EIS is a detailed evaluation of the proposed action and alternatives. As soon as possible after determining that an EIS is needed, the agency is required to determine the scope of the project (including any environmental laws, regulations, or executive orders, in addition to NEPA, that will apply to the project). Once the agency determines the scope of the action, EIS preparation can begin. The action's "purpose and need statement" is the foundation on which subsequent sections of the EIS are built.[5]

EISs and supporting technical studies often run a thousand pages or more. The public, other federal/state cooperating agencies, and outside parties provide input into the preparation of an EIS and then comment on the draft EIS when it is completed.[6] After a final EIS is prepared, a federal agency will prepare a public Record of its Decision (ROD) that addresses how the agency incorporated the findings of the EIS, including consideration of alternatives, into the decision-making process.[7]



B. The Interplay between NEPA and other Federal Requirements

NEPA forms the framework to coordinate compliance with other environment-related statutes and regulations, many of which impose permit requirements. On the positive, the NEPA process serves to provide decision-makers with a more comprehensive view of the major environmental issues and potential conflicts among the environmental components of proposed projects. However, NEPA does not give the lead agency (or for that matter, the Council on Environmental Quality (CEQ)) regulatory authority and oversight of the agencies charged with implementing the regulations and permitting programs that are required to adequately ensure the federal activity is conducted to avoid and minimize potential impacts. In current practice, project proponents are generally proceeding with piecemeal permit applications after NEPA to advance the project to construction.

Construction projects, such as bridge and highway construction, pipelines, water resource projects, renewable or conventional energy production may require compliance with literally dozens of federal, state, tribal, and local laws.

Federal environmental legal requirements potentially applicable to federal actions include; but may not be limited to:

- Archaeological and Historical Preservation Act
- Clean Air Act
- Clean Water Act (CWA)
- Coastal Zone Management Act
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- Emergency Planning and Community Right to Know Act (EPCRA)
- Endangered Species Act (ESA)
- Executive Order 12898 (Environmental Justice)
- Farmland Protection Policy Act
- Fish and Wildlife Coordination Act

- Historic Sites, Buildings and Antiquities Act
- Marine Mammal Protection Act
- Migratory Bird Treaty
- National Historic Preservation Act
- Pollution Prevention Act
- Resource Conservation and Recovery Act (RCRA)
- Rivers and Harbors Act
- Safe Drinking Water Act
- Section 4(f) of USDOT Act (49 USC 303)
- Title VI of the Civil Rights Act
- Wild and Scenic Rivers Act
- Wilderness Act

These federal statutes are administered by a variety of different federal agencies that could all potentially become "cooperating agencies" in any given NEPA evaluation; including but not limited to:

- Advisory Council on Historic Preservation
- Army Corps of Engineers (USACE)
- Bureau of Land Management
- Environmental Protection Agency (USEPA)
- Fish and Wildlife Service (USFWS)
- Forest Service
- National Marine Fisheries Service (NMFS)
- National Park Service
- Natural Resources Conservation Service of U.S. Department of Agriculture
- Tribal Consultation

Indeed, the NEPA process requires the lead agency to coordinate extensive reviews, documentation and analysis with other federal agencies including the ones listed above, as well as various state regulatory and review agencies. One of the challenges for project sponsors is to align all the different agency approvals that are needed for a project.

In addition to the NEPA process, the project sponsor/operator will need to complete separate environmental federal permit processes or analyses, as the final version of the project may warrant. CEQ's NEPA regulations require a draft EIS to "list all Federal permits, licenses, and other entitlements which must be obtained in implementing the proposal."[8]

The CEQ has formally sought to streamline the NEPA process, and in 2011 it issued a Memorandum for Heads of Federal Departments and Agencies that touted the benefits of "integrating environmental reviews, coordinating multi-agency or multi-governmental reviews and approvals ..."[9] CEQ regulations encourage agencies to integrate these multiple reviews into a single, comprehensive EIS that is prepared concurrently and integrated with the requirements of other federal environmental laws.[10] Several agencies have issued guidance[11] on how to accomplish such streamlining with regard to substantive (and not merely procedural) environmental laws. But multi-year approval processes remain the norm and delay perpetuates the bottlenecks and inefficiencies that impede competitiveness and cause pollution.

C. Federal Review and Permitting in Action

There are a multitude of statutes, implementing regulations, agency policies, and court decisions that affect what permits are required on construction projects, what agencies look for during a permitting process, and what activities or discharges they can authorize. Duplicative environmental reviews and permits are often required on the same project by federal, state, and local governments. A builder of infrastructure must seek approval not from "the government," but from a dozen or more different arms of the government.

The process of issuing a federal environmental permit almost always involves a complex web of related permissions, approvals and certifications that are all interdependent. For example, if the USACE determines that a project requires federal authorization under a CWA Section 404 permit before it can proceed, the project sponsor/operator can expect a lengthy and costly process during which a host of separate agencies will enter the fray: the USFWS (and/or the NMFS) will likely be engaged through consultation on endangered species or essential fish habitats; the state environmental agency will be involved pursuant to the Section 401 water quality certification process; other state historic preservation offices may be involved depending on their role in their respective state and the nature of the project; the pertinent tribal government is involved if any tribal leads or interests are impacted by the project See Section V – At-A-Glance Look at the CWA 404 Individual Permit Process and 'Chokepoints.'

Looking just at the federal environmental permitting scheme, in addition to the potential need for Section 404 permit coverage, a manufacturing or stationary-source plant would likely also need the following permits from the USEPA:

- National Pollution Discharge Elimination System (NPDES) permit under the Clean Water Act;
- Title V Clean Air Act operating permit for a "major source" of pollutants (certifying compliance with the applicable requirements of their permits at least annually);
- New Source Review and Prevention of Significant Deterioration Clean Air Act permit prior to construction to ensure that the anticipated "release of pollutants [does not] exceed federal standards for the region;"
- Additional CWA and CAA permits may apply – as well as Safe Drinking Water Act, RCRA and EPCRA requirements – depending on the types of materials the manufacturing facility uses and the waste streams it generates.

D. Federal Review and Permitting Costs

The cost to prepare an EIS is often borne by project sponsors. For public projects, this means the government and, ultimately, taxpayers.

- Per a National Association of Environmental Professionals (NAEP) review of the 194 EISs published in 2015, the average time to complete an EIS was five years and only 16 percent were prepared in two years or less.[12]
- A U.S. Government Accountability Office (GAO) report stated that the average completion time for an EIS in 2012 was 4.6 years.[13]
- Between 2003 and 2012, the U.S. Department of Energy paid consultants an average fee of $6.6 million, and as much as $85 million, to prepare EISs.[14]

The opportunity cost also can be significant:

- The 2015 report by Common Good, a non-profit government watchdog, finds that a six-year delay in starting construction on public projects costs the nation more than $3.7 trillion in lost employment and economic gain, inefficiency, and unnecessary pollution.[15]
- Delay also dramatically increases the cost of construction.
- That projected total is more than double the $1.7 trillion needed through the end of this decade to modernize and upgrade the crumbling U.S. infrastructure, according to projections of the American Society of Civil Engineers.

The procurement process for large projects is moving to design-build. These procurements expedite construction; however, these efficiencies may be offset by lengthy procurement processes.

- A $1.3 billion procurement of a 60-mile segment of high speed rail took 15 months from RFQ (request for qualifications) to award.
- A $860 million procurement of a 30-mile tollway took 21 months from RFQ to award.
- An RFQ for a $1.3 billion procurement for a reconstruction of a highway in a major city has spanned over two years and has yet to award.

III. General Recommendations to Improve Federal Review and Permitting Efficiency

A. Streamlining Reforms in Current Law Have Limited Applicability; Fail to Mandate Schedules

Currently the environmental streamlining reforms in current law have limited application and, in some cases, miss the mark. MAP-21 (The Moving Ahead for Progress in the 21st Century Act),[16] the Water Resources Reform and Development Act (WRRDA) of 2014,[17] and the FAST Act (Fixing America's Surface Transportation Act) included a great deal of new authority designed to streamline project review and approval. See Appendix 1: Expedited Environmental Review of Infrastructure Projects – FAST-41 Highlights. **Still, more reforms are needed, and on a more comprehensive basis, to improve our delivery of important infrastructure projects across the nation.**

REFORM: Rather than creating brand new processes, Congress should expand the meaningful reforms included in Title 41[18] of the FAST Act (FAST-41) (coordinated and time-limited environmental review and permitting schedule and enhanced procedural transparency) more broadly so that they cover more projects (i.e., projects with total investment of LESS than $200 million). FAST-41's definition of "covered project" leaves room for confusion and does not include most federal transportation projects or federal water resource development projects – see Appendix 1. What is more, the language appears to give developers the option not to participate in the new process: Infrastructure projects may be become "covered projects" under FAST-41 only after the project sponsor submits "an initiation notice for inclusion" under the Act.[19] To expedite the delivery of projects, Congress should ensure that the "streamlining" process applies to all NEPA reviews for the "construction of, and infrastructure for" federally funded infrastructure projects.

A significant deficiency with the FAST-41 language is that the "deadlines" are flexible and non-binding. FAST-41 does not set specific review/permitting schedules.[20] FAST-41 sets a 180-day window for a

federal agency decision on an environmental review or authorization – starting from the date the relevant agency receives all information needed to complete the review.[21] But the law gives agencies discretion in determining when they have sufficient information to make a decision on a project. Therefore, time limits are likely to fluctuate if an agency determines more information is needed or demonstrates a reason for missing the completion date (theoretically an agency could continue to ask for more information and/or propose alternative completion dates). See Appendix 1: Expedited Environmental Review of Infrastructure Projects – FAST-41 Highlights.

MAP-21 addressed environmental delays in the delivery of federal-aid transportation projects. Specifically, the law requires federal agencies to act on a decision to issue any permit, license, or approval within 180 days of either the lead agency's final NEPA decision or the receipt of the application by the participating agency, whichever is later. Failure to meet the deadline established in MAP-21 will result in financial penalties to the offending federal agency.[22] For complex projects, MAP-21 requires the U.S. Department of Transportation to provide additional technical assistance to establish a schedule for completing permits, approvals, etc., within four years of formal announcement of intent to prepare an EIS, as defined in CEQ NEPA regulations at 40 C.F.R. § 1508.22.[23]

REFORM: Congress should strengthen the time-limited schedules in FAST-41 to make them truly mandatory. Any objections that are not raised or resolved within a definite timeframe should be waived and the procedure deemed complete --- and you would move on to the next step. There should also be a hard deadline for the completion of NEPA review. (For example, the RAPID Act[24] proposed deadlines of 18 months for an Environmental Assessment (EA) and 36 months for an EIS.) An action-forcing mechanism should deem a project approved within a definite timeframe. Also, consider a broader application of MAP-21's provision that imposes financial penalties on agencies that fail to render permitting decisions within the deadline.

B. Sequential and Duplicative Reviews Add Hurdles to Infrastructure Approvals

The current process of performing sequential and often duplicative environmental reviews and permits on the same project – performed by all levels of government following the NEPA approval process – is presenting massive legal hurdles to infrastructure approvals. A builder of infrastructure—whether a contractor or government agency—must seek approval not from "the government," but from a dozen or more different arms of the government. According to bonding companies that finance large public works projects, two environmental approvals are critical in rating a project's risk for bond financing. Those are the NEPA review (1,679 days, on average, to complete an EIS) and Clean Water Act (CWA) Section 404 permit authorization (788 days, on average, to obtain an individual permit). Obtaining these approvals prior to bonding greatly reduces risk and achieves a higher bond rating to the benefit of the project sponsor.

FAST-41 requires that state and federal permitting reviews run concurrently for a "covered project" so long as doing so does not impair a federal agency's ability to review the project.[25] The law does not specify the permits and approvals required to be included in the schedule. Again, as stated above, there is no penalty or regulatory consequence for missed deadlines. MAP-21 directs cooperating agencies to coordinate and carry out activities concurrently, instead of sequentially, and in conjunction with the NEPA review, and expanded the use of categorical exclusions.[26] (Notably, the "concurrent review"

requirement under MAP-21 is waived if it "would impair the ability" of any agency to conduct any analysis or meet any obligation.) WRRDA similarly requires agency coordination and concurrent action on environmental reviews to accelerate project delivery.[27]

REFORM: Several states have merged their NEPA and CWA Section 404 permitting processes; this should be the national standard and the Corps' current regulations already point in this direction but do not go far enough.[28] (Across the nation there is considerable variation in the usage and emphasis of merger processes.) In an integrated process, the project sponsor would submit the 404-permit application to USACE simultaneously with the publication of the draft EIS. USACE would be required to issue the 404 permit at the end of the NEPA process based on the information generated by NEPA.

Both the NEPA and Section 404 processes involve the evaluation of alternatives, the assessment of impacts to resources, and the balancing of resource impacts and project need. Conducting two processes simultaneously (or allowing the former to satisfy the latter) would greatly expedite project decision-making and avoid duplication and process inefficiencies.[29] NOTE: The federal funding agency should assume a lead role in shaping the project "purpose and need" and "range of alternatives" during the NEPA review. To simplify the review process, and reduce the potential for impasses over minor changes, Congress should modify any existing requirements for lead agencies to obtain participating agencies' "concurrence" in project schedules or the adoption/use of "planning products."[30]

More generally, it should be a requirement for all government agencies involved in the issuance of a federal permit for any given project to complete concurrent reviews (in conjunction with the NEPA review process) within established time periods. From the perspective of the permit applicant, a coordinated concurrent review under all major federal and state authorities avoids duplication and delays and helps to avoid potentially conflicting permit conditions or limitations (e.g. differing mitigation requirements). There must be timelines and deadlines for completing the environmental permitting process as well as NEPA review deadlines (see above).

C. Redoing Permit Documentation and Analyses Wastes Time and Money

Time and money is wasted on redoing project analyses and reviews and on collecting duplicative information from permit applicants. Challenges with environmental documentation and permitting processes are root causes for delays on infrastructure projects. The environmental permit approval process generally entails sequential reviews by multiple agencies and various requests for project-specific information. Even though each agency has slightly different forms and different information requirements, some of the information (like project descriptions) is duplicated across applications. This means that there can be multiple forms requesting the same information in different ways.

MAP-21 allows the use of errata sheets, rather than rewriting the draft EIS, when minor modifications are needed in a final EIS. Also, the lead agency should use a single document for the final EIS and ROD, as much as possible, unless there are substantial changes or there are significant new circumstances or information changes.[31] By preventing the needless production of multiple additional documents, MAP-21 significantly reduces the amount of time involved in EISs. MAP-21 also encourages the use of "programmatic" mitigation plans [32] and makes it somewhat easier to use previous planning work to meet NEPA requirements.[33] Notably, MAP-21 also calls for the lead agency to develop a NEPA ROD that

is sufficient to satisfy any other federal approvals/permits that the project may require; however, the duty to use a "single document" is void if its use would be impracticable (e.g., impair the ability of any federal agency to conduct needed analyses or meet any obligations.)[34]

REFORM: The monitoring, mitigation and other environmental planning work performed during the NEPA process, and included the final EIS/ROD, must satisfy federal environmental permitting requirements, unless there is a material change in the project.[35] Implement an integrated "one-stop" permitting system by creating a single form that collects all information needed for major permits. That way, applicants only need to provide information once (and to fill out one long form and file it once). Also, build an online database of technical information (e.g., on distributions of endangered species, critical habitat, or previous permit requirements) so that new information does not have to be gathered anew for every project operating in a similar watershed or geographic area. Allow environmental reviews to adopt material from previously completed environmental reviews from the same geographic area. Require federal agencies to use regional- or national-level programmatic approaches for authorizations and environmental reviews, for frequently occurring activities as well as those activities with minor impacts to communities and the environment.[36]

D. Environmental Justice and "Not in My Backyard" (NIMBY) Principles Are Being Used to Stop Infrastructure Growth

As our communities get more crowded and congested, it has become more difficult to site major facilities for transportation, waste management, water supply, sewage treatment, mass transit, manufacturing, energy, etc. The transition to a more sustainable, renewable resource based economy requires new water infrastructure, coastal resiliency projects, mass transit and other types of development.

REFORM: The public at large (government officials, community groups, builders/developers) is provided meaningful opportunities to participate in the environmental review process. In addition, federal agencies must consider environmental justice in their activities under NEPA and in issuing permits.[37] Environmental justice should not be a legal basis for challenging RODs or approved environmental permits.

E. Citizen Suits Are the 800-Pound Gorilla

Citizens are famously litigious in attempting to impede government approvals of development or to control land use. All federal environmental statutes, except the Federal Insecticide, Fungicide, and Rodenticide Act, allow "any citizen" to bring a "civil action on his own behalf" against "any person" (including the government) who is alleged "to be in violation" of a standard or order issued under the statute. While NEPA does not have a citizen suit provision per se, an agency's failure to follow NEPA's required procedures can be challenged under the Administrative Procedures Act.

Even on projects where an EIS is not required, officials spend years "working through every detail" for fear of being sued sometime in the future.[38] There is a high rate of turnover among the government career staff carrying out the NEPA procedures, and it is not uncommon for the new person on the team to "waste" $50,000 in printing fees and many months redoing documents just to make minor edits (e.g.,

date changes). Still, private plaintiffs who seek to delay or halt a controversial construction project will file a lawsuit against the government alleging noncompliance with the NEPA procedures or against the project owner or operator for an alleged failure to comply with (or secure coverage under) and environmental permit. **Many lawsuits begin with an injunction requiring immediate stoppage of work and may take considerable time, effort and cost in attorney fees and court costs to resolve.**

> **EXAMPLE:** When Maryland, Virginia and the District of Columbia agreed that the Woodrow Wilson Bridge (I-95 between Oxon Hill, Maryland and Alexandria, Virginia) *needed to be replaced and widened*, a long and detailed EIS process had to be followed, even though the proposed new (and wider) bridge was replacing an old and inadequate crossing. Once the EIS was complete, the Sierra Club filed suit in federal court for the District of Columbia to remand the document for more work, and Sierra won at the district court (trial court) level, but the trial court's remand was reversed by the U.S. Court of Appeals for the District of Columbia. All of this litigation took several years to complete.

As currently written, the FAST Act's judicial review changes are limited and not likely to provide significant relief. FAST-41 reduced the statute of limitations for NEPA challenges from six to two years to provide more certainty for applicants; however, most NEPA lawsuits already are filed well within two years, because project challengers generally want to sue before the targeted project is constructed to avoid mootness arguments. FAST-41 also provides that in any action seeking a temporary restraining order or preliminary injunction of a covered project, the court shall "consider the potential effects on public health, safety, and the environment, and the potential for significant negative effects on jobs resulting from an order or injunction" and shall not presume that such harms are reparable. However, most courts already consider an injunction's negative impact when balancing the harms and equities. Another FAST-41 provision dictates that NEPA challenges can only be brought by those who commented on an EIS and did so with sufficient detail to put the lead agency on notice of the claims. With regard to standing, many courts have limited NEPA challenges to comments raised within the public review period on the EIS (others allow plaintiffs to file suit as long as they can show "injury in fact").

MAP-21 reduced the time limit to 150 days after publication of a notice in the *Federal Register* announcing that a permit, license or approval is final, for parties to file lawsuits that challenge agency environmental decisions regarding surface transportation projects.[39] However, the preparation and announcement of a "supplemental" EIS, when required, restarts to 150-day clock.

REFORM – Part 1: Further shorten and standardize the statute of limitations for challenges to final ROD or claims seeking judicial review of a permit, license or approval issued by a Federal agency for an infrastructure project (see Section III.A and III.B). The Portman-McCaskill Senate bill, Federal Permitting Improvement Act, that was reportedly supported by environmental and business groups would have lowered the statute of limitations from six years to 150 days for all major projects across all sectors. In addition, interested parties should be forced to get involved early in a project's review process to maintain standing to sue later (RAPID Act proposed a "get-in or get-out" rule). Eliminate the risk of being sued when you reopen the ROD for minor changes to the construction contract. Another way to control the litigious environment that is delaying (and often stopping) critical infrastructure work may be to require any party who brings a challenge against a project's final EIS/ROD, and causes the work to stop, to put up a bond[40] that covers the cost of delay; legal fees also should be awarded if the project proponent prevails.

REFORM – Part 2: Federal environmental rules and regulations that apply to construction site owners and operators are complex and cumbersome and should be enforced only by trained staff of government agencies. Alternative potential reforms include: limiting citizen suit penalties to violations of objective, numeric limitations rather than subjective, narrative standards; extend "notice period" beyond the current 60 days (giving regulatory agencies more time to review notice of intent letters and initiate formal actions); clarify definition of "diligent prosecution" of alleged violations, thereby allowing federal/state authorities to exercise their primacy in enforcement and preventing unnecessary citizen suit intervention.[41]

F. Permitting Risk Remains Key Barrier to Infrastructure Investment

Over the past 15 years, the growth in the use and performance of alternative contracting methods procurement of large projects has brought to light some specific environmental risks that need to be addressed when design-build is used as the project delivery system. Regarding risk, it is customary for the contractor to take on additional reasonable cost and schedule risk related to design, utility relocation and environmental compliance. (Reasonable risks are those that can be quantified for cost and time, where contractual compensation is provided to contain risk or for which insurance coverage can be obtained.) However, recently design-build agreements have included unquantifiable contractor risk, such as for managing and remediating pre-existing third party site contamination.[42] This has resulted in the contractor assuming unreasonable cost and schedule risk, and in the case of site contamination, potential CERCLA liability. Since this risk is unquantified, insurance coverage is difficult if not impossible to obtain.[43]

Owners and contractors respond to this risk through the contract vetting process during the procurement stage where the contractor attempts to clarify through a question/answer process to gain owner approval for amendments to mitigate risk. This process usually generates multiple contract addendums causing a protracted and costly procurement process. The contractor addresses any remaining unreasonable/unquantifiable risk by adding cost contingencies resulting in higher construction costs to the owner or responsible contractors dropping out of the procurement process due to excessive risk.

Compounding this uncertainty is the lack of testing data to accurately characterize contamination for disposal, which forces the contractor to speculate on remediation requirements. Contractor responsibilities for managing and remediating and arranging for transport of contaminated materials creates exposure to long-term CERCLA liability.

REFORM: Where the public owner is unwilling to compensate the designer/builder for unforeseen events or circumstances, particularly related to encountering hazardous materials, negative consequences follow: limited universe of competitive bidders because some will walk away from such extreme risk scenarios; shut out of highly-qualified, environmentally-sophisticated firms; inflated contract prices because bidders are pricing risk into the contract that is going back to the owner (and ultimately being borne by the taxpayer).

Government is in the best position to bear the following risks:

- Environmental risk associated with unforeseen hazardous material that was not disclosed pre-bid; and

- Environmental risk associated with finding out after the contract has been awarded that a part of the project site, or any property or waterbody to which the project site drains runoff, is a newly-listed "Superfund" site.

On all federally funded projects, Congress should: 1) prohibit the transfer of CERCLA liability for pre-existing contamination to the contractor by requiring the public owner (e.g., Departments of Transportation (DOT)) to retain generator and arranger status and 2) require the public owner (e.g., DOT) to provide contractual relief through cost sharing mechanisms, such as allowances and schedule relief through delay clauses that compensate the contractor for responding to site contamination.

IV. Recommended Reforms Specific to the NEPA Process

A. NEPA Process Issues Compromise Efficient Delivery of Infrastructure Projects

1. Initiating Design-Build or P3 Procurement Prior to Conclusion of NEPA Process Drives Up Cost

In the case of highway work, state DOTs often will initiate the proposal process before they have a finalized NEPA Record of Decision.[44] The costs of pursuing these projects is inflated when general contracting firms (taking both design and construction responsibility) are brought in before NEPA is complete. Design-build procurements for large projects are costly. Owner costs include fees for legal counsel, technical and procurement consultants. The contractor incurs costs as he advances the project design from the schematic stage (provided by the owner) to a preliminary design for cost estimating, performs value engineering, reviews the voluminous owner references and contract documents, and engages fully in the contract vetting process. Procurement delay of six to 12 months due to NEPA issues is not uncommon. This delay extends overhead, labor and consultant costs to owner and contractors and is particularly costly to contractors because the level of effort remains steady due to continuation of the contract vetting process, continued release of owner documents, and redesign in response to evolving owner expectations. Procurement delay results in owners and contractors absorbing substantial added procurement costs. [These costs are lost should a NEPA challenge effectively force reopening the NEPA process for additional study. Addressing court-ordered NEPA revisions typically takes one or more years to complete and usually results in termination of the procurement process, or the owner terminating the contract and compensating the contractor awarded the work for mobilization and delay costs. Owners, upon satisfying court order NEPA requirements, initiate a new procurement process from the beginning.]

Under the Federal Highway Administration (FHWA) regulations, prior to NEPA completion, a private design-build contractor cannot complete the final design or proceed with construction (23 C.F.R. § 636.109(b)). If the contracting agency awards a contract prior to NEPA completion, FHWA's authorization and obligation (of preliminary engineering and other pre-construction funds) is limited to preliminary design (23 C.F.R. § 636.109(b)(1)) and early acquisition of the right of way in accordance with 23 U.S.C. § 108. The contract must include termination provisions if the NEPA process concludes by selecting the "no-build" or "no action" alternative (23 C.F.R. § 636.109(b)(9)).[45]

REFORM: For projects involving "federal action," the project sponsor should not initiate procurement until the ROD is issued that closes the NEPA process. Such a change will substantially decrease procurement costs and increase the integrity of the NEPA process by removing any notion that the NEPA outcome was pre-determined. Another means to reduce owner and contractor costs would be to simplify the procurement process by standardizing the design-build agreement for federally funded projects. Owners incur sizable legal fees for outside counsel and consultants to draft, contractor vet and re-draft design-build agreements for each project. Contractors incur high legal and staff costs as well in the vetting process.

2. Even Minor Construction Changes Cause Major Delay When It Re-Opens NEPA; Stifling Private Sector Innovation

Even minor changes or adjustments to the project design or location – such as small additions or changes to right-of-way, small temporary or permanent easements or drainage pond features to accommodate schematics – will trigger another round of lengthy coordination at the federal and state level and public review and possibly a supplemental EIS. It is common for the project limits, as defined during preliminary design and used to establish the NEPA project foot print, to be inadequate to accommodate all project aspects – such as drainage features, utilities and construction access. Therefore, minor changes to the NEPA footprint are required to construct the project. Because of the overarching fear of litigation brought by advocacy groups alleging noncompliance with NEPA's procedural requirements, agencies are overzealous in producing a "litigation-proof" EIS. This attitude results *not just* in the over documentation of minor changes (that should not trigger NEPA), but it also impacts value engineering the contractor performs during a design-build procurement by stifling innovation of design changes capable of capturing larger cost savings.

Per FHWA regulations, under no circumstances may a private entity have any decision-making responsibility in the preparation of any NEPA document (23 C.F.R. § 636.109(b)(6)). After the NEPA process is complete, project sponsors may only accept alternative technical concepts (ATCs) if they do not conflict with the criteria agreed upon in the environmental decision-making process. (23 C.F.R. § 636.209(b)). This also is hindering project sponsors' ability to take advantage of private sector innovation.

REFORM: Minor changes to a project should NOT result in reevaluation of the project under NEPA. *De minimis* impacts do not need a formal reevaluation, but could do a review with the owner to prove *de minimis*. The *de minimis* threshold could be based the definition of Section 4(f) properties codified in 49 U.S.C. § 303 and 23 U.S.C. § 138, as implemented by the Federal Highway Administration (FHWA) through the regulation at 23 C.F.R. § 774. Also, amend FHWA regulations at 23 C.F.R. § 636109(b)(6) and 23 C.F.R. § 636.209(b). In addition, if the project sponsor accepts a change (i.e., ATC) as proposed by the designer/builder, and it results in project delay, due to the need for further environmental reviews, then the costs associated with that delay should be equally shared by the owner and the general contractor.

B. Inefficient Bureaucratic Processes Force Reevaluation of Previously Approved NEPA Documents, Decisions

A final EIS is only valid for up to three years following the last major approval. If no action to advance the project has occurred in the last three years, a *written reevaluation* is required. This may be a case where a project has been "shelved" due to lack of funding or simply put aside due to changes in statewide or regional priorities.[46] The scope and breadth of the reevaluation generally is dependent on: the type and degree of public controversy, possibility or reality of litigation, and the original and anticipated types of environmental resources and project impacts.

REFORM: Congress should require agencies to report to congressional committees on the expiration of various environmental reviews/permits. Projects that have completed environmental reviews should be prioritized for federal funding. An adequate source of funding should be available before a public sponsor initiates any environmental reviews or studies. In addition, to avoid inefficiencies and costly delays, it is imperative that the environmental reviews (see related reform recommendations Section III.A) and permitting processes (see reforms in Section III.B) for capital projects be time-limited.

C. Disagreements Loom Over Role Coordinating Agencies Play in NEPA Process

Some projects are held up by the push-and-pull between the lead agency and the other coordinating agencies regarding the scope of decision-making authority afforded to individual agency leaders.

REFORM: Even with the positive reforms of the FAST-41 (see Section III.A), there remains a failure to delineate clear decision-making authority; rather, recent changes create more processes rather than empowering key decision-makers to move projects forward. Congress should: (1) empower CEQ to really make decisions and (2) empower the Office of Management and Budget (OMB) to resolve disputes.[47]

D. USEPA Plays Commanding Role in NEPA Review Process

Section 309 of the Clean Air Act empowers **USEPA to review other federal agencies' EISs and to make those reviews public**.[48] USEPA's reviews generally focus on identifying and recommending appropriate mitigation measures for the project, which can lead to lengthy back-and-forth negotiations between USEPA and the responsible federal agency(ies). If USEPA finds the draft EIS "inadequate," USEPA will recommend the draft EIS be formally revised and made available for a second period of public comment. USEPA also reviews final EISs to ensure that the lead agency has taken USEPA's comments into account. If the "lead agency" does not make sufficient revisions (and USEPA finds the project to be environmentally unsatisfactory), USEPA may refer the matter to CEQ for mediation.[49]

Notably, USEPA plays a very powerful role in the NEPA review process during project development by serving as a formal "cooperating agency" (see Section II above) and by providing wide-ranging review and comment on EISs and other federal NEPA related activities. USEPA also has veto authority for CWA Section 404 permit process and may elevate specific cases for further evaluation culminating with the Assistant Administrator of the USEPA and an Assistant Secretary of the Army (see Section V.C below).

REFORM: A 180-day "deadline" should apply to all USEPA Section 309 reviews.[50] USEPA should be required to participate in all meetings as requested by the lead agency. CEQ should have the power to ultimately resolve any disputes (including those referred by other departments or agencies).[51] In addition, CEQ should issue guidance to delineate the scope and parameters for USEPA's Section 309 reviews to ensure consistency across USEPA Regional Offices. Key points related to information/data:

- Request only information that is relevant to better decision-making
- Be realistic about the availability of data
- Agree at scoping (or earlier) on the tools for analyzing impacts

E. Agencies Struggle with Climate-Change Impacts Analyses

Federal agencies are – and will continue to – struggle with the level of analysis required when assessing climate-change impacts under NEPA. On March 28, 2017, President Trump released an "Executive Order on Promoting Energy Independence and Economic Growth" that effectively rescinds CEQ's Greenhouse Gas NEPA Guidance – "Final Guidance for Federal Departments & Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate."[52] However, the President's Order does not remove the need for agencies to consider climate change in NEPA reviews.

Agencies and courts reviewing agency actions have long struggled with precisely how to address climate impacts. Some agencies include quantitative calculations, some provide only qualitative and other still decline to include any analysis on a project-level basis (on the basis that climate change is a global phenomenon. Plaintiffs challenging agency NEPA analysis will continue to pursue claims that analysis of climate impacts was not done in sufficient detail, or not at all. Courts will remain the driver here, and thinner administrative records could be more vulnerable to NEPA-based challenges by project opponents.

REFORM: The analysis of climate impacts will always vary by agency and by project. It is not clear what level of "hard look" is sufficient, particularly because climate change is a global phenomenon. A court-by-court standard on how to address climate is not conducive to efficient project reviews.[53] Congress should prohibit climate change reviews in NEPA environmental assessments and impact statements.

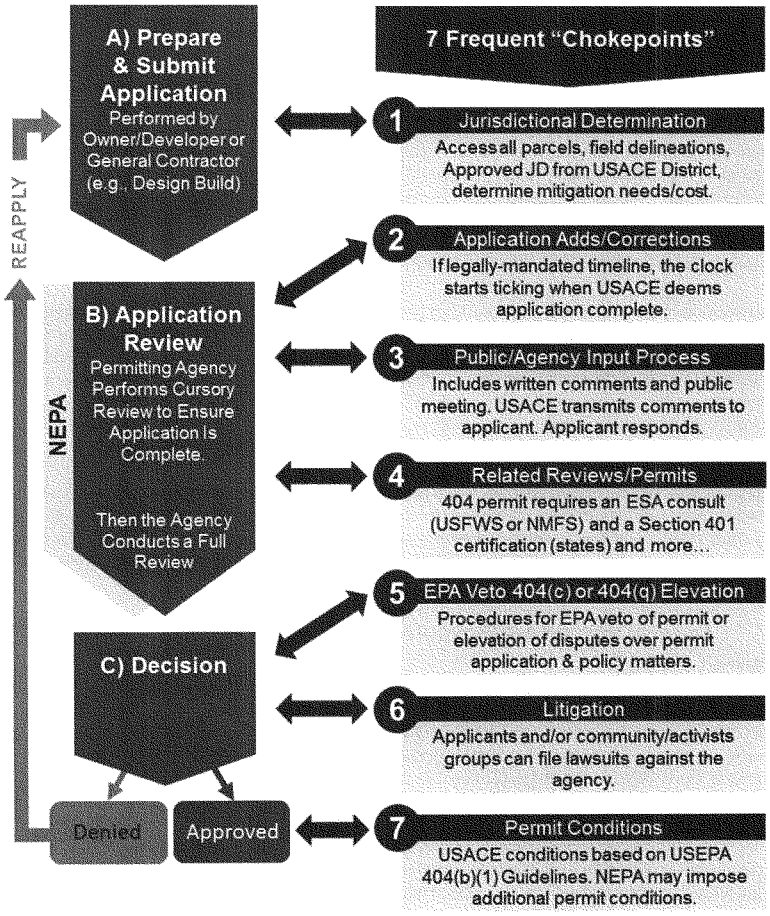
V. Federal Permitting Example: The Clean Water Act Section 404 Permit Process

Projects that cross wetlands, streams and other features deemed "Waters of the United States" (WOTUS) generally require U.S. Army Corps of Engineers (USACE) permits and must mitigate their impacts under the Clean Water Act (CWA) Section 404. Since the 2006 U.S. Supreme Court *Rapanos* decision, the USACE (and USEPA) have been asserting jurisdiction over any wet areas that have a "significant nexus" to downstream navigable waters.[54] This test has been met with very little nexus or significance between the actual wetland at issue and navigable waters.

The average applicant for an individual permit spends 788 days and $271,596 to complete the process.[55] (And if the process is beginning with an EIS, it may take three to six years (or longer) until the

environmental reviews are complete. See Section II.D above.) Following are details of the various chokepoints the project proponent may encounter during the permit issuance process.

A. At-A-Glance Look at the CWA Section 404 Permit Process



B. 'Chokepoint' Details in CWA Section 404 Individual Permit Process

Following is a description of the various chokepoints the project proponent may encounter during the permit issuance process.

1. *Jurisdictional Determination*

For public design-build (or P3) construction projects – where the government is placing responsibility on the general contractor for environmental permitting – it is increasingly common for USACE to require 100 percent ground surveying and full delineation – along with field verification by a USACE District Engineer – before the Corps will issue an Approved JD (jurisdictional determination). USACE staff will not accept NEPA analysis findings. More and more, USACE will not approve 404 permit without the Approved JD and final comprehensive mitigation plan. The Corps' insistence on better delineation data is holding up the permit issuance process because the general contractor does not have access to the entire project area to perform field studies until well into the construction process (for example, approval of right-of-way acquisitions). As a result, it is impossible to manage cost/risk due to the unknowns regarding project schedule and mitigation responsibilities.

2. *Application Adds/Corrections*

Applications for major projects requiring 404 permits rarely, if ever, are processed within the time limits set forth in the standard procedures. Agencies can work around strict timelines, including being able to start and stop the clock. If the agency's decision is that an application is incomplete or denied without prejudice, the applicant will need to resubmit it, which starts a new countdown. Added together, these many sequential clocks can create a long process.

USACE's increasingly high standards for field data/delineations before it will issue a decision on an application is bringing the permitting process on some large highway projects to a standstill (see #1). Limited access on design-build projects where the contractor is required to purchase the right of way severely limits a contractor's ability to conduct field delineations in a timely manner – causing excessive delay to the project.

Deadlines also can serve as a negative reinforcement, arguing that some agency staff sit on an application until their allotted time is almost up before looking at it regardless of how minor or simple the task.

3. *Public/Agency Input Process*

Notice must also be sent to all parties who have specifically requested copies of public notices and to the appropriate officials at USEPA, the FWS, the NMFS, and state historic preservation officers. When Section 404 (or CWA 401 – see below) applications are submitted, the agencies accept public comments regarding the applications for at least thirty days. If, during the initial comment period, someone requests a public hearing regarding the applications, the agencies must issue another public notice scheduling a public hearing at least thirty or forty-five days into the future.

Public notice requirements allow project opponents another opportunity beyond NEPA to challenge and stop projects, for which (generally) no contractor relief is provided. Oftentimes, even individuals who are not directly affected by the project become involved. This is presenting an opportunity to voice tangentially related concerns, or pursue political goals or no-growth agendas, thereby forcing the

permitting agencies to spend time and resources processing these concerns that ultimately do not have bearing on their permit decision.

4. Related Reviews/Permits

When a Section 404 permit application is submitted to the USACE, the agency typically routes the application to numerous other agencies for review and comment. Section 404 permit applications are routed to USEPA, the USFWS, the state environmental agency, and the state office of historic preservation. The commenting agencies have vast and varied concerns that must be addressed by the applicant. Each requires a slightly different type of alternatives analysis, and demands a somewhat distinct conditions, limitations and mitigation approach.

If the concerns of the commenting agencies are not adequately addressed, one or more of the commenting agencies may recommend against issuance of the requested permit.

Section 404 is a single permit, but it encompasses several other authorizations in a timeline of review:

- Need CWA 401 certification from state before a federal agency can issue a permit or license for an activity that may result in a discharge to WOTUS; state must certify that activity will not violate the water quality standards, or other applicable authorities, of the state (or waive Section 401 certification). [This process, in effect, allows for state control of dredge and fill activities. A state's review of the proposed construction activity will typically address feasible alternatives to the activity, initial and secondary impacts of the proposed activity, mitigation, compliance with water quality standards, stormwater/wastewater impacts, flood management, protection of rare resources, and other factors that would affect water quality.[56]]
- May need Section 408 authorization (permission from the Corps under 33 USC 408 because project will alter or temporarily or permanently occupy or use a Corps-authorized civil works project).
- USACE consults with the USFWS and/or NMFS (Consultation / Biological Opinion) – Endangered Species Act (ESA) Section 7 consult – if project might affect endangered species. Under the ESA, any project with federal involvement or subject to federal oversight may not adversely affect federally listed species and habitat – otherwise mitigation strategies to minimize the impacts are required. With more than 1,400 species on the list and vast portions of the landscape designated as critical habitat, and many more species and areas of land awaiting listing and designation decisions, USFWS and NMFS are taking an ever-increasing role in the regulation of infrastructure projects.
- National Historic Preservation Act must account for potential impacts to historical and cultural resources (SHPO Consultation / Antiquities Permits)
- Fishery Conservation and Management Act (Essential Fish Habitat Consultations)
- Depending on location, Coastal Zone Management Act (CZMA Consistency Determination) and Wild Scenic Rivers Act
- Migratory Bird Treaty Act
- Bald and Golden Eagle Protection Act

5. USEPA Veto 404(c) or 404(q) Elevation

The U.S. Environmental Protection Agency (USEPA) has the authority to prohibit, deny, or restrict the use of any defined area as a disposal site under section 404(c), may elevate specific cases for further evaluation under Section 404(q), and enforces Section 404 provisions.

6. Litigation

Agencies are risk-averse, and sometimes choose not to pursue streamlined options out of concern that such "short-cuts" will increase litigation risk. Agencies/projects that face scrutiny from stakeholder groups want to minimize risk by gathering information, at the least to demonstrate due diligence. However, the burden of providing this political protection means asking information that applicants may not be able to obtain, or may be unwilling to share (in the case of proprietary information).

7. Permit Conditions

Section 404(b) authorizes USEPA to set the environmental standards that must be met by each permit, for the disposal of dredged or fill material; USEPA's Section 404(b)(1) guidelines set out at 40 C.F.R. § 230 establish the environmental criteria for evaluating 404 permit applications. Under the guidelines, permittees must complete an alternatives analysis describing how all the practicable alternatives to the proposed project were studied, weighed, and presumably rejected for the preferred project. The agencies regularly request more data, analyses of more sites, and/or other additional information regarding the proposed project and other (presumably) available business opportunities that the applicant could pursue in lieu of the project for which a permit has been requested. The Section 404(b)(1) guidelines also establish a "mitigation sequence" used by USACE: avoid, minimize and compensate impacts.

USEPA's guidelines often are applied in a rigid one-size-fits-all manner, failing to distinguish between different types of uses or between projects with net habitat gains—despite some damage to existing low-quality habitat—from projects that were simply destructive of habitat.

C. Recommended Reforms Specific to the 404 Program

As illustrated by the preceding "chokepoints" analysis, the *general* reforms discussed in Section III of this document would serve to improve the efficiency of the 404 program. In particular, a mandatory merger of the NEPA and Section 404 permit processes would greatly expedite project decision-making and avoid duplication and procedural inefficiencies (see Section III.B). In addition, AGC recommends the following reforms that are *specific* to the 404 program.

1. USEPA's Authority to Veto a Duly Issued Permit Casts Uncertainty on Development

Courts have upheld USEPA's authority under the CWA to change, if not revoke, Section 404 "dredge-and-fill" discharge permits that have already been approved and issued by USACE if it determines that the discharge will have an "unacceptable adverse effect" on identified environmental resources. This creates uncertainties for Section 404 permittees, their lenders, and others in business with them, which drives up financing and construction costs. USEPA has adopted regulations setting forth the process for implementing Section 404(c).[57]

REFORM: Amend CWA Section 404(c) and - as needed - direct USEPA to revise its "unacceptable adverse effect" regulations.

2. Permitting Authorities Are Thwarting Advanced Mitigation, Mitigation Banking, and Future Mitigation Investments

Permitting Authorities Are Thwarting Advanced Mitigation, Mitigation Banking, and Future Mitigation Investments. Complex procurement strategies, construction schedule risks, habitat alteration, and competition for potential mitigation sites can encumber the already difficult task of mitigating for "like" value and function and reinforce the need for project proponents to examine mitigation strategies as early as possible. There is a shortage of wetland mitigation banking credits in some parts of the country and many Corps Districts are unwilling to accept in-lieu fee arrangements. President Trump's Executive Order 13778 directing the USEPA and USACE to modify or rescind the 2015 Waters of the United States (WOTUS) is likely to stall the establishment of any new mitigation banks because it's likely that the federal government will eventually relinquish control over work in remote streams and isolated waters/wetlands.

What is more, federal permitting agencies generally will not accept preliminary jurisdictional determinations resulting from the NEPA process and will hold up project approvals until they have data collection (field surveys/delineation) from the entire project site. The project may be well underway before the design-build contractor has access to 100% of the parcels (e.g., right-of-way acquisition goes well into the project). As such, in the pursuit phase of the project, mitigation costs are unquantifiable because the quantity of WOTUS impacts and the quality of the waters impacted is unresolved. This unknown, combined with the lack of wetland bank capacity, requires contractors to speculate on mitigation costs – which can reach in the hundreds of thousands of dollars per project.

These uncertainties inhibit efforts to optimize construction phasing, schedules and to minimize cost and delay. What is more, design-build contracts that transfer the obtaining of Section 404 permits to the contractor generally provide no contractor cost or schedule relief for permitting delays or mitigation costs at the outset of a procurement. This forces contractors to add cost contingencies resulting in higher construction costs to the owner and/or responsible contractors dropping out of the procurement due to untenable risk.

REFORM: The use of remote sensing, geographic information systems (GIS) mapping software, and decision support systems for evaluating conservation strategies have made it possible to evaluate areas where WOTUS impacts must be avoided and identify areas for mitigation investments very early in the environmental planning process. Federal permitting agencies should accept NEPA planning-level decisions to support advance mitigation strategies that are both more economical and more effective from an environmental stewardship perspective. Revise the "2008 Mitigation Rule"[58] at 33 C.F.R. § 332.3(b)(2) and (3) and USACE's Regulatory Guidance Letter (RGL) 16-01 on the procedures for determining what geographic areas on a project are WOTUS.

To address the lack of mitigation banking capacity in many regions of the country, USACE should develop a national in-lieu fee mitigation option whereby sponsors of large projects may contribute funding, at mitigation market rates, to a national account when bank credits are unavailable at the time the USACE/USEPA is in position to issue the permit. The funding from the national account would be apportioned among the seven USACE Districts base on where impacts were taken and applied toward habitat preservation and promoting banking opportunities.

AGC of America
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA
Quality People. Quality Projects.

VI. AGC Staff Contacts

- Jeff Shoaf, Senior Executive Director, Government Affairs, (202) 547-3350 or (202) 215-2124, shoafj@agc.org
- Leah Pilconis, Environmental Law and Policy Advisor to AGC of America, (703) 837-5332, pilconisl@agc.org
- Jimmy Christianson, Regulatory Counsel, (703) 837-5325, christiansonj@agc.org
- Melinda Tomaino, Director, Environmental Services, (703) 837-5415, tomainom@agc.org
- Scott Berry, Director, Utility Infrastructure Division, Environment, and Trade, (703) 837-5321, berrys@agc.org
- Sean O'Neill, Director, Congressional Relations/Infrastructure Advancement, (202) 547-8892, oneills@agc.org
- Brian Deery, Senior Director, Highway and Transportation Division, (703) 837-5319, deeryb@agc.org

---

[1] Since "Waters of the United States" are under the jurisdiction of the Federal Government, projects such as constructing pipelines across rivers are a federal action.
[2] 40 C.F.R. § 1508.16.
[3] 40 C.F.R. § 1508.5.
[4] Note that some states (e.g., North Carolina, Massachusetts and Washington) have requirements that are like the requirements established for federal agencies by NEPA. Therefore, if your construction project is entirely or partly financed, assisted, conducted, regulated, or approved by a state agency in one of these states, you should consult with state agency officials to ensure that these requirements have been met.
[5] No hard-and-fast regulatory definition of "purpose and need" exists. However, as it has been interpreted, the statement cannot be so narrow that it effectively defines competing "reasonable alternatives" out of consideration. The "purpose" of an action may be a discussion of the goals and objective of an action. The "need" may be a discussion of existing conditions that call for some improvement.
[6] The draft EIS should be prepared in accordance with the scope of the project and, to the fullest extent possible, meet requirements of § 102(2)(C) of NEPA. The CEQ regulations specify requirements for inviting and responding to comments on the draft EIS. 42 U.S.C. § 4332(2)(C); 40 C.F.R. § 1503.
[7] The final EIS should respond to any participating agency comments and address any inadequacies in the draft EIS.
[8] 40 C.F.R. § 1502.25(b) (2014).
[9] Memorandum from Nancy H. Sutley, Chair, Council on Envtl. Quality, to Heads of Federal Departments and Agencies on Improving the Process for Preparing Reviews under the Nat'l Envtl. Policy Act (Oct. 2011).
[10] 40 C.F.R. § 1502.25(a) (2014). In the agency's much-cited "Frequently Asked Questions," the CEQ clarified that project proponents who will need permits under other environmental laws are to "integrate the NEPA process into other planning at the earliest possible time to [e]nsure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts." See "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 Fed. Reg. 18,026, 18,029 (Mar. 23, 1981). These FAQs have not received equal deference from courts as the CEQ regulations.
[11] USEPA's National Hardrock Mining Framework, U.S. Envtl. Prot. Agency app. C-2 and C-3 (Sept. 1997) ("NEPA offers the opportunity to identify permit conditions, including those needed to avoid or minimize impacts or to mitigate for unavoidable impacts."). *See infra* note 30.
[12] NAEP annually reports information on EIS time frames by analyzing information published by agencies in the *Federal Register*, with the Notice of Intent to complete an EIS as the "start" date, and the Notice of Availability for the final EIS as the "end" date. However, AGC members' experiences show that it's common

for large and controversial projects to take even longer than these numbers reflect. *See e.g.,* Federal Highway Administration, "Estimated Time Required to Complete the NEPA Process," online at - https://www.environment.fhwa.dot.gov/strmlng/nepatime.asp and U.S. Department of Energy, "Record of Decision (ROD)" online at https://energy.gov/nepa/record-decision-rod.

[13] U.S. Gov't Accountability Office (GAO), GAO-14-370, *National Environmental Policy Act: Little Information Exists on NEPA Analyses*, at 14 (2014).

[14] *Id. See also* 2014 GAO report noting that "there is no government wide mechanism [for agencies to track] the cost [or time] of completing NEPA analyses ... However, the Department of Energy (DOE) tracks limited cost data associated with NEPA analyses."

[15] Although large projects often take a decade or longer to permit, the Common Good report assumes that the avoidable delay on major projects is six years.

[16] Pub. L. No. 112-141, 126 Stat. 405 (2012).

[17] Pub. L. No. 113-121, 128 Stat. 1193 (2014).

[18] 42 U.S.C. § 4370(m); https://www.congress.gov/114/bills/hr22/BILLS-114hr22enr.pdf.

[19] 42 U.S.C. § 4370m-2(a).

[20] FAST Act Pub. L. No. 114-94, 129 Stat. 1312 (2015); *Id.* § 41002(c)(1)(C)(ii)(II)(aa), (bb). The final completion date in the recommended performance schedule for each category cannot exceed the average time to complete an environmental review or authorization for projects within that category. The benchmark time periods for decisions on environmental reviews and approvals are to be calculated based on an analysis of the time required to complete them for projects within the relevant category of covered projects during the preceding two calendar years.

[21] *Id.* § 41002(c)(1)(C)(ii)(II)(cc).

[22] Pub. L. No. 112-141, § 1306, 126 Stat. 405, 537-38 (2012) (creating 23 U.S.C. § 139(h)(6)). Failure to meet this deadline results in a financial penalty: rescission of funding from the relevant office at the delinquent agency at a weekly rate ranging from $10,000 to $25,000. 23 U.S.C. § 139(h)(6)(B).

[23] Pub. L. No. 112-141, § 1309, 126 Stat. 405, 539-40 (2012).

[24] Responsibly and Professionally Invigorating Development Act of 2014, S. 2641, 113 Cong. (2014).

[25] 42 U.S.C. § 4370m-4(a), paraphrased.

[26] Pub. L. No. 112-141, §§ 1305, 1314, 126 Stat. 405, 535, 547 (2012).

[27] Pub. L. No. 113-121, § 1005, 128 Stat. 1193, 1203 (2014). Section 1005 also promoted project acceleration through the following measures: encouraging the establishment of new categorical exclusions from environmental review requirements, enhancing transparency and public reporting requirements on the status and progress of environmental reviews, and facilitating the acceptance of environmental review documents approved by another agency.

[28] *See* 32 C.F.R. § 651.14(e) (2014) ("Several statutes, regulations, and Executive Orders require analyses, consultation, documentation, and coordination, which duplicate various elements and/or analyses required by NEPA and the CEQ regulations; often leading to confusion, duplication of effort, omission, and, ultimately, unnecessary cost and delay. Therefore, Army proponents are encouraged to identify, early in the NEPA process, opportunities for integrating those requirements into proposed Army programs, policies, and projects. Environmental analyses required by this part will be integrated as much as practicable with other environmental reviews, laws, and Executive Orders (40 C.F.R. § 1502.25). Incorporation of these processes must ensure that the individual requirements are met, in addition to those required by NEPA.").

[29] The "2015 (update) Red Book -- Synchronizing Environmental Reviews for Transportation and Other Infrastructure Projects" describes a process that satisfies the NEPA requirements and synchronizes environmental permitting for all agencies involved. It includes examples of successful NEPA/404 merger process agreements whereby the documentation and coordination conducted comply with NEPA and any preferred alternative selected under the joint process comply with CWA Section 404(b)(1) guidelines.

[30] *See infra* note 32.

[31] MAP-21 § 1319; 23 U.S. C. § 139(n). *See* https://www.fhwa.dot.gov/map21/guidance/guideaccdecer.cfm.

[32] MAP-21 §§ 1305, 1318 (amending 23 U.S.C. § 139(b)).
[33] The federal lead agency may adopt and use "planning products" in proceedings for any class of action in the environmental review process. "Any planning product adopted by the Federal lead agency in accordance with this section **may** be incorporated directly into an environmental... document." However, 10 conditions are spelled out in statute -- and participating agencies, the lead agency, and project sponsors must all concur that these conditions have been met. MAP-21 § 1310.
[34] MAP-21 § 1304; 23. U.S.C. § 139(d)(8).
[35] The "Environmental Consequences" section of the EIS describes the impacts of project alternatives on the environment and documents the methodologies used in evaluating these impacts. Information in this section is used to compare project alternatives and their impacts. This section should describe in detail both the impacts of the proposed action and the potential measures that could be taken to mitigate these impacts. Mitigation must be considered for all impacts, regardless of their significance. Environmental impacts should be discussed in terms of their context and intensity.
[36] In late 2016, FHWA and the U.S. Fish and Wildlife Service developed and deployed a first of its kind Rangewide Programmatic Consultation for the Indiana and Northern-long eared bat.
[37] To meet the requirements of the Environmental Justice (EJ) Executive Order (EO) 12898, the DOT Order 5610.2(a), and the FHWA revised EJ Order 6640.23A, a project involving Federal action must consider the potential for "disproportionately high and adverse" effects on minority and low-income populations. CEQ has guidance for agencies on how to address environmental justice under NEPA: https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf. In addition, USEPA has guidance affirming its commitment to consider EJ in environmental permitting: http://www.epa.gov/environmentaljustice/plan-ej/permitting.html.
[38] A project sponsor is generally mindful of previous judicial interpretation when preparing NEPA documentation in an attempt to prepare a "litigation-proof" EIS. CEQ has observed that such an effort may lead to an increase in the cost and time needed to complete NEPA documentation, but not necessarily an improvement in the quality of the documents ultimately produced. Council on Environmental Quality, "NEPA Study of Effectiveness After Twenty-five Years," p. iii.
[39] MAP-21 § 1308; 23 U.S.C. § 139(l).
[40] Possible bonding calculation methods/factors to consider: (i) Transportation agencies typically assess liquidated damages based on "end user cost," per hour or per day. (ii) DOTs and FHWA have a good understanding of their assigned project teams daily overhead and engineering costs to maintain the team during delays – this cost could be calculated on a per day basis. (iii) If a contract team is already under contract, there is usually a daily rate for the jobsite overhead costs. (iv) It may also be appropriate to consider the costs associated with a state acquiring specific project funding through a public bond. (v) And, finally, the loss of federal funds committed and not used within the determined funding period. These cost factors could be combined, based on the project and the impact of delays.
[41] All environmental statutes which authorize citizen suits bar such suits if the federal or state government is "diligently prosecuting" an action against the same violator. *But see Yadkin Riverkeeper, Inc. v. Duke Energy Carolinas, LLC*, Case No. 1:14-cv-753 (M.D.N.C. Oct. 20, 2015) (a government enforcement action must not only be brought, but also managed, in good faith, to be a compliance bar to a CWA citizen suit).
[42] Recently, more owners are attempting to transfer this risk to the contractor through provisions that limit the contractor's compensation for "unknown" contamination (i.e., any contamination not disclosed by owner or reasonably ascertainable by contractor due diligence). Disclosures normally contain a Phase I ESA that includes a federal, state and local regulatory database search that lists and provides cursory information addressing all recorded site contamination within and adjacent to the project. This places the contractor on notice of every documented occurrence of contamination, such as reportable spills.
[43] Contamination risk is often unquantifiable, due to inadequate site investigation/testing data provided by the owner, or unavailable through contractor due diligence. Sampling and testing areas of suspect contamination within the proposed project right-of-way may be the only means to reasonably assess these

risks. Owner testing (if it's even performed) is often limited and inadequate to allow the contractor to adequately and reliably price his risk or obtain insurance.

[44] In 2007, FHWA issued a final rule revising FHWA's regulation in 23 C.F.R. §§ 630, 635, and 636 for design-build contracting. The rule allowed contracting agencies to issue design-build RFPs, to award contracts, and to issue notices-to-proceed for preliminary design work prior to the conclusion of the NEPA process.

[45] The contract must also include provisions preventing the contractor from proceeding with final design or construction activities prior to the completion of the NEPA process (23 C.F.R. § 636.109(b)(3) and 771.113(a)). FHWA may only issue additional authorization for final design and construction once the NEPA process concludes and selects a build option (23 C.F.R. § 636.109(d)).

[46] Reevaluations are not required under the National Environmental Policy Act (42 U.S.C. § 4321) or Council on Environmental Quality (CEQ) regulations (40 C.F.R. §§ 1500-1508). They are, however, required by the FHWA/FTA regulations, (23 C.F.R. § 771.129).

[47] Unlike other environment-related statutes, no individual agency has the final say with regard to NEPA's environmental review requirements. This absence of enforcement authority is sometimes cited as the reason that litigation has been chosen as an avenue by individuals and groups that disagree with how an agency meets NEPA's mandate or EIS requirements for a given project. (For example, a group may charge that an EIS is inadequate or that the environmental impacts of an action will in fact be significant when an agency claims they are not). Currently, CEQ is charged with providing oversight and guidance to agencies with regard to EIS preparation. USEPA is required to review and comment publicly on the environmental impacts of proposed federal activities, including those for which an EIS is prepared. EPA is also the official recipient of all EISs prepared by federal agencies. However, neither agency has enforcement authority with regard to an agency's environmental review requirements.

[48] 42 U.S.C. § 7609(a).

[49] *See* CEQ's regulations at 40 C.F.R. § 1504.

[50] Pursuant to USEPA's revised guidelines on NEPA reviews, since October 2012 the agency has accepted electronic EIS filings only – using e-NEPA, an online system for submitting EISs in .PDF format. This paperless process should facilitate a faster review and response timeline.

[51] *See* supra note 15. The head of the department or agency must make the referral to CEQ within 25 days after the notice of availability of the FEIS (final Environmental Impact Statement). CEQ determines whether to take the referral based on several criteria, including a determination of whether the issue is of national importance. If the CEQ takes the referral, several options currently are available for resolution, including making recommendations to the President. The most typical outcome is the publication of Findings and Recommendations. The referral process focuses on the underlying proposed action and how it does/does not meet the policy goals of NEPA, rather than procedural compliance with NEPA.

[52] NEPA requires an assessment of the impact on the environment of a proposed Federal action including rulemakings, permitting, overarching programmatic decisions, and specific projects – including some construction projects. The August 2016 guidance, which the White House has rescinded, encouraged agencies to quantify direct and indirect GHG emissions for construction projects (and other actions) where NEPA applies, as well as, short-term and long-term effects, cumulative effects and impacts from connected actions—as well as for all the alternative options being evaluated, including the option of taking no action.

[53] *See e.g., Wild Earth Guardians v. Jewell*, 2015 WL 4886082, slip op. (D. Wyo. 2015) (court simply required that the climate issue be identified and discussed). But other recent cases have found a much more comprehensive review of climate impacts to be deficient.

[54] *Rapanos v. United States*, 547 U.S. 715 (2006).

[55] *Id.*

[56] The level of state responsibility, and autonomy of the state review, vary greatly, from cursory review or waiver of review (with the Corps carrying most of the responsibility), to in-office review of draft Corps permits, to a full blown independent technical review by the state, assuming a significant component of program responsibility.

[57] *See* 40 C.F.R. § 231.1 *et seq.*

[58] In 2008, USACE and USEPA published compensatory mitigation rules (2008 Mitigation Rule). *See* 73 Fed. Reg. 19,594 (Apr. 10, 2008). While the Corps makes the final determination regarding the mitigation conditions included in the permit, USEPA retains the authority to veto the permit if it concludes that the mitigation is not adequate.

Appendix 1: Expedited Environmental Review of Infrastructure Projects – FAST-41 Highlights

Title 41 of the Fixing America's Surface Transportation Act of 2015 (FAST-41)
PL 114-94 (42 U.S.C. §§ 4370m – 4370m-12)

- Project sponsors can apply to a new federal oversight entity, the Federal Permitting Improvement Steering Council (Council), for expedited environmental review as a "covered project"

- Statutory definition of the term "covered project" dictates scope: Any activity in the United States that requires authorization or environmental review by a federal agency involving construction of infrastructure for renewable or conventional energy production, electricity transmission, surface transportation, aviation, ports and waterways, water resource projects, broadband, pipelines, manufacturing, or any other sector as determined by a majority vote of the Council that—
  - Subject to NEPA, likely cost >$200M, doesn't qualify for streamlining under any applicable law** or
  - Subject to NEPA, size/complexity warrant enhances oversight and coordination (opinion of Council) – e.g., projects subject to approvals by more than two federal agencies and/or need EIS

**Transportation projects subject to MAP-21 and water resources projects subject to the Water Resources Reform and Development Act of 2014 benefit from expedited permitting and environmental review procedures.

- Federal Permitting Improvement Council: Includes an Executive Director appointed by the President and representatives from 10 federal departments (Agriculture, Army, Commerce, Defense, Energy, Environmental Protection Agency, Housing and Urban Development, Homeland Security, Interior, Transportation), three independent agencies (Federal Energy Regulatory Commission, Nuclear Regulatory Commission, Advisory Council on Historic Preservation), the Office of Management and Budget (OMB) Director, and the Council on Environmental Quality (CEQ) Chairman

- Streamlining Measures: Coordinates NEPA review across federal agencies and coordination of state environmental review with federal NEPA process; improved and early communication with federal agencies re: necessary permits, content, and review timelines; standardized, enforceable schedules for environmental review and permitting; processes for resolving issues and modifying timetables; shortened timeframes for legal challenges; increased transparency/accountability in the federal environmental review process by requiring posting of specific info on "covered projects" to online federal permitting dashboard (includes status reports explaining project status, delays)
  - REVIEW & PERMITTING TIMELINES: Agencies must issue decisions on environmental review or authorizations not later than 180 days after the date on which *all necessary information* is in the agency's possession. Pub. L. No. 114-94, § 41002(c)(1)(C)(ii)(II)(cc).
  - PROBLEM: THESE DEADLINES ARE NOT STRICT OR ENFORCEABLE: The Act states that "each agency shall conform" to these dates. But the Act further provides for specific next steps if the schedule is not met by an agency; the consequences for failure to act on a project is to publish "an explanation of the specific reasons for failing or significantly risking failing to conform to the

completion date and a proposal for an alternative completion date," and monthly updates thereafter. Pub. L. No. 114-94, § 41007(c)(2)(f). The Act also gives agencies discretion in determining when they have sufficient information to make a decision on a project, and issuance of a final decision must occur no later than 180 days thereafter. See Part 41002(c)(1)(A)(ii)(II)(cc). It appears that time limits may vary if an agency determines more information is needed or demonstrates a reason for missing the completion date (theoretically could just keep asking for more info and/or proposing alternative completion dates – which is what happens without expedited review). **See also OMB & CEQ Guidance referenced below, Section 4.3 "What happens if an agency fails to conform to the permitting timetable?" on page 50.**

- REFORM: TIMELINE/SCHEDULE SHOULD BE MANDTORY, NONDISCRETIONARY DUTY. Any objections that are not raised or resolved by the deadlines are waived and the procedure is deemed complete --- and you move on to the next step.

OMB and CEQ Guidance – *Guidance to Federal Agencies Regarding the Environmental Review and Authorization Process for Infrastructure Projects* (Jan. 13, 2017)
https://www.permits.performance.gov/sites/permits.performance.gov/files/docs/Official%20Signed%20FAST-41%20Guidance%20M-17-14%202017-01-13.pdf

- Addresses the statutory requirements of FAST-41
- Explains the federal Permitting Dashboard – online framework for tracking covered projects, https://www.permits.performance.gov/
- Builds on an Executive Order and two Presidential memoranda issued during the Obama administration

****

Excerpt From Guidance – Page 50

E. Coordinated Project Plans (CPPs) and Permitting Timetables

.....

4.36. What happens if an agency fails to conform to the permitting timetable?

Agencies should always try to meet the agreed upon completion dates as originally proposed or as modified using the procedures described above. However, if a federal agency fails to conform to a completion date for agency action on a covered project or is at significant risk of failing to conform with such a completion date, the agency shall take the following actions.

- First, as soon as the agency misses the date or becomes aware that it is at substantial risk of missing the completion date, **consult with the facilitating or lead agency, as applicable, to establish an alternative completion date**. It may not always be possible to establish an alternative completion date. For example, a completion date may not be modified within 30 days of the completion date; nor may such date be modified without undergoing the consultative process outlined in Section 4.31.
- Second, "[p]romptly submit to the Executive Director for **publication on the Permitting Dashboard an explanation** of the specific reasons for failing or significantly risking failing to conform to the completion date and a proposal for an alternative completion date." [198] OMB and CEQ

recommend that the agency send this explanation and alternative completion date to the Executive Director within 3 business days of the missed completion date or when the agency becomes aware of the risk.

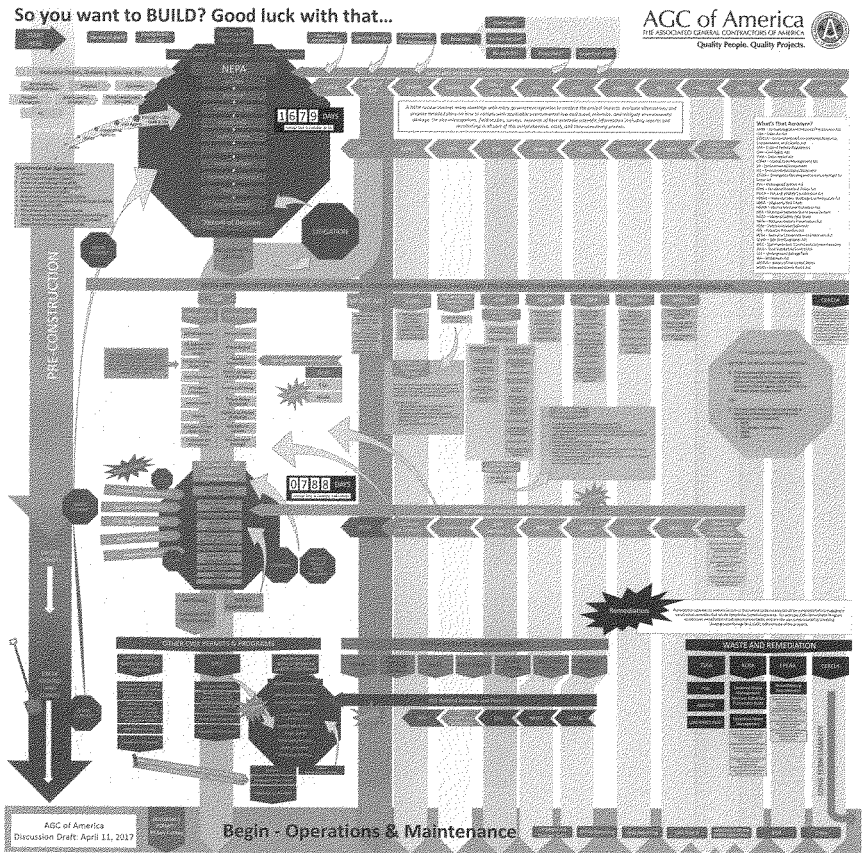
- Third, "[e]ach month thereafter until the agency has taken final action on the delayed authorization or review, submit to the Executive Director for **posting on the Permitting Dashboard a status report** describing any agency activity related to the project." [199]

[198] 42 U.S.C. § 4370m-2(c)(2)(F)(ii)(I)-(II).
[199] 42 U.S.C. § 4370m-22(c)(2)(F)(ii)(III).

****

Trump Executive Order – *Expediting Environmental Reviews and Approvals for High Priority Infrastructure Projects* (Jan. 24, 2017)
https://www.whitehouse.gov/the-press-office/2017/01/24/executive-order-expediting-environmental-reviews-and-approvals-high

- Provides for the designation of "high priority" infrastructure projects, to be made by the Chairman of CEQ in response to requests from state governors or the heads of federal departments/agencies
  - For any project so designated, CEQ is directed to coordinate with the relevant federal agency and establish expedited procedures and deadlines for completing environmental reviews and approvals "in a manner consistent with law"
  - If the deadlines are not met, the agency head must provide a written explanation to CEQ
  - Order does not mention FAST-41 or the OMB/CEQ guidance document


So you want to BUILD? Good luck with that...
AGC of America
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA
Quality People. Quality Projects.
NEPA
1679 DAYS
LITIGATION
PRE-CONSTRUCTION
0788 DAYS
CONSTRUCTION
WASTE AND REMEDIATION
AGC of America
Discussion Draft: April 11, 2017
Begin - Operations & Maintenance

Leah Pilconis – AGC of America
Questions for the Record – Submitted June 8, 2017
Senate Environment and Public Works Committee
Hearing on "Infrastructure Project Streamlining and Efficiency: Achieving Faster, Better and Cheaper Results"

Responses to Questions for the Record--Senator Carper

Transportation funding

1. **I appreciated your highlighting the importance of the Highway Trust Fund solvency crisis and the insufficiency of the gas tax due to the erosion of purchasing power from inflation. This is also an issue of great significance to me. How do funding uncertainty or insufficient funding levels cause delays for major projects?**

In the past, funding uncertainty and insufficient funding levels have caused state departments of transportation (DOT) to delay, or threaten to delay, critical projects. Before passage of the Fixing America's Surface Transportation (FAST) Act in December 2015, eight states delayed projects and many others expressed concern that the funding uncertainty could have caused delays for certain projects.

In addition, state DOTs are reluctant to move forward with the costly and time-consuming planning and environmental review for projects if there is lack of funding or funding uncertainty, further delaying an already lengthy process.

Implementation delays

2. **In your testimony, you note the benefits of several MAP-21 streamlining provisions. Are you concerned about the report from the USDOT OIG that indicates that the additional provisions of FAST Act streamlining measures is causing delay to implementation of MAP-21 provisions?**

The U.S. Department of Transportation (DOT) plans to fully implement all of the reforms intended to expedite project delivery under the Moving Ahead for Progress in the 21st Century Act (MAP-21) (Pub. L. 112-141). MAP-21 Subtitle C requires the DOT to implement initiatives to accelerate delivery of projects funded by the Federal Highway Administration and the Federal Transit Administration.

In 2015, Congress enacted the Fixing America's Surface Transportation Act (FAST Act) (Pub. L. 114-357), which reauthorized and reformed some of the MAP-21 initiatives.

2300 Wilson Blvd., Suite 300 • Arlington, VA 22201-3308
Phone: 703.548.3118 • Fax: 703.837.5400 • www.agc.org

Leah Pilconis – AGC of America
Questions for the Record – Submitted June 8, 2017
Senate Environment and Public Works Committee
Hearing on "Infrastructure Project Streamlining and Efficiency: Achieving Faster, Better and Cheaper Results"

The U.S. Office of the Inspector General (OIG) recently released an audit report[1] that provides the status of the DOT's actions to carry out the MAP-21 Subtitle C provisions and identifies possible vulnerabilities in DOT's implementation of these actions.

In response to OIG audit, DOT's Deputy Assistant Secretary for Administration Keith Washington issued a "Management Response" to Assistant IG for Surface Transportation Audits Barry DeWeese indicating that the MAP-21 streamlining provisions have moved forward and have not been impacted by the FAST Act.

DOT's response to the OIG report specifically states:

> "The Department does not view modifications to its implementation of MAP-21 Subtitle C, to adapt to the FAST Act provisions as vulnerabilities or as inhibiting benefits, but as a means for continued progress towards improving project delivery. Further, the Department believes that good progress has been made in completing the MAP-21 project delivery requirements, including those affected by the FAST Act."

[1] U.S. Department of Transportation, Office of the Inspector General. "Vulnerabilities Exist in Implementing Initiatives Under MAP-21 Subtitle C to Accelerate Project Delivery." March 6, 2017. https://www.environment.fhwa.dot.gov/liaisonCOP/.

2300 Wilson Blvd., Suite 300 • Arlington, VA 22201-3308
Phone: 703.548.3118 • Fax: 703.837.5400 • www.agc.org

Senator BARRASSO. Well, thank you so much for being with us and for sharing your testimony.

I would like to next invite Senator Cardin to introduce our next guest and witness.

Senator CARDIN. Well, thank you, Mr. Chairman. It is great to have John Porcari back before our Committee. I think most of the members of this Committee know he was the Deputy Secretary for the United States Department of Transportation from 2009 to 2013, so he is well known to our Committee.

We know him for two stints as Secretary of Transportation in Maryland. I point out that it is very relevant to today's hearing. He supervised the Woodrow Wilson Bridge construction, a multibillion dollar connection between Virginia and Maryland on I–95. He also was responsible for the ICC, Intercounty Connector, which alleviates traffic congestion in this region in Prince George's and Montgomery County. He also supervised the expansion of the BWI Thurgood Marshall Airport.

What I think is relevant, he understands the connections between highways, transit systems, roads, bridges, tunnels, ports, and airports, which I think is very vital for our work.

He now is the President of the U.S. Advisory Service at WSP Parsons Brinckerhoff, a global engineering and professional services organization, and Interim Director of the Gateway Development Corporation.

Last, Mr. Chairman, if I might ask consent that the statement from Earthjustice and other groups be made part of our record.

Welcome, John. It is a pleasure to have you here.

Senator BARRASSO. Without objection.

[The referenced information follows:]

Earthjustice, GreenLatinos, Labor Council for Latin American Advancement(LCLAA), League of Latin American Citizens (LULAC), Sierra Club, Southern Environmental Law Center,

May 3, 2017

The Honorable John Barrasso
Chairman, Committee on Environment and Public Works
United States Senate
410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Thomas Carper
Ranking Member, Committee on Environment and Public Works
United States Senate
456 Dirksen Senate Office Building
Washington, DC 20510

Re: "Infrastructure Project Streamlining and Efficiency: Achieving Faster, Better, and Cheaper Results."

Dear Chairman Barrasso and Ranking Member Carper:

Thank you for the opportunity to provide written testimony for the Committee's May 3, 2017 hearing "Infrastructure Project Streamlining and Efficiency: Achieving Faster, Better, and Cheaper Results." Please accept these comments for the hearing's official record.

This testimony addresses the importance of the National Environmental Policy Act (NEPA) for infrastructure projects and refutes false narratives that cite it as the main source of delay in the permitting process.

I. Robust Environmental Reviews under NEPA Produce Better Projects and Save Taxpayer Dollars

There is no question that our nation needs transportation infrastructure. But our nation also needs this infrastructure to be safe, intelligently planned, and ultimately effective in responding to public necessities. Much has been argued over the speed with which our infrastructure is built—making the permitting process an easy scapegoat for delays—but not as much has been said about how the permitting process under NEPA makes our infrastructure development smarter, safer, fairer, and more effective.

Careful compliance with NEPA is fundamental to making sound decisions on federal infrastructure projects. NEPA ensures that the public and agency decision-makers will have the information they need to understand the impacts of a proposed action and to know whether reasonable alternatives exist to achieve the project goals while incurring fewer environmental, social, cultural, and economic costs.

Robust environmental review and meaningful public input under NEPA lead to better, more effective infrastructure projects. Indeed, as eight past chairs of the Council on Environmental Quality have concluded, NEPA review is a prerequisite for responsible agency action:

> [C]onsideration of the impacts of proposed government actions on the quality of the human environment is essential to responsible government decision-making. Government projects and programs have effects on the environment with important consequences for every American, and those impacts should be carefully weighed by public officials before taking action. Environmental impact analysis is thus not an impediment to responsible government action; it is a prerequisite for it.[1]

For example, the Los Angeles County Metropolitan Transportation Authority's (LACMTA) Crenshaw/LAX Transit Corridor project is an 8.5-mile light-rail metro extension that serves the cities of Los Angeles, Inglewood, Hawthorne, and El Segundo by offering an alternative transportation option to congested roadways. Through the NEPA process, the LACMTA determined that a five-mile stretch of the project could utilize a rarely-used existing freight rail line corridor, instead of building new tracks in that section. The railroad agreed to abandon the line and allow LACMTA to use it. That decision decreased project costs, saved time, and reduced disturbances for the nearby community by using an existing right-of-way, while providing significant environmental benefits, economic development, and employment opportunities throughout Los Angeles County.[2]

NEPA also helps to ensure that the public and local decision-makers are fully engaged in the decision-making process so that the best, most cost-effective alternative can be pursued. The proposed "Garden Parkway" toll highway outside of Charlotte, North Carolina was once slated to cost close to $1 billion – a debt taxpayers would have been paying off for the next forty years. Questions raised during the NEPA process, however, led to the discovery that if the highway was built, North Carolina would actually see net job losses over time. Moreover, the careful review of traffic patterns during the NEPA process revealed that the highway would actually make congestion on other area highways *worse*. As a result, North Carolina has now abandoned the project and is pursuing more cost-effective upgrades to I-85.

Effective environmental reviews are critical for infrastructure projects that often have a profound effect on the environment and on public safety. NEPA reviews are typically the only opportunity for members of the public to provide input into these projects. Effective NEPA reviews expose the true cost of environmentally damaging and ill-conceived proposals, leading to improved and far less damaging projects and substantial savings for federal taxpayers. As the Crenshaw/LAX Transit Corridor project demonstrates, the public's local expertise often improves projects, lowering their

---

[1] September 19, 2005 Letter to the Honorable Cathy McMorris, Chair of the Task Force on Improving the National Environmental Policy Act from Russell E. Train (CEQ Chair 1970-1973), Russell W. Peterson (CEQ Chair 1973-1976), John Busterud (CEQ Chair 1976-1977), Charles W. Warren (CEQ Chair 1977-1979), J. Gustave Speth (CEQ Chair 1979-1981), Michael R. Deland (CEQ Chair 1989-1993), Kathleen A. McGinty (CEQ Chair 1995-1998), George T. Frampton Jr. (CEQ Chair 1998-2001), Gary Widman (CEQ General Counsel 1974-1976), Nick Yost (CEQ General Counsel 1977-1981) (emphasis added).

[2] FEDERAL TRANSIT ADMINISTRATION, RECORD OF DECISION ON THE CRENSHAW/LAX TRANSIT CORRIDOR PROJECT (Dec. 30, 2011), http://media.metro.net/projects_studies/crenshaw/images/20111230_CrenshawLAX_Record_of_Decision.pdf.

cost and actually shortening the time they take to complete. Similarly, as illustrated by the Garden Parkway example, NEPA can empower local communities by giving them the information they need to make the best decisions for their communities.

In testimony before the House Armed Services Committee regarding plans to address problems with obsolete nuclear reactors at the Savannah River site, then Secretary of Energy Admiral James Watkins, testified:

> "Looking back on it, thank God for NEPA because there were so many pressures to make a selection for a technology that it might have been forced upon us and that would have been wrong for the country."[3]

When resource agency concerns are ignored or necessary studies are not done, the results can be devastating. Prior to construction of the Mississippi River Gulf Outlet (MRGO)— a channel that provided a shorter route between the Gulf of Mexico and New Orleans' inner harbor in Louisiana— the U.S. Fish and Wildlife Service raised serious concerns and recommended additional environmental and hydrologic modeling, but the Army Corps of Engineers ignored this advice. By 2000, the MRGO had impacted over 600,000 acres of coastal ecosystems surrounding the Greater New Orleans area and destroyed over 27,000 acres of wetlands that once served as an important buffer from storm surge. During Hurricane Katrina, the MRGO funneled Katrina's storm surge into New Orleans, resulting in devastating and deadly flooding in St. Bernard Parish and the lower Ninth Ward.

Still, NEPA provides more than just a voice for the environment. State, local and tribal agencies, private property owners, labor unions, and business associations routinely rely on NEPA to express their views and impact agency decisions. It also gives a voice to the most impacted and underrepresented, especially to the most vulnerable communities who usually have to bear the most burden of where federal projects are proposed in the first place. Overall, it allows citizen oversight, ensuring public resources are used in a way that is responsive to what the public needs and wants.

II. All the evidence demonstrates that the NEPA review process is not the source of delay

Over the last few years, a number of Members of Congress and witnesses before this committee have commented that NEPA and other regulations were a major cause of delay in infrastructure projects. This theory has been comprehensively examined and rebuffed by numerous studies, including studies conducted by the Congressional Research Service (CRS) and the U.S. Department of the Treasury.

The most recent report was released by the Treasury Department in December 2016. This report, like the others, found that "a lack of funds is by far the most common challenge to completing" major infrastructure projects.[4] The report listed three additional challenges to large-scale infrastructure projects in order of their impact on the project development process. The second

---

[3] Hearings on National Defense Authorization Act for Fiscal Year 1993 - H.R. 5006, and Oversight of Previously Authorized Programs before the House Committee on Armed Services, 102nd Cong. 912 (1992).

[4] Toni Horst, et al., *40 Proposed U.S. Transportation and Water Infrastructure Projects of Major Economic Significance*. AECOM, (2016). https://www.treasury.gov/connect/blog/Documents/final-infrastructure-report.pdf (last accessed March 20, 2016).

largest challenge was lack of consensus when multiple public and private entities and jurisdictions are involved. The third largest challenge was capital costs increasing at a greater rate than inflation. The last, and smallest challenge by far, to large-scale infrastructure projects was the environmental review and permitting process.

The Congressional Research Service (CRS) has likewise concluded, on multiple occasions, that NEPA is not a primary or major cause of delay in project review. In fact, CRS has found that the most commonly identified causes of delay are completely unrelated to the NEPA review process. In one report, CRS concludes that for transportation projects, the lack of funding, securing community consensus, and accommodating affected stakeholders, including utility companies and railroads, account for the vast majority of delays.[5] In another report, CRS determined:

> "[T]here is little data available to demonstrate that NEPA currently plays a significant role in delaying federal actions" and "factors *outside the* NEPA process were identified as the cause of delay between 68% and 84% of the time."[6]

In a 2012 report, CRS also concluded that about 90% of federally-assisted highway projects are conducted under a Categorical Exclusion (CE), essentially allowing them to move forward without an environmental review process. Moreover, only four percent of projects required a detailed Environmental Impact Statement (EIS) to be prepared.

Overall, the overwhelming evidence demonstrates that NEPA is not a primary source of delay when it comes to infrastructure projects. Therefore, we urge Congress to address the causes of delay identified by CRS and others.

III. Further reforms will only complicate and confuse the process.

Congress has already made significant changes to the permitting process under NEPA but many of these changes have not been implemented yet so there is no evidence to show that further changes are needed. As the Committee is aware, changes to the NEPA process for infrastructure projects were enacted in the Moving Ahead for Progress in the 21st Century Act (MAP21), the Water Resources Reform and Development Act of 2014 (WRDA), and the Fixing America's Surface Transportation (FAST) Act.

Additional changes to the review process for infrastructure projects prior to the implementation of legislatively-mandated regulations have led to confusion. Just a few weeks ago, DOT's Inspector General (IG) found that although the Department has completed most of the reforms mandated by MAP21, the Department was forced to delay the implementation of the others because they must be revised to also comply with the additional changes in the FAST Act.[7]

---

[5] Congressional Review Service (CRS), Accelerating Highway and Transit Project Delivery: Issues and Options for Congress 1 (Aug. 3, 2011), available at http://www.aashtojournal.org/Documents/August2011/CRSinfrastructure.pdf.

[6] CRS, The National Environmental Policy Act: Background and Implementation 28, 30 (Feb. 29, 2008), available at http://www.cnie.org/NLE/CRSreports/08Mar/RL33152.pdf.

[7] Office of the Inspector General. "Vulnerabilities Exist in Implementing Initiatives Under MAP-21 Subtitle C to Accelerate Project Delivery." March 6, 2017.

In fact, further changes to the NEPA process at this time would only complicate and possibly undermine the way the already approved ones work. In fact, the IG stated that, because of the interruptions caused by the additional FAST Act reforms, "the Department may not achieve all of the intended benefits under MAP-21…such as accelerated project delivery, reducing costs, and ensuring that the planning, design, engineering, construction and financing of transportation projects are done in a more efficient and effective manner."[8] Essentially, the IG's statement demonstrates that piecemeal legislative attacks not only constrain flexibility but by creating new burdensome NEPA requirements, they also unnecessarily complicate and delay implementation.

IV. Conclusion

To ensure that transportation decision-making is conducted in a transparent and informed fashion, Congress should ensure robust environmental reviews that fully comply with the National Environmental Policy Act. Our organizations look forward to working with you to achieve these important goals.

Sincerely,

Raul Garcia
Legislative Counsel
Earthjustice

Mark Magana
President
GreenLatinos

Luis A. Torres
Director of Policy and Legislation
League of United Latin American Citizens (LULAC)

Hector Sanchez
Executive Director
Labor Council for Latin American Advancement (LCLAA)

Kirin Kennedy
Associate legislative Director, Lands and Wildlife
Sierra Club

Trip Pollard
Senior Attorney
Southern Environmental Law Center

---

[8] *Id.*

Senator BARRASSO. Mr. Porcari, welcome back to the Committee.

STATEMENT OF JOHN PORCARI, PRESIDENT OF U.S. ADVISORY SERVICES, WSP PARSONS BRINCKERHOFF

Mr. PORCARI. Thank you, Chairman Barrasso, Ranking Member Carper. And thank you, Senator Cardin. It is a pleasure to be here today, and I truly appreciate this Committee's continued leadership on this very important issue through the years.

My abbreviated verbal testimony is supplemented by a written testimony that I have submitted for the record.

And I have to say this is a topic that I feel very passionate about. As Senator Cardin points out, having twice served as a State DOT Secretary with responsibility for every mode of transportation—highway, bridge, transit, airport, and port projects—I have experienced firsthand the frustrations that are inherent in delivering large, complex infrastructure projects. And I brought those frustrations and hard lessons with me to my tenure as Deputy Secretary and Chief Operating Officer of USDOT.

Streamlining the approval processes and delivering better projects through a faster, more predictable process is a necessary precursor to fixing our nation's broken infrastructure. It is clear that together we have made significant progress, but much more work remains to be done.

We have had two successive surface transportation reauthorizations, MAP–21 and the FAST Act, that have incorporated significant streamlining provisions. Our common goal moving forward should be better outcomes in a faster, more predictable process.

With MAP–21, among other things, we have five new categorical exclusions, including a CATEX for emergency repairs that was used right after its adoption for the Skagit River Bridge collapse. It allowed us to combine the final environmental impact statement and Record of Decision. It allowed NEPA assignment for highway projects, and initially only the State of California took advantage of that for highway projects. Later, Ohio, Texas, Florida, and Utah did that as well.

That was followed by the FAST Act, which in addition to bringing some consistency and predictability to the process set deadlines requiring a schedule, and it applies to projects beyond transportation for the first time. So for infrastructure writ large, we have an opportunity to enact some of the process reforms that are out there.

It also, importantly, allowed funding for dedicated staff for highway, aviation, and transit projects in the reviewing agencies. I believe that is an underutilized tool that can be very effective, in particular for major projects. It also permitted concurrent review of a coordinated project plan.

And this played out in what I think of as a tale of two bridges. Both were complicated multibillion dollar replacement bridge projects. Both were urgently needed. The difference is one is nearing completion, and the other is unbuilt.

The first one, the Tappan Zee Bridge replacement, the New York Bridge, received a Record of Decision in 13 months. We believe that is a record. It had all of its other Federal approvals by month 15. The Governor, the cabinet secretaries for the President were all

personally involved in making sure this project moved forward, and that is a critical success ingredient for major projects.

A rapid response team, which is the precursor to today's Permitting Improvement Council, was formed in response to this project to front load the coordination to make it happen.

In contrast, the Columbia River Crossing, a major bridge replacement program for the States of Washington and Oregon, received NEPA approval, but not the Coast Guard bridge permit. It can't proceed without it. That was a major breakdown between two agencies. It required senior level intervention to get it back on track. That is the very definition of failure.

With later outstanding help from the Coast Guard, it resulted in a Memorandum of Understanding between DOT and the Coast Guard to allow the simultaneous issuance of a Record of Decision and the Coast Guard bridge permit. But it is clear that showed what should not happen.

So what were the lessons? First, it is not in legislation, but without passionate project advocates—external and internal—projects don't make it over the finish line. It is elected officials and project professionals alike that are committed to the project.

Front loading the process, getting all the review agencies around the table at the very beginning of the process, really works. It forces everyone to acknowledge and understand the issues. Direct conflicts, and there are some, usually, between agencies get resolved and identified early.

What are the next steps? Let me suggest five things that we can build on that work. One is the Liaison Program, where you can fund dedicated staff at agencies. It has been proven to improve the review times and ensure better outcomes. It has expanded to include aviation and transit under the FAST Act. This is a cost effective investment for major projects.

Second, NEPA assignment for highway and other projects to the States. As has been pointed out by the Chairman, we work under a Federalist system. The States have the primary responsibility for delivering projects. The States are capable of doing this work. And where it has been delegated, with California, Texas, Florida, Utah, and Ohio, they have taken advantage of it. Texas reports a 25 percent reduction in approval times for major projects. Ohio reports an approximately 20 percent time savings in delivering their overall program.

The third essential element for major projects is to get the project on the President's dashboard and use the Permitting Improvement Council to front load the process and move it forward.

Fourth, concurrent reviews within NEPA are permitted and encouraged. They need to be the norm, as has been pointed out.

And five, outside of the NEPA process, other permits that are typically needed, as the other witnesses have mentioned, the Corps 404 permits, Coast Guard bridge permits, those can run, and should run, concurrently with the NEPA process.

So what remains to be done? First, we should do no harm. Any additional legislative requirements could actually slow down the process of implementation of the reforms under MAP–21 and the FAST Act. We should not permit that.

Next, reporting back to Congress and the public on review and approval times for EA and EIS projects. We pay attention to what we measure. We should measure it all.

And then finally, the Permitting Improvement Council, which was set up in the FAST Act, every project of regional and national significance should be tracked. It is the single best interagency mechanism to engineer better project approval process. It is up to the President's direction to name the director for that. That is a critical position within the Federal Government that could do more than any other single element to improve the process.

Thank you, and I appreciate the opportunity.

[The prepared statement of Mr. Porcari follows:]

STATEMENT OF
JOHN D. PORCARI

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
U.S. SENATE

HEARING ON

INFRASTRUCTURE PROJECT STREAMLINING AND EFFICIENCY: ACHIEVING FASTER, BETTER, AND CHEAPER RESULTS
MAY 03, 2017

Good morning Chairman Barrasso, Ranking Member Carper and members of the Committee. Thank you for the opportunity to testify before you today. I have had the opportunity to testify in front of this Committee regarding environmental streamlining on several previous occasions and welcome the chance to share my perspectives and project-specific experiences again as you consider legislative remedies to build projects better, faster and cheaper.

Our nation's infrastructure is crumbling, in need of repair and replacement. Modernizing our transportation network, energy grid, water and sewer systems, and the other connective tissue that moves our economy is an opportunity to literally build the foundation for America's future prosperity for generations to come. However, to capitalize on this, we have to commit to ways to develop and deliver these projects more efficiently and predictably. In my experiences as Secretary of Transportation for Maryland, Deputy Secretary at the US Department of Transportation (USDOT), and most recently as President of the US Advisory Services at WSP | Parsons Brinckerhoff, I have been involved in both policy development and implementation – continually seeking ways to plan, design and construct infrastructure projects that are started and completed faster and that deliver better outcomes. I have also had the responsibility of delivering large, complex infrastructure projects, and have experienced the challenges this committee has identified first-hand. It has been a near-constant refrain from Administrations of both parties and Congress to consider strategies to "fix" the environmental permitting and review process, removing barriers to investment and eliminating redundancies in the environmental reviews. It is truly a bipartisan issue. Our common task is to work together to ensure that any additional reforms to the federal permitting and review process encourage greater coordination while maintaining critical protections of our valuable natural resources and producing positive outcomes for our communities.

It is important to point out that the National Environmental Policy Act (NEPA) is not the only, or even the primary, impediment to delivering faster, better and cheaper infrastructure projects. According to the General Accountability Office and the Congressional Research Service, almost all (over 90%) of Federally assisted highway projects proceed under a Categorical Exclusion

(CE), the simplest, most straight-forward review under NEPA.[1] Only four percent of projects require the preparation of an Environmental Impact Statement, the most detailed review document.[2] This relatively small percentage of projects, however, constitute the most visible cohort of projects. The overwhelming evidence shows that the causes of delay for these major projects are more often tied to local/state and project-specific factors, agency priorities, project funding levels, local opposition to a project, project complexity, or late changes in project scope.

Thoughtful consideration of how we can improve the process while delivering measurably better outcomes for communities and the environment should be our goal. Making significant changes to environmental protections without fully implementing the process improvements included in our most recent surface transportation authorizations, the Moving Ahead for Progress in the 21st Century (MAP-21)[3] and the Fixing America's Surface Transportation Act (FAST Act)[4], may be counter-productive. The agencies, companies, and stakeholders involved in delivering our country's infrastructure need, above all, a consistent and predictable process.

The single most important action Congress can undertake to accelerate project delivery is to provide steady, long-term, and predictable funding. With greater certainty in project funding, project sponsors can more effectively plan their projects and will be incentivized to complete the planning and approvals process as quickly as possible and get to construction, enabling greater coordination among stakeholders to develop and design a project that avoids, minimizes or mitigates negative environmental impacts. Conversely, short-term authorizations and uncertainty in the appropriations process often stretches out the up-front work in the environmental review and approval process that is key to large, complex projects moving forward on a timely basis.

The environmental process as it stands today, if done right, can result in high-quality projects, informed by substantive public engagement and reflecting the needs and desires of the people the projects serve. Early and meaningful coordination among stakeholders, including federal and state regulatory agencies, can unlock innovative solutions and uncover hidden pitfalls at the beginning of a project. Front-loading such stakeholder collaboration and communication helps to identify and understand issues early enough in the environmental permitting and review process to yield a shorter, more consistent process that has a better chance of withstanding litigation.

Real, substantive changes to the process have already been made to encourage better coordination and to legislate improved alignment of federal responsibilities to execute the environmental review process more efficiently. It is worth considering some of those recent

---

[1] Government Accountability Office Report GAO-14-370: "National Environmental Policy Act: Little Information Exists on NEPA Analysis, April 2014.
[2] CRS Report R42479, "The Role of the Environmental Review Process in Federally Funded Highway Projects: Background and Issues for Congress." April 11, 2012. This statistic is based on data from 1998 to 2007.
[3] P.L. 112-141.
[4] P.L. 114-94.

changes and how they have already improved project delivery before we turn towards the challenges that remain.

Lessons Learned from Implemented Improvements

While serving in the Obama Administration, I tried to bring my personal experience and frustrations in delivering major projects to the formulation and implementation of several Executive Actions to increase efficiency in environmental reviews as well as the implementation of MAP-21, which contained a number of effective project delivery provisions. Applying both legislative and administrative remedies, we were able to achieve some specific project successes and learned many important lessons along the way.

MAP-21, enacted in 2012, created a streamlined and performance-based surface transportation program and built on many of the programs and policies established by previous transportation legislation. MAP-21 promoted accelerated project delivery and encouraged innovation through the increased use of CEs, programmatic approaches, and planning and environmental linkages. We have seen successes and process improvements under these changes in the transportation sector.

For example, MAP-21 included a CE for emergency repairs, allowing for critical rebuilding and replacement of failed transportation structures. Not long after finalizing the rulemaking for that CE, the Federal Highway Administration (FHWA) applied it to the Skagit Bridge collapse in Washington, allowing for the accelerated repair and replacement of this critical segment of the Interstate system. MAP-21 also directed USDOT to survey grantees to identify any additional actions that should be covered by CEs, resulting in the FHWA creating four new CEs, further reducing the need to conduct lengthy environmental analysis on routine projects that do not have significant impacts on the environment.

The Illiana Expressway, a span of Interstate 55 connecting Indiana and Illinois, was the first to leverage the combined Final Environmental Impact Statement/Record of Decision (FEIS/ROD), authorized by Section 1319 of MAP-21. This approach is now standard practice for USDOT, eliminating at least 30 days from project schedules, and often more.

In addition to creating new CEs and authorizing the combined FEIS/ROD, MAP-21 made significant changes to the environmental review process for FHWA and the Federal Transit Administration (FTA). The "Efficient Environmental Reviews and Project Decisionmaking"[5] process, first authorized in the Safe Accountable Flexible Efficient Transportation Equity Act, a Legacy for Users (SAFTEA-LU),[6] has put transportation projects at the leading edge of project delivery reform, providing a simplified but structured process aligning environmental reviews and improving coordination. Following nearly seven years of advancing projects through that process, MAP-21 made substantive changes, adding concurrence points for other federal

[5] 23 U.S.C. § 139.
[6] P.L. 109-59.

agencies and also strengthening the role of the USDOT in setting the parameters of the project study.

MAP-21 also made permanent a pilot program known as the "Surface Transportation Project Delivery Pilot Program,"[7] first introduced under SAFETEA-LU. This pilot program authorized up to five (5) states to request assignment of responsibilities under NEPA for highway projects. MAP-21 also expanded the program to allow states that have assumed responsibility for highway projects to seek assignment for railroad, public transportation, and multimodal projects. Only California participated in that pilot program, with Caltrans receiving NEPA Assignment in 2007. Since the enactment of MAP-21, Texas, Ohio, Utah, and Florida have leveraged NEPA Assignment to expedite environmental reviews for highway projects in their states, and Caltrans has renewed its Assignment agreement. As a result of Assignment, Texas has seen a 25% reduction in time on major projects and Ohio has claimed approximately 20% time savings in delivering their overall program.[8] Nebraska and Alaska have also expressed interest in assuming NEPA responsibilities under this statutory program.

Prior to and concurrent with the implementation of MAP-21, President Obama also pushed for broader reform across the Federal government, taking lessons learned from the transportation sector and the project delivery reforms enacted by Congress, and applying best practices across all infrastructure sectors. This work resulted in the Federal Infrastructure Project Permitting Dashboard,[9] identifying "Projects of National or Regional Significance" and updated procedures across multiple agencies that have led to better coordination and improved alignment of Federal interests.

There are two projects targeted during this administrative reform effort worth highlighting. They could not have had more different outcomes, but each was valuable in the lessons we learned.

President Obama identified the Tappan Zee Bridge Replacement Project (now known as the New New York Bridge) as a High Priority Project in 2011. Following that designation, the project was able to start and complete the NEPA process in 13 months, and the project secured all other Federal approvals within two months of completing NEPA. This was a significant accomplishment, bringing no less than eight federal agencies with decision-making authority together to deliver a critical, high-priority project. With attention from the Governor, the President, and Cabinet Secretaries, federal staff formed a rapid response team for the project, meeting weekly to discuss and solve known and anticipated problems. This level of focused attention is not scalable to every project in the nation, but it does show what is possible when the federal partners coordinate effectively with the goal of delivering a project.

---

[7] 23 U.S.C. § 327.
[8] http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP25-25(99)_FR.pdf.
[9] www.permits.performance.gov.

In contrast, the Columbia River Crossing (CRC), the Interstate 5 bridge connecting Portland, Oregon, and Vancouver, Washington provided a valuable lesson in how projects can become delayed when coordination and communication among agencies fail. The project was a major bridge replacement project identified as a "Project of National and Regional Significance" after an impasse between the U.S. Coast Guard (USCG) and USDOT resulted in the completion of USDOT's NEPA process but without a required bridge permit approval from the USCG. This impasse resulted from a breakdown in communication between the agencies and led to significant delays as they resolved the issue. Again, through focused attention by senior leadership, all of the agencies involved were able to resolve the issue, completing the NEPA review process and obtaining the required permits from USCG and other agencies. However, such senior-level intervention cannot be the norm when delivering major projects across the nation.

To address the issues of a failure in coordination encountered on CRC and to help institutionalize the enhanced coordination evident on Tappan Zee, the USDOT, along with its sister federal agencies, undertook a comprehensive update to existing coordination agreements and guidance. First, the FHWA and the USCG developed a Memorandum of Agreement[10], updating a 1977 Memorandum of Understanding intended to improve coordination and avoid unnecessary duplication of effort by the USCG, the FHWA, and the State highway agencies in completing the NEPA review process for bridge projects requiring action by both FHWA and USCG. Additionally, both the FTA and the Federal Railroad Administration joined FHWA and USCG in a Memorandum of Understanding[11] to coordinate and improve bridge planning and permitting across the primary surface transportation modes.

A comprehensive effort was also undertaken to update the "Red Book," a 1988 handbook on *Applying the Section 404 Permit Process to Federal-Aid Highway Projects.* The *2015 Redbook: Synchronizing Environmental Reviews for Transportation and other Infrastructure Projects*[12] focused on conducting **concurrent** reviews instead of **sequential** reviews to the greatest extent possible and provided practitioners and stakeholders alike the tools and resources necessary to align the many federal environmental and resource laws typically encountered on infrastructure projects. The FHWA and its state partners had, for years, been using "merger agreements," formalized agreements between the Army Corps of Engineers, FHWA, State DOTs, the Environmental Protection Agency and others to align the Clean Water Act wetland permit requirements with NEPA to ensure a selected project can be permitted. These agreements ensure that permit requirements are considered in the NEPA analysis, ensuring that agencies are aligned as the project advanced.

---

[10] https://www.environment.fhwa.dot.gov/strmlng/MOA_USCG_bridge_permits.asp.
[11] https://www.environment.fhwa.dot.gov/strmlng/MOU_multimodal_bridge_permits.asp.
[12] https://www.environment.fhwa.dot.gov/strmlng/Redbook_2015.asp.

The FAST Act

Accelerating project delivery is a major theme of the FAST Act, with 18 separate provisions in the Highway title alone that are designed to increase innovation and improve efficiency, effectiveness, and accountability in the planning, environmental review, design, engineering, construction, and financing of transportation projects. Most notably though, Title XLI of the FAST Act established new permit streamlining provisions that are intended "to create a smarter, more transparent, better-managed process for government review and approval of major capital projects."

For example, the FAST Act added new flexibilities to increase efficiencies and refine existing authorities by allowing States with stringent environmental laws and regulations to use state requirements in lieu of federal requirements. A critical, but largely unused, provision of the FAST Act authorizes USDOT grantees to flex a portion of their project funds toward funding dedicated staff at reviewing and permitting agencies to accelerate environmental reviews. The FAST Act also encourages greater use of the collaborative planning processes and adds new tools to accelerate project delivery by requiring a schedule and checklist as part of a project coordination plan. Recognizing that effective interagency coordination and consensus regarding project schedules can be a primary driver for a faster, more consistent process, the FAST Act prescribes specific new timeframes for environmental notices and reviews. Throughout the new provisions, transparency and public access are emphasized, including additional requirements for online access and status updates of the NEPA process. In many ways, Title XLI of the FAST Act took lessons learned from the transportation sector's experience and created a similar structure for other infrastructure sectors.

The provisions of Title XLI are intended to improve the permitting process for major infrastructure projects in three ways: 1) better coordination and deadline-setting for permitting decisions, 2) enhanced transparency, and 3) reduced litigation delays. Section 41002 of the FAST Act establishes a Federal Permitting Improvement Council (Council), composed of an Executive Director appointed by the President, the Chairman of the Council on Environmental Quality, the Director of the Office of Management and Budget, and Council Members designated by 13 major federal agencies. The FAST Act requires the Council to develop a categorized inventory of covered projects that are pending environmental review and to develop recommended performance schedules for environmental review. These schedules must include a mandatory completion date of not more than 180 days after the permitting agency receives all information necessary to make a decision on the application. The Council must also issue best practices annually and create training materials for permitting officials. In addition to these provisions, Section 41003 of the FAST Act contains various provisions aimed at improving inter-agency coordination through the creation of a Coordinated Project Plan and a Permitting Dashboard which will serve as a centralized, one-stop information page for pending projects. Title XLI also reiterates existing regulatory practices to share information with states to avoid duplicative reviews.

These ambitious accelerated delivery provisions may, however, have had the unintended effect of delaying other, earlier sound legislative improvements to the process. In fact, the USDOT Inspector General (IG) found that the USDOT has completed work on more than half of the 42 streamlining provisions directed by Congress under MAP-21, but now has delayed implementing a significant number of MAP-21's reforms because they must be revised to comply with additional streamlining provisions mandated in the FAST Act.[13] According to the IG audit report, USDOT is altering 19 of its planned actions, which include 10 of the 27 actions already completed under MAP-21.[14] The IG found that the delays caused by additional FAST Act streamlining might in fact impede USDOT's progress toward achieving all of the intended benefits under MAP-21, such as accelerating project delivery, reducing costs, and ensuring that the planning, design, engineering, construction, and financing of transportation projects are more efficient and effective. Thus, enacting additional provisions for streamlining, before allowing full implementation of the FAST Act, could result in greater uncertainty and longer delays as project proponents await agency implementation of the changes and would likely lead to wasted time and effort for agencies and project sponsors.

Next Steps

Although enacting additional changes to the process at this time could add to the cumulative delay of implementation, there are still opportunities to make the process work better. Creating incentives to increase the use of existing but underutilized statutory and regulatory tools as well as institutionalizing some of the lessons we have learned can result in targeted improvements that improve the process and retain fundamental environmental protections.

Liaison Program

FHWA and FTA have had the authority to allow statewide agencies to use a portion of their federal dollars to fund dedicated staff at reviewing and resource agencies since SAFETEA-LU. FHWA has, in that time, developed an extensive community of practice.[15] This authority was expanded under the FAST Act to allow for the funding of dedicated positions to any recipient of grant or formula funds from USDOT including rail, aviation, and local transit agencies. To date, no grantee from other transportation modes has leveraged this authority. Considering that permitting and regulatory agencies often cite resource constraints as the reason they cannot accelerate their reviews, grantees <u>must</u> fully leverage this authority. Congress could consider what impediments exist to the broader use of this streamlining tool and look for incentives to encourage wider adoption.

---

[13] U.S. Department of Transportation, Office of the Inspector General. "Vulnerabilities Exist in Implementing Initiatives Under MAP-21 Subtitle C to Accelerate Project Delivery." March 6, 2017.

[14] Page 2, "Results in Brief", U.S. Department of Transportation, Office of the Inspector General. "Vulnerabilities Exist in Implementing Initiatives Under MAP-21 Subtitle C to Accelerate Project Delivery." March 6, 2017.

[15] https://www.environment.fhwa.dot.gov/liaisonCOP/.

Surface Transportation Project Delivery Program – NEPA Assignment
The NEPA Assignment program is also underutilized, with only five states participating and only highway projects covered under those Assignment agreements despite Congress's clear intent to expand its application by making rail, transit and multimodal projects eligible for Assignment as well. With the time and cost savings experienced by the states participating in the program, it is worth considering why more states have not applied for the program and why states in the program have not included more project types. Congressional action to eliminate barriers to participation or otherwise incentivizing NEPA Assignment is another area that could yield benefits simply by fully utilizing existing authority through targeted remedies.

Getting Back to Basics
The ultimate goal of the NEPA process is to foster the most appropriate federal action that protects, restores, and enhances our environment by providing clear, concise and transparent information. NEPA does not dictate a particular outcome or even the most environmentally preferable outcome. Rather, the purpose of NEPA is to provide federal agencies and the public with accurate and accessible information to make better decisions. Notwithstanding regulatory page limits established by the Council on Environmental Quality,[16] over the years, it has become the practice to produce NEPA documents that are several volumes and thousands of pages long. Such dense, cryptic information undermines the purpose of NEPA, serves neither the public nor the project, and ultimately does little to protect against litigation. Congress could consider better enforcement of such existing provisions to re-establish the fundamental purpose of NEPA.

National Prioritization
Finally, recognizing that the most complex and controversial infrastructure projects require direct engagement by senior leadership, and benefit greatly from passionate advocacy, Congress could consider identifying the critical infrastructure priorities for the nation, for example working with the States to identify the top 3 projects in each state. Congress could then ensure that these projects receive the statutory and fiscal resources needed to produce timely and efficient delivery.

Conclusion
As we embark on building and maintaining an infrastructure that supports and grows our economy and way of life, we need to implement innovative and collaborative approaches to environmental review and permitting. There are many types of critical infrastructure projects that must move through the permitting and review process, and these projects do not all face the same hurdles and challenges. One size does not fit all in project delivery, and solutions must consider project context, complexity, and impacts.

While much work remains, there have been real strides in reforming and improving the environmental review and permitting process through legislative and administrative

[16] 40 C.F.R. 1502.7. The regulations limit the text of final environmental impact statements to normally be less than 150 pages and for proposals of unusual scope or complexity to normally be less than 300 pages.

efforts. When agencies and sponsors fully leverage existing authorities and the process is applied as intended, most significant delays in the environmental process can be avoided. A challenge that we cannot necessarily legislate a remedy for is the lack of awareness or unfamiliarity with the flexibilities already on the books. As noted above, the NEPA Assignment program only has 5 participants, despite Congress's expressed intent to broaden the program. Funding dedicated staff at reviewing or permitting agencies is still only executed by FHWA, despite being available for all recipients of USDOT funds. Until we fully explore the tools we have, we cannot know how to take the next steps for further improvement.

We have learned that we need a large toolbox to address the various issues that arise during project planning and delivery. Moving the most critical projects forward quickly in a way that ensures better community and environmental outcomes requires upfront coordination and collaboration among the Federal agencies, project sponsors, and community stakeholders. Legislating efficiencies in project delivery is only one piece of a larger challenge facing project sponsors as they try to build and repair our nation's infrastructure. One consistent lesson that legislation cannot address is that any successful project requires a passionate project advocate to overcome the inevitable issues that arise even in a streamlined process. In addition, focusing solely on environmental permitting and review ignores the larger issue of sustainable and sufficient funding for the critical infrastructure needs of this country. Ultimately, broad and repeated attempts to legislatively streamline the process may result in a process that is more complicated than it needs to be and may not produce better outcomes.

We all have to find the right balance of reforming the permitting and review process while maintaining critical environmental and community protections. The environmental review process is a contributor, but usually is not the primary cause of delay for most major infrastructure projects. I look forward to providing this Committee with any support or further information needed to bring infrastructure improvements to the American people in a faster, better and smarter way.

Thank you for the opportunity to appear before you today. I look forward to answering any questions you may have.

Senate Environment and Public Works Committee
Hearing entitled, "Infrastructure Project Streamlining and Efficiency: Achieving Faster, Better, and Cheaper Results."
May 3, 2017
Questions for the Record for Mr. John D. Porcari

Ranking Member Carper:

1. *Obama Administration Efforts*
During your leadership at USDOT, the Obama Administration prioritized 14 major projects and USDOT completed them quickly using only the existing statutory authorities. What were the key differences between those prioritized projects and other major projects, and is there a legislative fix that would enable us to scale up those coordination improvements to all other major transportation projects?

RESPONSE: The Obama Administration pursued an aggressive agenda of modernizing the federal permitting and approval process through multiple executive actions. Under a Presidential Memorandum in August 2011, the United States Department of Transportation (USDOT) identified six (6) projects as "High Priority Projects" that were given Administrative priority and which had project schedules to complete the necessary permitting and approvals tracked on a newly created Federal Infrastructure Dashboard (Dashboard). The project most discussed was the Tappan Zee Bridge replacement project, now known as the New New York Bridge. The other projects included transit extension in Los Angeles (LAX-Crenshaw Green Line), modernizing the US airspace through the NextGen implementation at the Houston Metroplex, a critical roadway connection in Provo, Utah, a transit extension in Baltimore (Baltimore Red Line), and the planning for upgrading the most economically critical stretch of passenger rail service in the nation (NEC Future).

These High Priority Projects (HPP) received attention from the highest levels of government, including weekly meetings of senior staff of agencies involved, who eventually formed the Transportation Rapid Response Team, co-chaired by the Chair of the Council on Environmental Quality and Deputy Secretary of USDOT. These senior staff meetings among the affected federal agencies encouraged early issue identification and open communication in order to meet the published accelerated schedules. As a result, the Tappan Zee Environmental Impact Statement progressed from the Notice of Intent (the start of the process) to a Record of Decision (the end) in an almost unheard of 15 months. The Provo Westside Connector which had been stymied in an interagency disagreement on the alignment was able to break free and proceed to permit approval as a result of headquarters-led Environmental Conflict Resolution. The other projects produced their own lessons learned on best practices for major projects, leading to President Obama's Executive Order 13604 which established Projects of National and Regional Significance (PNRS). Under that EO, USDOT identified additional projects for acceleration.

High Priority Projects and Projects of National and Regional Significance are useful strategies to elevate the most critical projects to ensure that the appropriate attention and resources are focused on their success. However, it is by its nature, managing by exception and does not necessarily translate into across the board improvements. The intention from the beginning was to use the HPP/PNRS projects to re-engineer the overall process, to the benefit of all projects.

Should Congress confront this challenge, legislative direction that leverages the Permitting Improvement Council created by FAST Title XLI could serve as the central interagency body that identifies the projects most critical to the nation and ensures their timely completion of environmental permits and reviews. Directing the Council to establish objective criteria to determine the relative significance or importance of individual projects and then empowering the agencies to exercise discretion and full flexibility within their statutory and regulatory authorities to expedite the reviews and approvals of such projects will deliver sizable economic benefits for the nation.

2. *Causes of Delay*
   What do you believe is the number one challenge facing transportation projects today and how can Congress address that challenge?

   RESPONSE: The best single action that Congress can undertake to ensure that projects are advanced efficiently is to provide a steady, sufficient, long-term funding source for project sponsors. Too often, projects are started in the planning and design pipeline and then get stalled as funding dries up or is reallocated. Certainty in project funding will do more to move projects than any changes made to the environmental review process. Knowing that construction funding will ultimately be available for a project will ensure that the early financial investments in planning and design are prioritized.

3. *FAST Act and MAP-21 Implementation*
   a. Last month, the Inspector General at USDOT reported that DOT had implemented just over half of its planned actions from MAP-21 to accelerate projects, and that the FAST Act changes have delayed some already-implemented actions. Would you agree that legislative uncertainty and implementation delays can hinder our ability to achieve intended benefits, such as accelerating project delivery and reducing project costs?

      RESPONSE: Yes, uncertainty in policy and procedures, particularly when pursuing substantive changes to established process, can result in delays. The policy changes in these major authorization bills take a while to trickle down to the project sponsors and the field personnel of the affected agencies. To be effective, process improvements need to be a priority of senior leadership and must also be clear, implementable, and without ambiguity. Introducing conflicting requirements before previous process reforms are fully implemented runs the substantial risk of actually slowing down the reform process.

b. The USDOT is currently working to implement both the MAP-21 and FAST Act project delivery provisions. In your experience both at the State level and at the Federal level, and now in the consulting sector, do project sponsors take full advantage of the existing streamlining provisions and flexibilities that are implemented under current law? Why or why not, and what can Congress do to expand utilization of streamlining provisions?

RESPONSE: Often, streamlining changes – both major and minor – are not fully leveraged by project sponsors and the affected agencies. This is likely due to a number of factors:

- Not all states/sponsors initiate major projects on a regular basis and thus may not be up to speed on very specific policy changes;
- Disseminating updated procedures to multiple federal agencies with varying degrees of autonomy in their field offices often results in inconsistent adoption of new strategies and authorities;
- Implementing regulations are often promulgated long after statutory authority is established and this creates a timing gap that can affect awareness and support for the provisions.

The most effective tool that Congress can wield to encourage broader use of existing streamlining provisions is to incentivize their use. For example, Section 1312 of the FAST Act authorizes DOT grantees to use a portion of their federal funds to support dedicated staff at reviewing agencies to accelerate the environmental review process. This was an expansion of authority enjoyed by FHWA since SAFETEA-LU. However, despite the tremendous success of FHWA's program, no non-highway grantees have exercised this authority. This is clearly a missed opportunity for non-highway projects. A common concern of regulatory agencies when they are faced with ever-decreasing time to comment on or review documents or applications is that they are not adequately resourced to meet the mandated timelines. Section 1312 is a way to directly address this dilemma, yet it is underutilized. Perhaps linking acceleration strategies with a requirement that sponsors flex a portion of their funds to pay for staff at the reviewing agencies to support the acceleration strategy is a means to address the needs of both the sponsor and reviewing agency.

c. In your opinion, will the right legislative solution yield better, faster, and cheaper outcomes?

RESPONSE: Our goal should always be to seek faster, cheaper and BETTER outcomes. I believe that there is no end point for that goal. What we must always guard against is eliminating fundamental process protections for the environment and public interest. Enabling or even requiring better coordination earlier in the process will go a long way towards delivering on that goal, while simultaneously streamlining reviews.

4. *Concurrent Reviews*

a. In her testimony, Ms. Pilconis discussed the importance of merging the NEPA and Clean Water Act Section 404 permit reviews. Can you discuss the work that the

Obama Administration has already done through Administrative means to ensure this happens wherever feasible?

RESPONSE: Merging NEPA and the Clean Water Act (CWA) 404 process is a very valuable tool for complex projects that will have impacts to jurisdictional waters. It aligns federal requirements and helps ensure that the final project satisfies the needs of both USDOT as well as the US Army Corps and the Environmental Protection Agency. Under the Obama Administration's permitting reform efforts, a comprehensive update to the "Red Book," a guide to synchronizing NEPA and the CWA 404 processes for transportation projects, was completed. The updated version, while still primarily focused on transportation, provided a framework for synchronizing decisionmaking across multiple sectors – aligning federal requirements to ensure that NEPA and permitting decisions advance concurrently rather than sequentially. The proposed Gateway rail tunnel under the Hudson River in New Jersey and New York is a current example of a combined NEPA and CWA 404 process that will yield significant time savings and, arguably, better environmental outcomes at the same time. A similar process of synchronizing the NEPA and CWA 404 processes should now become the norm for major projects.

b. In Director Panos' written testimony, he suggested that Congress should allow the USDOT agencies to set project schedules without needing concurrence from participating agencies. Are there risks to this approach, and do you believe that lead agencies always have the information needed to determine the review time needed by other agencies to complete their mandated approvals?

RESPONSE: On a project by project basis, setting agreed upon schedules early is critical to success. Frontloading the permitting process with active engagement and input from all relevant stakeholders at the beginning of a project is vital to ensuring that schedules are met. Schedules are only helpful to speeding up the process if they can be met. Without buy-in on a schedule at the outset, a project runs the risk of missing milestones and deadlines. Although the mechanics of the process are important, the real focus needs to be on identifying project champions, both inside and outside the federal government, who can carry the passion for a project to the team to ensure that stakeholders meet commitments agreed to at the beginning of the process. In practical terms, if the reviewing agencies know that the project enjoys strong support from elected officials and other advocates, they will work hard to meet accelerated review schedules.

5. *Climate Change*
How should public agencies be integrating climate change projections and sea level rise into transportation plans?

RESPONSE: My personal opinion is that integrating climate change projections and sea level rise into transportation plans is prudent project management. In the same way that we account for safety plans or risk mitigation in projects, climate change projections and sea level rise should be incorporated into transportation plans from both an asset

management and resiliency perspective. Most of the major infrastructure projects are designed to serve the nation for decades, and from a life cycle perspective, incorporating climate change and sea level rise projections is the fiscally prudent course of action. Planning and preparing for potential future risks to transportation infrastructure regardless of the cause is the responsible thing to do and failure to prepare for these risks is tantamount to professional malpractice, given the readily available scientific information. The damage caused to the North River Tunnel and multiple East River tunnels in the New York metro area by Hurricane Sandy sent a powerful message regarding the importance of accounting for climate change and sea level rise when building new infrastructure for transportation. For the government to invest money in transportation infrastructure that cannot serve its intended use throughout its life cycle as a result of failure to plan for extreme environmental events constitutes improper fiscal stewardship.

Senator Duckworth:

6. Mr. Porcari, in your view as a former Deputy Secretary of Transportation, should we be concerned that the cuts proposed in President Trump's skinny budget could lead to MORE permitting delays? Unless what industry really wants is a rubber stamp with zero public engagement, don't we need a federal workforce to assist in the permitting process?

   RESPONSE: The proposed cuts to the federal workforce and reduction in essential programs is troubling for a number of reasons. Specifically, as it relates to permitting, eliminating staff positions at federal agencies will slow down their ability to review and approve permit applications and participate in permitting and NEPA coordination meetings. As currently envisioned, the statutorily defined responsibilities of the permitting agencies will not be changed but their resources to implement those responsibilities will be reduced. If the Administration is serious about moving infrastructure projects through the approval process faster, ensuring the permitting agencies have the personnel necessary to actively engage in project development and approval is a prerequisite for success.

7. Mr. Porcari, what effect would closing regional offices have on NEPA implementation?

   RESPONSE: Closing regional offices will likely affect the ability of agencies to meaningfully engage in project development, delaying both the reviews under NEPA as well as any permitting responsibilities of the agencies. Although the decentralized nature of many agencies can lead to some inconsistencies in approach, their localized, on-the-ground knowledge is essential for engaging effectively in the NEPA and permitting processes. If agencies close regional offices and those responsibilities are rolled up to a more centralized location, they will likely lose that localized knowledge, leading to a steeper learning curve and likely greater delays.

Senator Markey:

8. President Trump has proposed cuts of up to 30 percent and wants to dramatically reduce the size of the federal workforce. What do you anticipate could be the impact on the pace of environmental reviews if federal agencies' staffing and budgetary resources are reduced?

   RESPONSE: As stated in my response to a similar question from Senator Duckworth, cuts to the federal workforce and reductions in essential programs at federal agencies will slow down agencies' ability to review and approve permit applications and participate in permitting and NEPA coordination meetings. Ensuring that permitting agencies have the resources to meet their statutorily defined responsibilities and to actively engage in project development is a simple and proven solution to reducing permitting backlogs and improving the pace of environmental reviews.

9. Massachusetts has many wonderful historical treasures, from the Freedom Trail Walk in downtown Boston to the Minute Man National Park in Concord. I believe we can preserve these national treasures while improving our nation's infrastructure by better integrating historic reviews into the planning process. Bringing in experts in historic preservation early in the planning process allows for the greatest amount of flexibility to identify, preserve, conserve, and protect buildings, objects, landscapes, and other artifacts of historical significance. Based on your experience, what are some of the benefits of involving experts in historic preservation in early planning for infrastructure projects?

   RESPONSE: Engaging experts and relevant stakeholders early in the process yields better permitting outcomes. Involving experts in historic preservation in early planning for infrastructure projects lowers the long-term risks to our important cultural and historic resources and, in some cases, can even reduce timelines for development and construction by allowing project sponsors and permitting agencies to engage in innovative solutions to identify, preserve, conserve, or protect resources. Early engagement with such experts can also reduce the likelihood of local opposition, controversy and litigation because it allows for all interested stakeholders to be engaged in the process of conservation and protection. In my personal experience, early engagement and collaboration with historic preservation experts has resulted in better projects, such as the Union Station earthquake remediation renovations in Washington, DC, that both serve their intended infrastructure function and simultaneously celebrate and showcase our rich historical legacy.

10. When major projects are proposed, NEPA often provides the only chance for the public to understand and weigh in on the impacts on their neighborhoods. Do you agree that NEPA enhances our democracy by providing citizens access to information and a voice in decisions that affect their local communities?

    RESPONSE: Yes, public involvement and transparency in government decision-making are cornerstones of NEPA, and the bedrock of good governance. NEPA was enacted to ensure that information on the environmental impacts of federal action is available to public officials and citizens before decisions are made and before actions are taken. NEPA provides an important tool to allow citizens and decisionmakers to weigh the

social, economic, and environmental impacts of proposed actions. It is important to note that there are multiple examples of projects nationwide whose ultimate design has benefitted from this type of input.

11. When the Federal Highway Administration proposed a $290 million project to expand Massachusetts Route 146, MassDOT established a Citizens Advisory Committee (CAC) of residents, business owners, environmental groups, federal and state government representatives, and others to inform the project. By creating the CAC, MassDOT demonstrated exactly what NEPA encourages: public participation. The knowledge and input provided by the CAC was essential to building a highway that respected local business and recreational interests and preserved and protected the environment and rich history of this part of the Commonwealth. Based on your experience as U.S. Deputy Secretary of Transportation and as the Secretary of Transportation in the State of Maryland, can you comment on the beneficial impact NEPA has on informing local citizens, businesses, and other stakeholders and soliciting their input and knowledge in a manner that improves infrastructure projects?

    RESPONSE: Local citizens, businesses, and other stakeholders are often best situated to identify and assess the specific impacts of an infrastructure project. To that end, NEPA provides an invaluable tool for soliciting their input and knowledge to better inform the design, development, and construction of infrastructure projects. For example, at USDOT, it was clear that input from local citizens and businesses regarding the LAX-Crenshaw Green Line extension in Los Angeles resulted in several design changes that yielded better social and environmental outcomes, including improved pedestrian access, street improvements and bus bays, reduced costs for utility relocations, and easier right-of-way acquisitions. Local input was essential to ultimate design of the alignment that reduced curves and therefore improved operations. As a state DOT Secretary, I saw first-hand that transit projects such as the Purple Line, the Intercounty Connector road project and the Woodrow Wilson Bridge replacement all ultimately benefitted from specific, targeted input from stakeholders, local businesses, and community groups.

12. As you know, NEPA empowers the public by creating a right for the public to sue the federal government if agencies fail to follow the law. But, these lawsuits are exceedingly rare. According to the Council on Environmental Quality (CEQ), out of the hundreds of thousands of federal actions subject to NEPA each year, there are typically fewer than 100 lawsuits filed annually. In your experience as U.S. Deputy Secretary of Transportation and as the Secretary of Transportation in the State of Maryland, would you agree that only a tiny share of the federal actions subject to NEPA in any given year actually lead to litigation?

    RESPONSE: Yes, I agree and this conclusion has also been supported by the Government Accountability Office which has specifically examined the issue and found that that most NEPA analyses do not result in litigation. (Government Accountability Office Report GAO-14-370: "National Environmental Policy Act: Little Information Exists on NEPA Analysis, April 2014). In my personal experience at the local, state, and federal level, it is clear to me that only a small fraction of federal actions subject to

NEPA are litigated. This small percentage of litigated actions tend to be very visible, but it is worth noting that having an open, transparent NEPA process is often key to proposed projects withstanding legal challenge.

Senator BARRASSO. Well, thank you very much for the testimony for all of you. We look forward to having a chance to hear the answers to your questions, and I will start with Director Panos.

In your written testimony you stated that "using the current predominantly formula-based FAST Act approach to distribution would ensure both rural and urban States participate in the initiative." You went on to say it would "also help push the benefits of any new infrastructure initiative out to the public promptly."

So is it safe to say that increasing funding through this formula-based process, as opposed to establishing some new process, that is one way to expedite the delivery of additional infrastructure spending and that through the use of a formula-based funding, projects will actually therefore get built faster than they would otherwise?

Mr. PANOS. Yes, Mr. Chairman. You know, we can move projects through the current program structure faster than we could through any new structure that would have to be implemented, although, of course, any streamlining reforms would be helpful. But certainly the existing process would be very effective.

Senator BARRASSO. So you think this is kind of a ready-made way to distribute the funds in terms of we should be considering this for any infrastructure, any comprehensive infrastructure bill?

Mr. PANOS. Yes, Mr. Chairman.

Senator BARRASSO. In your written and oral testimony you have laid out a series of additional targeted streamlining provisions, and you just made a comment about those. Some believe that we should wait until the streamlining provisions of the FAST Act are actually implemented before we consider any additional streamlining. Can you talk about what your response would be to that argument?

Mr. PANOS. Yes, I can, Mr. Chairman. The public is eager to improve our infrastructure. An improved process would help that. So I respectfully disagree with the argument. And we have made it clear on the first page of our written statement that we can streamline requirements and processes while protecting the environment and other public interests. So we ask that our suggestions be considered on their merits. We owe it to the public to look hard for win-wins.

Further, and importantly, Mr. Chairman, some of the issues we address were not ripe during the development of past legislation. The overreaching rules to monitor traffic even on rural routes and HS routes had not been promulgated. Giving a fresh look at stewardship agreements wasn't discussed. So we simply ask for a fair consideration of our ideas on the merits.

Senator BARRASSO. Thank you, Mr. Panos.

Ms. Pilconis, the Associated General Contractors believes that there are still some opportunities to further streamline some of the transportation projects. Now, we all support and commend the bipartisan work that occurred when we passed MAP–21 and the FAST Act, but can you elaborate a little bit on some of the limitations of these streamlining reforms?

Ms. PILCONIS. Some of the limitations of the streamlining reforms that were——

Senator BARRASSO. Of the streamlining reforms that are there in terms of adding some more, yes. Some of the ones that have already come forward through the MAP–21 and the FAST Act.

Ms. PILCONIS. Oh, yes, of course. Well, with the reforms that have already been passed, some of the limitations really lie with the amount of exemptions that are provided within those reforms. So, for example, where there are requirements to conduct concurrent reviews, those requirements can be waived if an agency can say that it would impair their ability to conduct any analysis or meet any obligation. Under the FAST Act, they don't have to do it so long as they could say that it would impair their ability to review the project. So there are significant exceptions to the requirement to conduct concurrent reviews.

Similarly, where there are deadlines within current law requiring you to complete a review within a certain amount of time, so, for example, under MAP–21, there is a 180-day deadline for permits, licenses, or other approvals. Within that 180-day deadline, the agency can say, well, I don't have all of the information that I need to say that that application is complete, or I am waiting for another entity to make a decision before I can move forward. And in that sense the agency, the deciding agency is essentially self-policing because they will say I don't have the information that I need, so I don't have to meet that deadline. And in fact, the lead agency would then have to take the initiative to really elevate that to a level of dispute to say, no, you do have all the information that you in fact need and really, that is just not happening.

Senator BARRASSO. And then are there barriers that still exist within the construction industry that might interfere with the application of, say, new technologies to accelerate some of the project deliveries?

Ms. PILCONIS. I think not barriers, but in fact there are many technologies that provide great opportunities. For example, now that we have aerial photography, drones, GIS data, LIDAR data. In fact, there are so many ways that we are collecting information that can be used in centralized data bases and accessed via the Internet so that we are not repeating processes, so that when you need to conduct a review in a situation where it is a similar project or a similar set of circumstances or similar ecological or natural or resource concerns, you can pull from information that has already been collected, that is logged and categorized, and apply it rather than redoing it.

Senator BARRASSO. My final question, Mr. Panos, my perception is that you have identified a number of ways that we can reduce bureaucracy. But there doesn't seem to be anything that you have promoted or talked about that actually reduces environmental protection. Am I correct that you are continuing to protect the environment?

Mr. PANOS. Yes. I mean, we have focused on improving the process, Mr. Chairman. In addition, we have addressed some areas that are not part of the environmental review process. We cut back on some non-productive data collection requirements and other requirements. That would enable us to put effort and resources into infrastructure, including safety projects.

Senator BARRASSO. Thank you. Thank you very much.

Senator Carper.

Senator CARPER. Thanks again.

Our appreciation to all of you for being here and for helping us with this. This is a great panel, and I want us to use this opportunity to try to develop some consensus, to see where you agree, because to the extent that this panel can agree, it is enormously helpful to us as we go forward.

So let me start out with John. We went down a whole list of items. You gave us five at the end of your testimony.

Did he say anything, Leah, that you actually agreed with in those five comments? And you may want to refresh your memory, and ours as well. Did he say anything in those last five? He said there are five things you ought to do.

Ms. PILCONIS. Things that were sticking out to me were comments that he was making related to the items that are in the FAST Act that are requiring early coordination. There is a large amount in the FAST Act that is dealing with the Federal Permitting Improvement Council that is requiring early consultation, coordinated project planning, the dashboard, laying out your timetables. These things are really going to be very effective at bringing the parties together very early on in the process, getting everybody in the same room and on the same page.

And that is one of the reasons why AGC is suggesting that so much is happening during the NEPA process; it is the umbrella process where all of the other environmental statutes are being brought together, all of the other agencies that have any jurisdiction over the process. And in great part because of FAST Act, reforms are going to be brought to the table to engage in discussion and set some timelines.

So the information that is generated during that time, the data that is collected, the surveys that are done, the mitigation plans that are written into the final environmental impact statement, that should be used to meet the permitting obligations. So that will be helpful.

Senator CARPER. Good.

I am going to turn the tables. Leah went through a whole list of things in about half of her statement, just one after the other that we ought to do, could do to help expedite the processes and maybe get better results for less money. Just thinking back to some of the things that she mentioned, anything there that you find had special value?

Mr. PORCARI. Great question, Senator. If I may, first, Director Panos pointed out that the vast majority of projects are proceeding under categorical exclusion, and we shouldn't forget 95 percent or so, there are more CATEX categories in broadening that can help those projects. But for the major projects, which are the visible ones, the 5 percent or so, the type of process that Leah described, where you are front loading it, where the collaboration among the agencies is required in the beginning so that you don't have conflicts down the road, or the a-ha moments late in the process where you essentially have to start over, that is both common sense. It is encouraged in the FAST Act, and it is something I think we all agree, when it happens in practice, you get great results, for example, with the Tappan Zee Bridge.

Senator CARPER. All right.

Mr. Panos, great to see you again. Elaine Chao is our Secretary of Transportation. I think she will be a good one. She was quoted as saying the other day, the problem is not the money, with respect to actually moving projects along, transportation projects along. The problem is not the money. I had a delightful meeting with her about a week ago, and we talked about how money could help solve some of the problems.

Do you agree the problem is not the money?

Mr. PANOS. Senator, I do agree that the problem is both money and process. We have to have both in parallel. As we deploy the money, we need——

Senator CARPER. Good. That is all you need to say.

Leah, do you agree with that? Is it both? Can we walk and chew gum at the same time? Is money part of the problem, as well as the process?

Ms. PILCONIS. Yes, absolutely.

Senator CARPER. And John.

Mr. PORCARI. It absolutely is. And if I may give a project example, the Gateway Project, multibillion dollar project tunnel under the Hudson River. We have a 24-month EIS process. It is half the usual time. It is the money part that is going to hold up the replacement of that 106-year-old tunnel.

Senator CARPER. I just say to my colleagues I think we are spending about—I want to say, roughly $56 billion a year out of Federal dollars for roads, highways, bridges projects, something like that. I think the revenues that are coming in are about $36 billion a year. And somewhere those lines cross, and we run out of money again, and we need to be serious about all these huge backlogs of projects we have across the country. We have to be serious about doing something about it. Streamlining, fine. We have done some. Is there more that we can do? If we use common sense, I am sure there is. But we need the money.

It was the Beatles who used to sing the best things are free, but you can give them to the birds and bees; I want money. We need some revenue. And the idea of the users paying for this stuff, user fee approach I think is certainly a good way to go. We have always done that. Those who use roads, highways, bridges pay for them; businesses, people. I think that is still a pretty good approach.

Thank you all so much.

With apologies to McCartney and Lennon.

Senator INHOFE [presiding]. Thank you, Senator Carper.

First of all, I ask unanimous consent that included in the record a letter from ARTBA, the American Road and Transportation Builders Association. It is very revealing. It is a statement concerning streamlining.

Without objection, that will be part of the record.

[The referenced information follows:]

Infrastructure Project Streamlining and Efficiency: Achieving Faster, Better, and Cheaper Results

Statement of the American Road and Transportation Builders Association

Submitted to the United States Senate Committee on Environment and Public Works

May 3, 2017

On behalf of the American Road and Transportation Builders Association (ARTBA) and its more than 6,000 member firms and public agencies nationwide, the association would like to thank Chairman Barrasso and Ranking Member Carper for holding today's hearing on "Infrastructure Project Streamlining: Achieving Faster, Better and Cheaper Results."

ARTBA, now in its 117th year of service, provides federal representation for more than 6,000 members from all sectors of the U.S. transportation construction industry. ARTBA's membership includes private firms and organizations, as well as public agencies that own, plan, design, supply and construct transportation projects throughout the country. Our industry generates more than $380 billion annually in U.S. economic activity and sustains more than 3.3 million American jobs.

ARTBA members must directly navigate the regulatory process to deliver transportation improvements. As such, they have first-hand knowledge about specific federal burdens that can and should be alleviated.

Significant progress was made on a bipartisan basis to streamline the permitting and approval process for transportation improvements in the past three reauthorizations of the federal surface transportation program: the Transportation Equity Act for the 21st Century (TEA-21) of 1998; the Safe, Accountable, Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005; the Moving Ahead for Progress in the 21st Century (MAP-21) Act of 2012; and, most recently, the "Fixing America's Surface Transportation (FAST) Act of 2015. Each of these measures provides valuable insight about the successes and failures of legislative

efforts to reduce delay in the delivery of needed transportation projects without sacrificing regulatory safeguards.

ARTBA recognizes that regulations play a vital role in protecting the public interest in the transportation project review and approval process. They provide a sense of predictability and ensure a balance between meeting our nation's transportation needs and protecting vital natural resources. These goals, however, do not have to be in conflict. The most successful transportation streamlining provisions have been process oriented and essentially found a path for regulatory requirements to be fulfilled in a smarter and more efficient manner.

According to a report by the U.S. Government Accountability Office prior to the enactment of MAP-21, as many as 200 major steps were involved in developing a transportation project, from the identification of the project need to the start of construction. The same report also shows it typically takes between nine and 19 years to plan, gain approval of, and construct a new major federally-funded highway project. This process involves dozens of overlapping state and federal laws, including: the National Environmental Policy Act (NEPA); state NEPA equivalents; wetland permits; endangered species implementation; and clean air conformity.

Further, project delays carry severe financial consequences. According to a 2016 report by the Texas A&M Transportation Institute, project delay is estimated to cost $87,000 per month for small projects (e.g., reconstruction), $420,000 per month for medium-sized projects (e.g., widening) and $1.3 million per month for large projects[1]. Both political parties recognized that the current system was simply too long and too expensive of a way to deliver transportation projects that improve mobility and safety. As such, finding meaningful ways to expedite this process has been a congressional priority for more than 15 years.

Reducing Project Delay

Reducing the amount of time it takes to build transportation improvements was first addressed in 1998 with the passage of TEA-21. Efforts to reduce delay in this legislation concentrated on establishing concurrent project reviews by different federal agencies. The concept was that multiple reviews done at the same time, as opposed to one after the other, would reduce the amount of overall time it took to get a project approved. While this improvement was a step in the right direction, it had limited impact, as concurrent reviews were discretionary, rather than mandatory. Thus, it was up to the federal agencies involved in a project whether or not to take advantage of this new benefit.

In 2005, SAFETEA-LU sought to further reform the project delivery process by establishing a wider range of new ways to deliver transportation improvements. Specifically, SAFETEA-LU gave greater authority to the U.S. Department of Transportation (U.S. DOT) as "lead agency" during the project delivery process, limited the window during which lawsuits could be filed against projects, and reformed the process for determining impacts on historical sites and wildlife refuges.

[1] "Assessing the Costs Attributed to Project Delay During Project Pre-Construction Stages," Texas A&M Transportation Institute, March 2016, available at: https://static.tti.tamu.edu/tti.tamu.edu/documents/0-6806-FY15-WR3.pdf.

SAFETEA-LU represented a far more expansive reforming of the project delivery process, by addressing the schedule for project reviews and also factors outside of the process itself which contribute to delay. SAFETEA-LU also went further than TEA-21 in that some of its reforms, such as the limitation on lawsuits, were mandatory, as opposed to optional.

The clear lesson between the 1998 and 2005 surface transportation bills was that simply giving federal agencies the ability to complete regulatory reviews in a more efficient manner in no way guarantees that authority would be utilized. As such, SAFETEA-LU took more aggressive steps to influence non-transportation agencies into making transportation project reviews a higher priority.

While SAFETEA-LU's environmental streamlining provisions were a significant step forward from those enacted in TEA-21, the transportation project delivery process remained at an unacceptable pace. As such, both MAP-21 and the FAST Act took project delivery reform even further, with more tools for reducing delay. In addition to building upon the concept of "lead agency" begun in SAFETEA-LU, MAP-21 and the FAST Act also included specific deadlines for permitting decisions as well as a scheduling mechanism to ensure environmental impact statements (EISs) do not take longer than four years. As with SAFETEA-LU, however, it is important to note that many of the reforms made in MAP-21 and the FAST Act were discretionary. The more state and federal agencies choose to use these reforms, the greater the impact will be.

Expansion of the Use of Categorical Exclusions (CEs)

One of the most significant changes to existing law in both MAP-21and the FAST Act was an expansion of the use of CEs during the environmental review process. A CE is used when projects create minimal impacts on the environment. The difference between a CE and an environmental assessment (EA) or EIS is multiple years added on to the amount of time it takes to complete a project review. Under MAP-21, many sorts of routine projects were automatically classified as CEs, these include rehabilitation and repair projects, projects within an existing right-of-way, projects with minimal federal resources and projects undertaken as a result of an emergency situation. Expanding the use of CEs to these additional areas enables local governments to have more certainty as to when a CE can be used and also allows routine projects to be undertaken without burdensome, unnecessary levels of review.

MAP-21 also called for the development of CE guidelines for projects being constructed in response to an emergency or natural disaster. To qualify for CE status, such a project must be of the same mode/type and in the same right-of-way as the facility it is replacing and started within two years after the emergency/natural disaster. It should be noted that MAP-21 also offers states additional flexibility in emergency situations by allowing the issuance of special permits to overweight vehicles delivering relief supplies and allows states to use any federal highway program apportionments other than those dedicated for local governments to replace transportation facilities damaged by a national emergency.

Only three months after the emergency/natural disaster CE was promulgated by the U.S. Department of Transportation (U.S. DOT), it was put to use in May 2013 when a truck hit the I-5 Skagit River Bridge in Mount Vernon, Washington. Application of the CE allowed repairs to the

bridge to begin swiftly, and correctly recognized that in times of emergency, the focus should be on responding as promptly and effectively as possible. Specifically, in this instance repairs began within 24 hours after the accident and the bridge was re-opened to traffic in just 27 days and fully repaired within 115 days.

MAP-21 also created a CE for projects within an existing right-of-way. This is a logical application of the CE process, as an environmental review would have already had to be completed in order for the right-of-way to be obtained. Thus, requiring a second environmental review for a project within that right of way is duplicative and adds no additional environmental protection. The Texas Department of Transportation (TXDOT) noted a Houston widening project undertaken prior to MAP-21 involving a widening of a four-lane road. Although no additional right-of-way was required, an EA was deemed necessary. The EA took three years and costed $100,000. Under MAP-21, that same project would qualify for a CE and be completed in a fraction of the time and cost.

NEPA was never meant to be a statute enabling delay, but rather a vehicle to promote balance. While the centerpiece of such a balancing is the environmental impacts of a project, other factors must be considered as well, such as the economic, safety, and mobility needs of the affected area and how a project or any identified alternative will affect those needs. Allowing certain types of projects to be classified as CEs is a very effective way of reducing delay in the review and approval process, ensuring that projects with minimal environmental impacts are not put through a needlessly long regulatory process.

Delegation of Environmental Review Responsibilities

Under SAFETEA-LU, a pilot program was established allowing five states (California, Alaska, Ohio, Texas and Oklahoma) to assume the role of the federal government during the NEPA process. MAP-21 expanded the opportunity to participate in the program to all states. States choosing to take part would conduct their own environmental reviews, potentially saving time as a result of not having to go through multiple federal agencies.

Of the five states allowed to participate in the delegation pilot program under SAFETEA-LU, only California chose to do so and was approved in 2006. Under MAP-21, Texas was approved to participate in December of 2014. More recently, Ohio applied for the delegation program in 2015 and has just had its first federal audit while both Florida and Utah submitted applications last year.

The Committee needs only to look to California and Texas—the two states which have the longest running NEPA delegation programs—to see what continued use of the delegation program can achieve. Specifically, an October 30, 2015, fact sheet published by the California Department of Transportation demonstrates the following significant reductions in delay preparing environmental review documents:

- Draft EAs have seen a median time savings of 10.7 months;
- Final EAs and Findings of No Significant Impact (FONSI) have seen a median time savings of 11.5 months;
- Draft EISs have seen a median time savings of 22.9 months, and;

- Final EISs have seen a median time savings of 130.8 months—nearly 11 years[2]!

Similarly, the Texas Department of Transportation has (TXDOT) credited NEPA delegation with increased time savings, a more organized internal project delivery program and greater predictability.[3] Further, the Ohio Department of Transportation (ODOT) estimates the time saved by NEPA delegation will lead to a cost savings of $45 million once the Ohio program is fully established[4].

Put succinctly, NEPA delegation works. As FHWA stated on December 22, 2016, "The NEPA Assignment Program reduces duplication, saves time and resources, and avoids compromising our high standards for protecting the human and natural environment. Empowering states in this way saves time and money, making it good government AND good business."[5]

Additionally, MAP-21 allows states to also assume control of just the CE process as opposed to full environmental reviews. TXDOT has experienced a significant reduction in the time it takes to review CEs through this partial delegation program. Prior to assuming responsibility for CE review, the process took about one year. Under the program, the average time is now less than 45 days. Further, the documentation requirements have been reduced. CEs which used to span more than 100 pages are now two-page checklists. Utah has also assumed control of the CE process under MAP-21 and is now completing CEs in as little as six days for routine projects. Finally, Alaska has also assumed responsibility for CEs and is experiencing favorable results from the program.

While the reason for non-participation thus far by the other states has varied, potential liability and litigation costs were an overriding issue, as the state would also be assuming federal responsibilities for litigation over any project where delegation was used. Still, ARTBA believes delegation of environmental review responsibilities to states could be an important tool to save resources and speed project delivery without sacrificing regulatory safeguards.

Greater Strength for "Lead Agencies"

SAFETEA-LU established DOT as the "lead agency" for the environmental review of transportation projects, including "purpose and need" and "range of alternatives" determinations. MAP-21 expanded upon this authority by allowing DOT, as the lead agency for all transportation projects, to name a single modal administration as the lead agency in the case of multi-modal projects. The secretary of transportation also may, within 30 days of the closing of the comment period for a draft EIS, convene a meeting of the lead agency, participating agencies and project sponsor to set a schedule for meeting project deadlines. This new authority allowed the U.S. DOT to be the focal point of the review process, as opposed to a peer on equal footing with non-transportation agencies.

---

[2] Available at http://www.dot.ca.gov/hq/env/nepa/pdf/nepa_assignment_fact_sheet_q33_oct2015_rev.pdf.
[3] See December 8, 2015 testimony of Carlos Swonke, Director of Environmental Affairs, Texas Department of Transportation before the House Committee on Oversight and Government Reform Subcommittee on Transportation and Public Assets, available at: https://oversight.house.gov/wp-content/uploads/2015/12/12-8-2015-Transportation-Subcommittee-Hearing-on-MAP21-Swonke-TX-DOT-Testimony.pdf.
[4] Available at https://www.dot.state.oh.us/NEPA-Assignment/Pages/NEPA_Assignment_History.aspx.
[5] Available at https://www.transportation.gov/fastlane/fhwa%E2%80%99s-%E2%80%98every-day-counts%E2%80%99-initiative-empowering-states.

The opportunities to reduce the delay caused by inter-agency conflict provided by SAFETEA-LU, MAP-21 and the FAST Act in the area of lead agency are significant. However, these reforms are only effective to the degree that the U.S. DOT chooses to take advantage of them. In other words, it is not mandatory that the agency take advantage of any of the benefits of "lead agency" status.

Even as an optional tool, though, "lead agency" status is an important mechanism for improving the project delivery process.

Additional Project Delivery Reforms

MAP-21 also improved project delivery by limiting the time during which lawsuits may be filed against projects. This concept was also part of SAFETEA-LU. SAFETEA-LU set a deadline of 180 days after the issuance of a federal decision on a project for the filing of a lawsuit. MAP-21 shortened this deadline to 150 days. Establishing a firm deadline for lawsuits ensures that any possible litigation is dealt with at the beginning of the delivery process. By addressing conflicts early, planners then are able to set schedules without fear of litigation after the deadlines have passed. Further, the deadline allows conflicts to be heard and resolved sooner, rather than later.

Under MAP-21, project sponsors were allowed to request the Secretary of Transportation to set an expedited schedule for projects undergoing an EIS for more than two years. This schedule would ensure the project's EIS would be completed within two additional years. MAP-21 also establishes new deadlines for permitting decisions from federal agencies. If these deadlines are not met, the agencies suffer financial penalties. It should be noted, however, that these provisions of MAP-21 have not yet been utilized and it remains to be seen how they would work in practice.

Still More Work to Do

Unfortunately, a number of the MAP-21 and FAST Act project reforms mentioned do not have many examples upon which to evaluate their success. A major reason for this is the uncertainty over long-term federal funding. Federal funds, on average, support 52 percent of annual state department of transportation capital outlays for highway and bridge projects. Uncertainty surrounding the short and long-term fiscal condition of the Highway Trust Fund continues to have a significant effect on state transportation planning.

Following the expiration of MAP-21 and prior to the passage of the FAST Act in December of 2015, Congress put in place a series of short-term program extensions and temporary Highway Trust Fund revenue patches to keep highway and public transportation funds flowing to the states. This period of uncertainty led DOT officials in 35 states to publicly declare their state programs would be impacted by a shutdown of the federal surface transportation funds. In fact, eight states delayed or canceled projects valued at $1.90 billion.

The types of projects which require an EIS (and sometimes even an EA) are complex, multi-year projects. Without the assurance of long-term federal funding, states were often reluctant to proceed with such projects. With the FAST Act's assurance that federal investment will be

provided through FY 2020, states will hopefully undertake more long-term transportation construction projects and we will have a better opportunity to witness more project delivery reforms in practice. Still, the long-term stability of the Highway Trust Fund needs to be addressed to provide states full confidence to undertake large-scale new transportation improvements.

Additionally, the Committee must examine regulatory requirements outside of the transportation review and approval process which also impact transportation construction. While all regulations have a place and a purpose, care should be taken to ensure the progress being made by U.S. DOT's project streamlining efforts is not being needlessly diluted by extraneous requirements. To that end, ARTBA has attached our January 2017 report entitled "Ripe for Reform: Federal Regulatory Issues Impacting Transportation Project Delivery" to this statement. The report highlights a number of areas for the Committee's consideration where ARTBA feels targeted reforms could make a large impact in the project delivery process.

Conclusion

The transportation sector has made significant strides in the area of project delivery. Beginning with TEA-21 and continuing through to the FAST Act, members of both parties have worked together to ensure our nation's infrastructure continues to improve at a pace matching the growth of our country. Continuing to streamline the project review and approval process for our nation's infrastructure is essential in assuring the public the government is making every dollar spent of transportation go as far as possible without sacrificing necessary regulatory safeguards. ARTBA looks forward to continuing to work with the Committee on these efforts.

Ripe For Reform: Federal Regulatory Issues Impacting Transportation Project Delivery

January 2017

Ripe For Reform: Federal Regulatory Issues Impacting Transportation Project Delivery

January 2017

ARTBA's membership includes private and public sector professionals integral to the planning, designing, construction and maintenance of the nation's roadways, waterways, bridges, ports, airports, rail and transit systems. Our industry generates more than $380 billion annually in U.S. economic activity and sustains more than 3.3 million American jobs. Above all, these transportation construction professionals are committed to delivering projects as safely, efficiently and timely as possible. However, numerous regulatory provisions, including many initiated or revised by the Obama Administration, have made these objectives more difficult to achieve on federal-aid projects. In carrying out a significant and needed increase in federal transportation investment, the Trump Administration also has the opportunity to improve these regulations and reverse counterproductive administrative actions of recent years. Lessening the transportation construction industry's unreasonable regulatory burden will maximize the value of the significant new dollars being invested in transportation improvement projects, unleash innovation in designing and building them, and take full advantage of job-creation possibilities.

On the following pages, there is a summary of these regulatory issues, their status and specific ways in which they affect the transportation construction industry.

Table of Contents

U.S. Department of Transportation
DBE Program....1
Geographic-Based Hiring Preferences....3
Project Labor Agreements....3
Hours of Service....4
Greenhouse Gas Emissions....4
Buy America....5
Proprietary Products....5
CAFE Standards....6

U.S. Environmental Protection Agency
Waters of the U.S....6
Nationwide Permits....6
Air Quality Standards....7
Carbon....7

U.S. Department of Labor
Silica Exposure....7
Recordkeeping....8
"Fair Play and Safe Workplaces"....8
Overtime Regulations....9
Paid Sick Leave....9
Standards Improvement....9

U.S. Department of the Interior
Endangered Species....10

U.S. Equal Employment Opportunity Commission
EEO-1 Form....10

White House Council on Environmental Quality
Greenhouse Gas Reviews....11

ARTBA Staff Contacts....11

U.S. Department of Transportation (U.S. DOT)

Disadvantaged Business Enterprise (DBE) Program (49 C.F.R. Part 26)

The DBE program "is designed to remedy ongoing discrimination and the continuing effects of past discrimination in federally-assisted highway, transit, airport, and highway safety financial assistance transportation contracting markets nationwide." At the same time, it is a key – and often perilous – area of compliance for contractors on federal-aid projects.

The Obama Administration made significant revisions to the DBE program, primarily through rulemakings completed in 2011 and 2014. In many respects, U.S. DOT has revised and interpreted the DBE rule in ways that tend to add project costs, increase risk for prime contractors and do little to demonstrably enhance opportunities for DBE firms. In practice, the administration has also selectively reversed the longstanding policy (originating in case law) of allowing state transportation agencies the flexibility to craft DBE programs based on their particular markets. The administration has offered little empirical justification for these rule changes and interpretations, beyond third-hand anecdotes.

Here are examples of issues to address in reforming implementation of the DBE program for the benefit of all parties:

- **DBE Program Goals** (49 C.F.R. Part 26, Subpart C) – For a state's DBE program to work effectively, it is imperative to establish a DBE participation goal which accurately reflects the local market. In the case of its highway program, a state DOT often hires an outside consultant to conduct a disparity study. The state agency assesses the results and submits a DBE program goal to the Federal Highway Administration (FHWA). On occasion, the state DOT will be recommending a more realistic, lower-percentage DBE goal to better reflect the local market and its DBE capacity. However, via the 2014 DBE rule change and in practice, U.S. DOT has established a strong presumption against the downward adjustment of DBE goals, no matter how compelling the state agency's case. The Department should change this practice and give more deference to state transportation agencies in this regard.

- **Good Faith Efforts** (49 C.F.R. §26.53 and Appendix A) – The DBE rule requires prime contractors to make "reasonable" efforts to meet a project's DBE goal, while allowing prime contractors to reject DBE subcontractors if their quoted prices are "unreasonable." However, the current U.S. DOT (and its predecessors) have never clarified or quantified the meaning of these important terms. Moreover, some states maintain unofficial – and illegal – policies of not granting good faith effort waivers for prime contractors who cannot meet DBE project goals for documented and legitimate reasons. The next U.S. DOT should ensure that all state transportation agencies follow the law in this regard. Moreover, the vagueness of this – and other aspects – of the DBE rule can result in inconsistent enforcement across the states, which in turn undercuts the credibility of the DBE program as a whole.

In a related issue, prime contractors must sometimes replace a DBE subcontractor who is not performing or has gone out of business. Despite the challenges in finding another available DBE subcontractor in the same discipline, often at a later stage of a project, U.S. DOT revised the rule in 2011 and 2014 to increase sanctions for prime contractors deemed not to follow these elusive good faith efforts requirements.

- **Counting the Purchasing of Materials and Leasing of Equipment** (49 C.F.R. §26.55(a)(1)) – It is common industry practice for a subcontractor to purchase materials or lease equipment from the prime contractor on a project, particularly if the prime contractor offers the best price and/or represents one of the only options if the project is in a remote location. Under a longstanding interpretation of the current DBE rule, the value of these transactions does not count toward the DBE project goal. Despite compelling testimony from both prime contractors and DBE subcontractors on this issue, U.S. DOT declined to change this provision in its 2011 rulemaking. The Department should revisit this interpretation of the DBE rule and stop penalizing DBE subcontractors who are simply seeking the best prices for material and equipment.

- **Liability for Certifications** – Prime contractors should have a safe harbor when utilizing subcontractors who have been certified as DBEs by the appropriate public agencies. Unfortunately, when reviewing DBE certifications years later, some investigative authorities have actually held prime contractors criminally liable for improperly-certified DBEs. A potential DBE rule improvement would protect prime contractors in these situations.

- **Implementation of the DBE Rule** – U.S. DOT concluded an extensive revision of the rule in 2014, addressing approximately 30 different provisions. In some cases, U.S. DOT moderated draconian changes it had proposed at the beginning of the rulemaking in 2012. In practice, though, since the rule changes have taken effect, U.S. DOT has used the program review process at the state level to implement priorities not included in the final rule. Examples from particular states include requiring prime contractors to submit their DBE subcontractors at time of bid, making it more difficult to count credit for materials provided by DBE firms who are "regular-dealers," and reclassifying the North American Industry Classification System (NAICS) code assignments for DBE firms, making them summarily ineligible for the DBE program. As noted, rather than a prescriptive approach intended to enforce policy priorities, U.S. DOT should allow states the flexibility to craft a DBE program reflecting their respective markets, within the parameters of the law.

- Other recent DBE program issues have involved (but have not been limited to) **Prompt Payment and Retainage** (49 C.F.R. §26.29), **Counting of DBE Trucking Services** (49 C.F.R. §26.55(d)) and **Joint Checks and Retainage** (see U.S. DOT's "Official Questions and

Answers (Q&A's) Disadvantaged Business Enterprise Program Regulation (49 CFR 26)"). Guidance on these issues should better reflect standard industry practices.

Geographic-Based Hiring Preferences (2 C.F.R. Part 1201)

Federal law (23 U.S.C. §112) requires construction contracts on federal-aid projects to be awarded on a competitive, low-bid basis. For this reason, U.S. DOT has prohibited state and local transportation agencies from instituting hiring preferences for their contractors based on geography, economic status, or other categorizations. In March 2015, U.S. DOT announced that, based in part on a new legal opinion from the U.S. Department of Justice, it was proposing to end this prohibition through a formal rulemaking, and also instituting a pilot project through which the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) could consider and approve hiring preferences submitted by state and local agencies.

In reality, local hiring preferences can add to the cost of projects, as contractors must account in their bids for the increased risk of hiring untrained or unnecessary workers under these mandates. They raise serious safety concerns, in that contractors will likely need to hire individuals with inadequate training or self-awareness to safely function in a work zone. It is also likely that contractors would have to displace existing workers or break up work crews in favor of new workers qualified solely because of their place of residence.

An appropriations provision for FY2016, still in effect, put sensible limits on any hiring preferences, requiring a transportation agency to certify that it would not displace current workers or increase project costs, and that a qualified pool of local workers was available. The Office of Management and Budget (OMB) is now reviewing U.S. DOT's proposed rule change allowing local hiring mandates. The new administration should return to the long-standing policy of prohibiting hiring preferences for the reasons stated above.

The transportation construction industry's opposition to mandatory local hiring quotas should not be construed as resistance to creating employment opportunities in local communities. Through ongoing or project-specific partnerships, numerous contractors have worked successfully with public agencies and community groups to meet and exceed voluntary hiring goals of various types. This remains the best way to achieve the objectives that underlie the Obama Administration's local hiring mandates.

Project Labor Agreements (PLAs) (Executive Order 13502)

In February 2009, the Obama Administration issued an executive order requiring project labor agreements (PLAs) on certain direct federally-funded construction projects, and encouraging their use on federal-aid projects. This action essentially reversed an executive order on this subject from the Bush (43) Administration. PLAs mandate the use of union labor on a construction project. The vast majority of ARTBA members – whether those utilizing a union or non-union workforce – oppose the mandating of PLAs. Among other shortcomings, these agreements can undermine existing collective bargaining agreements, create union jurisdiction

issues and limit competition among contractors, which can drive up costs. The incoming administration should reverse the Obama executive order on PLAs, prohibiting their use on federally-funded projects and discouraging their use on federal-aid projects.

Hours of Service (HOS) for Motor Carrier Operators (49 C.F.R. Part 395)

The hours of service rule, which limits driving on on-duty time for motor carrier operators, was intended to address fatigue in long-haul drivers. In contrast, transportation construction drivers are normally limited to a smaller geographic area, and typically do not spend many hours per day on the road. Over-application of the HOS rule to this industry often adds costs to projects by disrupting delivery of materials and efficient employment of personnel on the job site, particular problem when public agencies and motorists expect projects to be completed as quickly as possible. Congress and/or the Federal Motor Carrier Safety Administration (FMCSA) have exempted the drivers in many industries from aspects of the HOS rule, and in fact construction drivers benefit from some limited exemptions. FMCSA should work with the transportation construction industry to exempt its short-haul drivers from as much of the HOS rule as possible.

Measurement of Greenhouse Gas (GHG) Emissions from Transportation Projects (81 Fed. Reg. 23806 (2016); also 23 U.S.C. §150(c)) and Extraneous Policy Priorities

FHWA has proposed to measure and report greenhouse gas emissions from new transportation projects. The proposal is ostensibly part of larger performance measures required under the 2012 "Moving Ahead for Progress in the 21st Century" (MAP-21) surface transportation reauthorization law. In reality, though, FHWA's proposal exceeds both the authority of the FHWA and the intent of MAP-21. Neither Congress nor the Obama Administration sought to include emission measurements in MAP-21's performance management section, nor were such provisions included in MAP-21's successor, the "Fixing America's Surface Transportation" (FAST) Act, passed in December 2015. Both MAP-21 and the FAST Act passed both houses of Congress with broad bipartisan majorities.

In short, the intent of Congress on this issue is clear, but the current administration has sought to inject its policy policies priorities into the associated rulemaking. In California, assessing transportation projects through GHG emissions has led to permitting delays and required mitigations that have added costs and time to projects. Federal-aid project planning and delivery should only follow this model if it is Congress' intention to do so. Since that is clearly not the case, the next administration should withdraw the proposed GHG measurement system and stay within the scope of current law.

Further, the GHG issue represents just one example of the Obama Administration's attempting to further extraneous policy priorities through the rulemaking process and other activities. Although not directed to do so by Congress, the current administration has made discretionary funding decisions or created programs relating to its own priorities like "livability" or favoring one mode of transportation over another. The next administration should cease these rogue

activities and implement the federal transportation programs consistent with congressional intent.

Buy America (23 C.F.R. §635.410)

The Buy America law, dating to the early 1980's, requires that steel or iron components "permanently incorporated" in federal-aid highway projects be manufactured in the United States, subject to possible waivers and exemptions. The transportation construction industry acknowledges the important public policy rationale for this law, namely that federal-aid highway and transit investments should "support an entire supply chain of American companies and their employees."

In extreme cases, though, the administrative costs of ensuring Buy America compliance can outstrip the value of the products themselves, creating a net economic negative. FHWA is currently addressing these outlier scenarios through a rulemaking which would formalize two exemptions to these requirements, including for "miscellaneous steel or iron products" (such as nuts, bolts and tie wires). ARTBA supports these exemptions, as well as – generally speaking – a common sense interpretation of the Buy America rule, through which transportation construction contractors should not be unreasonably burdened to comply. An extreme interpretation of the rule – such as requiring Buy America documentation for products worth literally pennies apiece – can result in delays and administrative costs that far outweigh the value of the components in question. Besides the current rulemaking on the exemptions described above, FHWA has been exploring possible ways to update and "modernize" the rule, a process which started with an advance notice of proposed rulemaking in 2013. FHWA's current and future rulemaking on Buy America should seek to prevent outlier interpretations that undermine efficient delivery of transportation projects.

Proprietary Products (23 C.F.R. §635.411)

This decades-old regulation prohibits the expenditure of federal-aid highway funds on proprietary products. Since many new technologies — particularly those that mark a significant advance in quality, performance, or durability — incorporate intellectual property protected by patents or proprietary processes, this provision inevitably impedes the development and deployment of those same innovations that various Congressional and U.S.DOT/FHWA initiatives are intended to foster. The regulation does provide for limited exceptions to the general prohibition, and accordingly the FHWA issued guidance to its division administrators in 2011 confirming these opportunities to use patented or proprietary products on federal-aid projects. Unfortunately, a number of logistical and human factors stemming from this regulation continue to unnecessarily obstruct product innovations that could enhance the safety and efficiency of the U.S. surface transportation network. This includes inconsistent application of the rule across the states.

Ideally the proprietary products regulation should be repealed and states should be given the flexibility to decide whether or not to use proprietary products on federal-aid eligible projects.

Alternatively, FHWA should consult with other federal agencies (including the Department of Defense and NASA) to determine how they successfully strike a balance between ensuring competition while taking full advantage of innovations.

Corporate Average Fuel Economy (CAFE) Standards (42 U.S.C. §7521(a) and 49 U.S.C. 32,904(c))

Proposals to increase fuel efficiency without compensating the Highway Trust Fund for accompanying revenue loss would exacerbate the trust fund's current structural revenue deficit and erect an even bigger obstacle to transportation infrastructure improvements. In 2012, ARTBA submitted comments to the National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency noting the revenue loss to the Highway Trust Fund from NHTSA's proposed fuel economy standards would exceed $70 billion over 15 years.

U.S. Environmental Protection Agency (EPA)

Waters of the United States (WOTUS) Rule (80 Fed. Reg. 37054 (2015))

The EPA and the United States Army Corps of Engineers (Corps) would greatly expand federal jurisdiction under the Clean Water Act (CWA). Under the rule, roadside ditches would be considered subject to federal jurisdiction if they filled with water (such as after a rainstorm). Transportation construction projects would face increased prospects of litigation and unnecessary delays due to greater permitting requirements. The rule is currently in litigation and has been stayed by a federal appellate court. ARTBA is part of a broad coalition opposing the rule.

Nationwide Permits (33 U.S.C. §1344(e)(1) and 81 Fed. Reg. 35,186 (2016))

Nationwide permits allow regulated industries to save time by not having to obtain individual permits for projects that "cause only minimal adverse environmental effects." Permission to operate under a nationwide permit is usually obtained in an average of 10 months, while individual permits can take over two years. Thus, an effective nationwide permit program is essential in reducing regulatory delay and keeping transportation construction projects moving. The WOTUS rule would drastically expand the jurisdiction of the Corps and EPA to require permitting for virtually any wet area, including roadside ditches. If implemented, it would decrease the amount of activities that qualify for nationwide permits and increase the need for time-consuming individual permits. While the WOTUS rule should not move forward (see the previous description), the Nationwide Permits program should be exempt from the rule if it does.

The transportation constriction industry is also awaiting EPA's renewal of the Construction General Storm Water Permit, planned for 2017. In this new version, the EPA should reverse the recent trend of more prescriptive, onerous permitting, which adds costs and delays to projects.

National Ambient Air Quality Standards (NAAQS) (40 C.F.R. Part 50)

Under the Clean Air Act, the EPA must review NAAQS for six different pollutants every five years. NAAQS compliance is a particularly important issue for the transportation construction sector, as counties which do not meet Clean Air Act standards can have federal highway funds withheld. These funds are important to areas aiming to improve air quality through transportation improvements which ease congestion. Overall, EPA must reform the manner in which it reviews NAAQS. Local officials need some sense of predictability in order to develop long-range transportation plans to achieve emissions reduction goals. In many instances, counties are focusing on addressing existing NAAQS. Any additional changes to the standards are akin to "moving the goalposts in the middle of the game."

Social Cost of Carbon (SCC) (79 Fed. Reg. 19777 (2014))

The SCC, which was developed in 2010 by a group of 13 federal agencies, is "an estimate of the monetized damages associated with an incremental increase in carbon in any given year." Various organizations have raised concerns over the methods used in calculating SCC and whether or not SCC has undergone an adequate notice and comment process in prior agency rulemakings. The SCC as a measurement needs to be further defined before it is used in guidance and/or regulation. This could be accomplished by further study and additional opportunities for participation and comment by the regulated community.

U.S. Department of Labor (DOL)

Crystalline Silica Exposure (81 Fed. Reg. 16285 (2016))

In March 2016, the Occupational Safety and Health Administration (OSHA) issued new regulations that will significantly tighten the existing federal standard for allowable worker exposure to crystalline silica dust. The new rule, which was decades in the making, is based on outdated health data. In setting the new standard, OSHA has relied on studies from as far back as the 1930s. More recent data clearly shows silica exposure has been dramatically reduced under the existing standard. According to the Center for Disease Control (CDC), deaths due to silicosis have declined 93 percent over the past 39 years. The new rule is also based on faulty economic data. OSHA estimates compliance with the new rule will "only" cost the construction industry about $659 million per year. However, an economic analysis of the proposed standard, conducted by Environomics, Inc. for the Construction Industry Safety Coalition (CISC), shows the industry burden will be nearly $2.2 billion per year. The rule is currently being litigated in the federal courts. The compliance date for the construction industry is June 23, 2017. At a minimum, OSHA should extend this compliance date, preferably for at least one additional year, while reopening the rulemaking.

The Mine Safety and Health Administration (MSHA) is formulating a companion rule that is of equal concern to aggregates producers and other suppliers critical to the transportation construction industry. MSHA should carefully consider the industry viewpoint before releasing its version of the new rule.

Reporting and Recordkeeping (29 C.F.R. Part 1904)

In May 2016, OSHA issued a new rule requiring some employers to submit their injury and illness records electronically. The rule takes effect Jan. 1, 2017, and will allow OSHA to post these records online. The rule also prohibits employers from discouraging their workers from reporting an injury or illness. These "anti-discouragement" provisions became effective in August 2016. The new rule will couple this increased reporting with shorter reporting periods, which could present issues for employers when their employees do not report injuries or illnesses in a timely manner. Also, there may be potential confusion regarding what types of injuries OSHA will consider to be "reportable" depending on how a doctor prescribes treatment for minor injuries (e.g. over-the-counter remedies vs. prescriptions, etc.). The distinction between non-reportable first aid remedies and reportable injuries often hinge on the treatment as opposed to the severity of the injury. This proposed rule further complicates that distinction and the paired reporting requirement. In the new administration, OSHA should – at the very least – issue guidance addressing these practical concerns.

"Fair Play and Safe Workplaces" for Federal Contractors (Executive Order 13673 (2014))

In July 2014, President Obama signed an executive order requiring prospective federal contractors to disclose labor law violations and giving agencies guidance on how to consider labor violations when awarding federal contracts. In August 2016, after extensive input from the public, the Department of Labor (DOL) and the Federal Acquisition Regulatory Council (FAR Council) issued the final rules and guidance implementing the Executive Order. Under the rule, direct federal contractors bidding on solicitations of $50 million or more would be required to disclose their violations of 14 different federal workplace health and safety laws. The final rule, which is to be phased in, ultimately will require disclosure of labor violations on solicitations of $500,000 or more, will require subcontractors to disclose their labor violations, and will expand the reporting requirement to state law equivalents of the federal labor laws. Contractors will have to make additional reports every six months after a federal contract is awarded. The DOL contends the rule will ensure federal contractors comply with all necessary regulatory requirements. Concerned employers counter that the rule will "blacklist" them from federal awards for violations or even unsettled claims, which they do not have the ability to properly track. In October 2016, a federal court blocked implementation of the rule because of pending litigation. The new administration should withdraw the executive order and work cooperatively with federal contractors to address the underlying purposes of the new rule.

Overtime Revisions (81 Fed. Reg. 32,391 (2016))

New regulations will change the manner in which workers qualify for overtime pay. Currently, if a salaried employee earns more than $23,660 per year, they can be exempted from overtime pay if their primary responsibilities fall into certain categories, such as managerial and administrative duties. The new rule will more than double the minimum yearly salary level for workers exempt from overtime pay to $47,476, before their specific duties can be examined for an exemption. The rule also includes a mechanism to automatically adjust the salary threshold every three years based on the 40th percentile of wages in the lowest wage Census region. The first update will take place on January 1, 2020, with the new salary level being announced 150 days prior. A major concern is that the new minimum salary level for overtime exemption does not reflect geographic differences in average salary levels. In other words, the minimum salary in New York City is very likely to be much higher than it would be in Cheyenne, Wyoming. DOL should instead look to regional cost-of-living differences when setting the minimum salary threshold.

Paid Sick Leave (Executive Order 13706 (2015))

This Executive Order requires firms contracting directly with the federal government to provide their employees with at least seven (7) days of paid sick leave per year. This mandate is particularly difficult for transportation construction contractors, which often employ many seasonal or short-term workers. This order will also make prime contractors liable for violations by subcontractors, who may or may not have been working for that prime contractor at the time of the transgression. All of this contractor risk will likely result in increased costs on direct federal construction projects. The next administration should repeal the Executive Order or, at the very least, exempt construction firms because of the nature of their workforce.

Proposed Standards Improvement Project – Phase IV (29 CFR 1926)

Currently, various OSHA and FHWA regulations require transportation construction contractors to reference three different versions (from 1988, 2000 and 2009) of the Manual on Uniform Traffic Control Devices (MUTCD), a key document in ensuring safe design and construction of roadways. While OSHA has allowed employers to use the newer editions of the MUTCD, its underlying regulations cite the earlier versions. This conflict creates risk and uncertainty for contractors seeking to comply with MUTCD requirements in good faith. Updating OSHA's reference to the most current version of the MUTCD will alleviate much of that confusion. The National Committee on Uniform Traffic Control Devices (which includes ARTBA) has strongly recommended that OSHA update its regulations to rely solely on the most recent version of the MUTCD.

U.S. Department of the Interior (DOI)

Endangered Species Act/Critical Habitat (16 U.S.C. §1533)

Proper determination of "critical habitat" designation by the DOI is a very important issue for state and local governments, as well as businesses located in areas impacted by ESA activity. A determination of critical habitat can literally remove hundreds of miles from the possibility of any type of development. The U.S. Fish & Wildlife Service can even make this designation based on the "historical" presence of a species years in the past. In the transportation arena, the critical habitat designation is especially relevant as states promulgate transportation plans years, if not decades, in advance. If DOI summarily declares an area "off limits" through an overly broad critical habitat designation, then it can unnecessarily jeopardize carefully designed plans for economic development. At a minimum, all economic analysis necessary for a critical habitat determination should be based on the best data available and incorporate an area's planned transportation improvements.

U.S. Equal Employment Opportunity Commission (EEOC)

Revisions to the EEO-1 Form (81 Fed. Reg. 45,479 (2016))

As part of the Obama Administration's "equal pay" initiative, the EEOC announced revisions to EEO-1 form for employers of 100 or more. This form requires information on employees' ethnicity, race and gender by job category. The EEOC will now require employers to include salary data as well. The pay data, EEOC has stated, will "be used to assess complaints of discrimination, focus investigations, and identify employers with existing pay disparities that might warrant further examination." Generally speaking, the proposed EEO-1 revisions would unnecessarily increase the amount of data collected and the administrative burden on affected employers, while not yielding accurate, useful information for its stated purpose. The proposal also carries security and legal risks for the firms submitting the information. Employers of 100 or more must begin compliance on their 2017 EEO-1 forms, due by March 31, 2018.

White House Council on Environmental Quality (CEQ)

Greenhouse Gas (GHG) Reviews in NEPA (CEQ Guidance, "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," Aug. 1, 2016).

Congress passed the National Environmental Policy Act (NEPA) in 1969, long before GHGs and climate change were being looked at from a regulatory perspective. Consequently, the original statute does not include the proper regulatory mechanism for assessing these factors. NEPA was drafted to deal with present environmental issues and designed to account for the direct impacts of federal actions. For transportation projects, this means tangible effects on the environment, such as removal of wetlands and impacts to wildlife. Climate change impacts, however, are different. They are speculative and may not be realized until long after a project is completed. Therefore, CEQs attempts to include GHGs in NEPA reviews are beyond the scope and the purpose, and this policy should end.

ARTBA Staff Contacts

- Rich Juliano, Esq., Senior Vice President for Strategic Initiatives, (202) 289-4434 x. 206, rjuliano@artba.org

- Nick Goldstein, Esq., Vice President of Regulatory Affairs and Assistant General Counsel, (202) 289-4434 x. 207, ngoldstein@artba.org

Mr. CARPER. Mr. Chairman, could I make just a quick unanimous consent request? I am sorry I didn't do this before. I would ask unanimous consent to submit three items for the record: CRS Report, testimony from Earthjustice and other groups, and USDOT OIG's report that I mentioned in my opening statement.

Senator INHOFE. Without objection, they will be made a part of the record.

[The referenced information follows:]

Congressional Research Service
Informing the legislative debate since 1914

MEMORANDUM May 2, 2017

To: The Honorable Sheldon Whitehouse
Attention: Aaron Goldner

From: Linda Luther, Analyst in Environmental Policy, ext. 7-6852

Subject: **CRS Review of Selected Infrastructure Projects**

This memorandum responds to your request to CRS to review certain infrastructure projects identified in 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's conclusion includes the statement that the main barrier to infrastructure construction is a "complex and lengthy permitting system."[1] In the report, the author focuses on both permitting and "environmental reviews." The term environmental review refers to the process of complying with the National Environmental Policy Act (NEPA).[2] As the term is used in the report, it is not clear what is meant by "permitting." It appears to refer broadly to any approval issued by any agency—local, state, tribal or federal, not necessarily a permit document in all instances.

The focus of this memorandum is the potential effect that federal agency approvals may have on the timing of selected infrastructure projects. As requested, CRS reviewed two projects identified in the Howard report, the Bayonne Bridge Navigational Clearance Project and the Carlsbad Desalination Project, and one project requested by you, the T.F. Green Airport expansion project in Rhode Island. In the time available, CRS reviewed publicly available documents regarding these projects to determine if compliance with federal agency requirements appeared to affect the timing of project delivery. Before discussing these projects, this memorandum provides some background information about NEPA and federal agency roles in approving infrastructure projects or certain elements of such project. Also as requested, this memorandum identifies factors that generally may affect the timing of infrastructure projects.

Background

Under NEPA, federal agencies must prepare an environmental impact statement (EIS) for "major federal actions significantly affecting the quality of the human environment." As it has been interpreted by agencies and the courts over time, NEPA has two primary aims—to assure that federal agencies consider the environmental effects of their actions before proceeding with them and to involve the public in the decision-making process.

[1] The Howard report, p. 24.
[2] 42 U.S.C. §4321 *et seq.*

Regulations implementing NEPA, broadly applicable to all federal agencies, were promulgated by the Council on Environmental Quality (CEQ) in the Executive Office of the President.[3] Under those regulations, each federal agency was required to adopt the CEQ regulations, supplement them as necessary to include procedures relevant to that agency's authority and mission, and ensure that their procedures implementing NEPA are integrated into the agency's broader decision-making procedures.[4]

The CEQ regulations primarily focus on procedures related to the preparation of an EIS. CEQ also allows for the preparation of an environmental assessment (EA) when an agency is uncertain whether a proposal would have significant impacts. Preparation of an EA would then lead to either a determination that an EIS is necessary (i.e., the impacts of the proposal are significant) or that a finding of no significant impact (FONSI) may be issued.

The Howard report discusses infrastructure projects related to electricity transmission, power generation, inland waterways, roads and bridges, rail projects, and water infrastructure. Several of those types of projects are often undertaken by a non-federal entity (e.g., a private individual or company or a state agency). Such projects are generally subject to NEPA if funded directly by a federal agency or if they must use or cross federal land. Several categories of infrastructure projects identified in the Howard report do not involve federal actions subject to review under NEPA. For example, unless they are located on federal land, the construction or modernization of electricity transmission facilities and most types of power generation facilities discussed in the report (coal, gas, wind, and solar powered plants) are not generally subject to NEPA review.

As a procedural statute, NEPA does not require an agency to elevate environmental concerns above other factors 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. In contrast, other requirements applicable to federal actions *may* dictate or somehow affect the outcome of a project decision. For example, other federal laws may require the selected project alternative to be the one with 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., in accordance with an outside agency permit or approval).

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,[5] 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.

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

[3] See 40 C.F.R. Parts 1500-1508.

[4] See 40 C.F.R. §§1500.6, 1505.1 and 1507.3.

[5] Natural resources may include endangered species habitat, while environmental resources may refer to air or water.

(Corps) is 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 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.

Evaluation of Specific Projects

As noted, the Howard report asserts that environmental reviews and (presumably) local, state, and federal permits delay and, hence, increase the cost of infrastructure projects. The report cites no data to support its assertions. It states that there is "ample anecdotal evidence of actual years of delay."[6] However, limited anecdotal evidence is provided in the report. As requested, CRS reviewed two projects that are referenced at multiple points in the Howard report and a specific airport expansion project to determine whether or the degree to which federal agency NEPA review and/or the issuance of some federal agency approval affected the timing of project delivery.

The Bayonne Bridge

The Bayonne Bridge Navigational Clearance Project[7] referenced in the Howard report involves a bridge improvement project being undertaken by the Port Authority (PA) of New York and New Jersey. It involves raising the roadway to increase the vertical navigational clearance from approximately 151 feet to 215 feet above the waterway. According to the PA, it is one of the first such projects where engineers proposed to build a new bridge deck above the existing roadway, while continuing the use of the existing roadway. Commercial considerations and considerations of technical alternatives may have affected project timing.

The PA began the project in 2009. A draft EA was issued by the U.S. Coast Guard on January 4, 2013.[8] A final EA was issued four months later on May 16, 2013.[9] From 2009 to 2013, among other activities, the PA addressed engineering issues associated with the project. The Coast Guard also held public hearings to solicit and address comments related to the impacts of increased cargo volumes from larger ships, the expansion of the port and port facilities, and the related impacts to air quality and traffic.

The time it took PA to identify and demonstrate compliance with local, state, and federal environmental requirements was a factor that contributed to the EA taking four years to complete (from initial planning to issuance of the final EA). However, determining whether that four-year timeframe was excessive or reasonable may involve some subjectivity considering the number of local, state, and federal agencies that

[6] The Howard report, p. 6.

[7] See the Port Authority of New York and New Jersey website, "Bayonne Bridge Navigational Clearance Project," at https://www.panynj.gov/bridges-tunnels/bayonne-bridge.html.

[8] 78 *Federal Register* 740.

[9] 78 *Federal Register* 28873.

had to 1) be consulted to determine what, if any, requirements applied to the project; and 2) demonstrate compliance with requirements that did apply. While some considered the four-year time frame too long, statements made by the project manager suggest that, for a project of its complexity and local impacts, the project moved forward quickly.[10]

The Howard report refers to the six-month time frame it took to have the Coast Guard agree to be the lead federal agency responsible for EA. The debate over the lead agency was likely due to the unique nature of the project. The Department of Transportation's (DOT) Federal Highway Administration would generally be the lead agency responsible for EA preparation for a bridge project. However, that is only the case when the project sponsor requests DOT program funds. This project was entirely funded by the PA. As a result, it was a federal action (i.e., subject to NEPA) only because it involved bridge construction subject to permitting by the U.S. Coast Guard, under the General Bridge Act of 1946.[11]

Carlsbad Desalination Plant

The Howard report refers to a desalination plant in San Diego. While not explicitly identified in the report, CRS assumes it is referring to the Carlsbad Desalination Plant.[12] The Howard report refers to multiple lawsuits as a primary cause of the project's delay. However, press sources indicate that lawsuits were brought by local groups opposed to the project under state, not federal, law.[13] Further, the project is not a type that involves any federal action subject to NEPA review (i.e., no EIS or EA was required). The project likely required a permit issued by a state water quality agency that would have been issued in accordance with baseline federal standards. However, within the timeframe available, CRS could not identify any permit or other approval required for the project from any federal agency.

T.F. Green Airport Runway Expansion Project

The T.F. Green Airport is located in Warwick, Rhode Island. In a 2001 report, the Rhode Island Airport Corporation (RIAC) noted that previous airport plans had not envisioned its tremendous growth and need to expand. One challenge to that expansion was the concerns of the airport's host community, the City of Warwick, and bordering communities over increased aircraft noise, air pollution and odors, and local road congestion.[14] Press sources about the project indicate that local opposition, which involved the City of Warwick filing suit against RIAC, appears to have been a significant factor in the timing of project development.[15]

DOT's Federal Aviation Administration (FAA) was required to complete a NEPA review of the proposed project before it could be approved to receive DOT program funds. The NEPA review for the project was initiated in 2001, but put on hold in 2003 to revisit longer-term options. After restarting the scoping process in 2005, the draft EIS was issued in 2009.[16] In 2009, 285 residential properties were acquired

[10] See statements made by project manager Joann Papageorgis in a *New York Times* article, "High Above the Water, but Awash in Red Tape: Long Review of Bayonne Bridge Project Is Assailed," available at https://www.nytimes.com/2014/01/03/nyregion/long-review-of-bayonne-bridge-project-is-assailed.html?_r=0.

[11] 33 U.S.C. §§525-533.

[12] For information see http://www.carlsbaddesal.com/.

[13] 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

[14] See Rhode Island Airport Corporation, T.F. Green Airport, Warwick, Rhode Island, "Airport Master Plan Guiding Principles," February 5, 2001, p. 3.

[15] See local ABC News report, "Warwick City Council Gives OK on Airport Expansion," February 29, 2012, available at http://www.abc6.com/story/17051548/warwick-city-council-dumps-lawsuit-gives-ok-on-airport-expansion.

[16] For a discussion of the timing of various milestones in project development, see the "Executive Summary, Part 1" of the Final (continued...)

through FAA's Voluntary Land Acquisition Program. Property acquisition continued in 2010 and 2011.[17] While the runaway expansion was subject to federal regulatory standards, CRS could find no information suggesting that compliance with federal requirements "delayed" the project, within the timeframe available.

Identifying Causes of "Delay"

The Howard report includes a statement that "large projects often take a decade or longer to permit, we assume that avoidable delay on major projects is six years."[18] The report, however, provides no data to support this statement. It also does not define what constitutes "major" projects or "avoidable delay." The fact that a project takes years to plan and construct is not necessarily demonstration of an avoidable delay.

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, tribal, state, or federal law. While compliance with these requirements takes time, it is difficult to determine whether they routinely delay projects.

For any given infrastructure project, completing required NEPA analysis and documenting compliance with other applicable requirements may be complicated and time-consuming. It is generally not disputed that the time it takes to complete the environmental review process for some projects, especially those that require federal funding approval, can take months or years. What is unclear is the degree to which elements of the environmental review process or some specific *federal* agency approval directly or routinely "delays" entire categories of projects. Changing the process used to identify which laws may apply to a project (i.e., changing the NEPA process), will not change how each requirement is implemented.

Knowing which or whether federal requirements affect the timing of project delivery is useful in identifying legislative options to expedite federal approvals. Changing elements of the NEPA review process will not expedite project delivery if project development is more substantially affected by challenges associated with complying with other laws such as the Clean Water Act, the Clean Air Act, or Endangered Species Act or laws independently adopted by local or state governments. Changes in the NEPA process also would appear to do little to affect factors that may play a more significant role in the development of projects identified in the Howard report, primarily the lack of funding, local opposition, and design and engineering challenges.

(...continued)

T.F. Green Airport Improvement Program: Environmental Impact Statement and Final Section 4(f) Evaluation, p. ES-2, available at http://www.pvdairport.com/corporate/environment/final-environmental-impact-statement-feis.

[17] Ibid, p. ES-5.

[18] The Howard report, p. 6.

Office of Inspector General
Audit Report

VULNERABILITIES EXIST IN IMPLEMENTING INITIATIVES UNDER MAP-21 SUBTITLE C TO ACCELERATE PROJECT DELIVERY

Office of the Secretary
Federal Highway Administration
Federal Transit Administration

Report Number: ST2017029
Date Issued: March 6, 2017

Memorandum

U.S. Department of Transportation
Office of Inspector General

Subject: **ACTION:** Vulnerabilities Exist in Implementing Initiatives Under MAP-21 Subtitle C To Accelerate Project Delivery
Office of the Secretary of Transportation
Federal Highway Administration
Federal Transit Administration
Report No. ST2017029

Date: March 6, 2017

From: Calvin L. Scovel III
Inspector General

Reply to Attn. of: JA-30

To: Secretary of Transportation
Federal Highway Administrator
Federal Transit Administrator

The Moving Ahead for Progress in the 21st Century Act of 2012[1] (MAP-21) was the first long-term surface transportation authorization enacted since 2005. The act's Subtitle C requires the U.S. Department of Transportation (DOT) to implement initiatives to accelerate delivery of projects funded by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), and to report on the initiatives' progress. DOT developed a plan with 42 actions to meet Subtitle C requirements (Sections 1301-1321 and 1323). The Fixing America's Surface Transportation Act of 2015 (FAST Act)[2] reauthorized and changed some of the MAP-21 initiatives and includes project delivery initiatives for the Federal Railroad Administration (FRA).

MAP-21's Subtitle C Section 1323 requires the Office of Inspector General to assess DOT's implementation of these initiatives and submit an initial and final report to Congress. In May 2013, we issued our first report,[3] and in September 2013, we testified[4] before the Senate on the status of DOT's 42 planned actions to address Subtitle C requirements. This final report presents the results of our latest audit to assess DOT's progress. Our audit objectives were to (1) provide the status

[1] Public Law No. 112-141 (2012).
[2] Public Law No. 114-357 (2015).
[3] *Letter to Congress on the Status of MAP-21, Subtitle C: Acceleration of Project Delivery,* OIG Report Number CC-2013-007, May 22, 2013.
[4] *Status of the DOT's Actions to Address Subtitle C of MAP-21,* OIG Report Number CC-2013-031, September 18, 2013.

of DOT's actions to carry out MAP-21 Subtitle C provisions and (2) identify possible vulnerabilities in DOT's implementation of these actions.

We conducted this audit in accordance with generally accepted Government auditing standards. For our work, we reviewed Federal regulations, DOT guidance, policies and status reports for Subtitle C provisions, and surveyed a random sample of FHWA Division Offices from California, Georgia, Oregon, and Pennsylvania. We interviewed officials at DOT Headquarters and regional offices, and the Texas State Department of Transportation, and representatives from American Association of State Highway Transportation Officials and American Road and Transportation Builders Association. See exhibit A for further details on our scope and methodology.

RESULTS IN BRIEF

DOT has completed 27 of its 42 planned actions for implementation of Subtitle C—including issuance of rulemakings, guidance, and reports. However, the Department has had to delay full implementation because it must revise a large number of these actions to comply with the more recent FAST Act. In accordance with the FAST Act, the Department is altering 19 of its planned actions, which include 10 of the 27 actions already completed under MAP-21. According to documentation we received from FHWA officials, the FAST Act affects 4 of the 9 mandated rules it planned under MAP-21, including amending a January 2014 rule implementing Section 1317—Categorical Exclusion for Projects for Limited Federal Assistance.[5] These delays could impact the Department's ability to achieve the intended benefits under MAP-21 initiatives, such as accelerating project delivery and reducing the costs of transportation projects. See exhibit B for the 22 project delivery initiatives under MAP-21 Subtitle C and a summary of DOT's 42 planned actions for implementation.

DOT faces vulnerabilities in its implementation of certain planned actions for Subtitle C. These vulnerabilities include FHWA's lack of (1) a required application for meeting project eligibility for an increased share of Federal funds under Section 1304—Innovative Project Delivery Methods; (2) a performance assessment of States that assume environmental review responsibilities under Section 1313—the Surface Transportation Project Delivery Program; and (3) a defined process to implement required reporting to Congress in 2017 on the use of categorical exclusions (CE)[6] under Section 1323–Review of Federal Project Delivery Program. In addition, State participation in programs under some Sections is low due to factors outside of DOT's control. For example, the Section 1304 program to promote the use of innovative construction, safety, and quality

[5] The final rule, reflecting FAST Act changes, was issued on May 31, 2016.
[6] CEs are actions that meet the definition contained in 40 C.F.R. § 1508.4, are based on experience with similar actions, and do not involve significant impact to the environment.

technologies has been in effect for 4 years and produced only 34 projects in 9 States. According to FHWA officials, the Section's lack of financial incentive may contribute to low participation. These vulnerabilities in implementation of Subtitle C could inhibit achievement of the full benefits envisioned for the DOT's accelerated project delivery initiative.

We are making recommendations to address vulnerabilities in DOT's implementation of Subtitle C provisions.

BACKGROUND

MAP-21 Subtitle C provisions include advancing the use of best practices, expanding early acquisition of property prior to completion, using the construction manager/general contractor (CM/GC) method of contracting, and establishing a relocation streamlining demonstration program. See Table 1 for a summary of MAP-21 Subtitle C provision.

The FAST Act reauthorizes and changes some of the MAP-21 initiatives while adding project delivery initiatives for FRA. For example, the FAST Act codified FHWA's Every Day Counts (EDC) initiative, which the Agency began in 2009, to accelerate project delivery, enhance road and bridge safety and durability, reduce traffic congestion, and improve environmental sustainability.[7] The FAST Act also includes a number of changes to Federal law intended to streamline the environmental review process, such as expedited environmental review for reconstruction in the aftermath of emergencies.

[7] As part of the EDC, every 2 years, FHWA is expected to work with State Departments of Transportation, local Governments, tribes, private industry, and other stakeholders to identify and select new sets of innovative technologies and practices that warrant widespread deployment.

Table 1. MAP-21 Subtitle C Acceleration of Project Delivery Initiatives

Subtitle C	Description
Section 1301	Declaration of policy and project delivery initiative
Section 1302	Advance acquisition of real property interests
Section 1303	Letting of contracts
Section 1304	Innovative project delivery methods
Section 1305	Efficient environmental reviews for project decision-making
Section 1306	Accelerated decision-making
Section 1307	Assistance to affected Federal and State agencies
Section 1308	Limitations on claims
Section 1309	Accelerating completion of complex projects within 4 years
Section 1310	Integration of planning and environmental review
Section 1311	Development of programmatic mitigation plans
Section 1312	State assumption of responsibility for categorical exclusions
Section 1313	Surface transportation project delivery program
Section 1314	Application of categorical exclusions for multimodal projects
Section 1315	Categorical exclusions in emergencies
Section 1316	Categorical exclusions for projects within the right-of-way
Section 1317	Categorical exclusion for projects of limited Federal assistance
Section 1318	Programmatic agreements and additional categorical exclusions
Section 1319	Accelerated decision-making in environmental reviews
Section 1320	Memoranda of agency agreements for early coordination
Section 1321	Environmental procedures initiative
Section 1323	Review of Federal project and program delivery

Source: MAP-21.

DOT HAS IMPLEMENTED OVER HALF OF THE PLANNED ACTIONS FOR SUBTITLE C INITIATIVES

The Department has implemented 27 of its 42 planned actions, including issuance of rulemakings, guidance and reports, and deleted 4 planned actions. However, because it is revising a large number of its planned actions to comply with the FAST Act, the Department has delayed the complete implementation and has not established target completion dates for 7 of the remaining 38 planned actions. As a result of these delays, the Department may not achieve all of the intended benefits under MAP-21 initiatives such as accelerating project delivery, reducing costs, and

ensuring that the planning, design, engineering, construction, and financing of transportation projects are done in a more efficient and effective manner.

Based on data from FHWA officials, the Department is also altering 19 of its 42 planned actions to comply with the FAST Act including 10 of the 27 actions it has already completed and has eliminated 4 action items due to its updated plan. See Table 2 for a status of the Department's actions and the FAST Act impacts.

Table 2. Status of DOT's Planned Actions for Implementing MAP-21 Subtitle C and FAST Act Impacts

MAP-21 Actions[a]	Completed	In Progress	Affected by FAST Act
Rulemakings			
Mandated Rulemakings	7	1	4[b]
Other Rulemakings	3	3	4
Reporting			
Congressional Reports	3	1	
Other Report	1		
Guidance	10[c]	6	10[d]
Other Initiatives[e]	3	0	1
Totals	**27**	11	19

[a] DOT subsequently decided that of the 42 original planned actions, 4 actions were not needed.
[b] DOT had completed three of the four mandated rulemakings affected by the FAST Act and the other one is in progress.
[c] FHWA divided one action into 2 parts, 35 and 35(b), both of which are completed.
[d] Affected actions include 4 completed guidance actions.
[e] Other initiatives include entering into a memorandum of understanding, conducting a survey, and implementing a standard operating procedure.
Source: OIG analysis derived from DOT documentation.

DOT's completed actions fall into the following categories:

Rulemakings: DOT's 42 planned actions included 9 required rulemakings designed to streamline the environmental review process used on Federal highway and transit projects. The Department has completed seven of these actions. It combined two rulemakings and has one in progress. However, the FAST Act will affect four of these rulemakings, including three of the seven that the Department had completed. For example, in January 2014, the Department finalized a rulemaking on Section 1317—Categorical Exclusion for Projects for Limited Federal Assistance—and has amended the rule due to the FAST Act.

Reports: DOT has completed three of four planned actions related to reports to Congress on the status of its environmental actions taken. The fourth report—due

to Congress by October 2017—must present results of an evaluation of project completion timeframes for environmental impact statements, environmental assessments, and CEs.

Guidance: Sixteen of DOT's 42 planned actions call for issuance of new or modified guidance to assist States and others managing Federal projects. As of November 2016, the Department had completed 10 of these 16 planned actions and has 6 in progress. However, the FAST Act may affect 10 of these planned actions, including 4 completed actions.

VULNERABILITIES EXIST IN IMPLEMENTING PLANNED ACTIONS FOR SOME SUBTITLE C INITIATIVES

Vulnerabilities exist in FHWA's implementation of planned actions for certain Subtitle C initiatives. FHWA does not require sufficient documentation as part of its implementation of Section 1304—Innovative Project Delivery Methods. The Agency also does not assess the effectiveness of the Surface Transportation Project Delivery program, and has not clearly established a process to implement required reporting on categorical exclusions to Congress in 2017. Lastly, low State participation may affect implementation of certain initiatives.

FHWA Implementation of Section 1304 Does Not Require Sufficient Documentation for Approved Projects

FHWA does not require sufficient documentation for its implementation of Section 1304—Innovative Project Delivery Methods. Section 1304 builds on FHWA's similar EDC program to promote the use of innovative technologies and practices that increase the efficiency of construction, improve safety, and extend the service life of highways and bridges. States with projects that FHWA determines to be eligible may increase the projects' share of Federal funds up to 5 percent of the total project cost, not to exceed 100 percent.[8] According to FHWA's guidance, to qualify under Section 1304, technologies and practices should be truly innovative to the State or local agency—new technologies or practices are ones that have rarely been used and represent significant improvement to the State or local agency's practice. FHWA's guidance also states that each application for an increased Federal share should identify the innovative technology or practice; describe how the technology or practice will accelerate construction, increase its efficiency and improve safety and quality; and explain how the technology or practice meets Section 1304 eligibility requirements. However, the guidance encourages but does not require States to use applications for project approval. As a result, one FHWA Division Office participating under

[8] Under 23 U.S.C. § 120, projects' Federal shares are usually capped at 80 to 90 percent.

Section 1304 stated that they did not use applications because it was not a FHWA requirement.

FHWA officials stated that they collaborate with their counterparts at State DOTs to identify innovative technologies and practices and to discuss whether these technologies and practices meet Section 1304 eligibility requirements. They also stated that they do not always document these discussions because FHWA guidance does not require them to do so. Due to this lack of documentation, we could not independently identify innovative technologies or practices, or the intended benefits from using them for some of the projects in our review under Section 1304. A FHWA program official concurred that a clearly defined application process is a best practice and stated that he was "developing new guidance that will most likely require the use of an application in the future."

Additionally, according to FHWA officials, after issuing the guidance in 2012,[9] they realized that development of a comprehensive list of innovations for the guidance was not practical. Therefore, in October 2014, FHWA officials deemed the guidance outdated, but they did not update the guidance to convey that it would not include a comprehensive list of innovations. FHWA issued updated guidance for Section 1304 in August 2016, but this guidance does not require States to submit a written application to participate under the Section. This lack of documentation from States that apply for increased Federal share under Section 1304 makes it difficult for FHWA to be sure that approved projects meet program eligibility.

FHWA Does Not Assess States' Performance Under the Surface Transportation Project Delivery Program

FHWA does not assess the effectiveness of States' environmental review performance under Section 1313–Surface Transportation Project Delivery. Section 1313[10] allows States to assume responsibilities under the National Environmental Policy Act of 1969[11] (NEPA) for environmental reviews, consultation, and compliance for Federal highway projects. FHWA conducts audits and monitors State participants to evaluate States' compliance with their Section 1313 memoranda of understanding in accordance with FHWA and environmental requirements. However, the Agency has not developed a plan to assess the effectiveness of the environmental review performance of the States that assume the responsibilities under Section 1313.

---

[9] FHWA's Guidance: Innovative Project Delivery Methods Questions & Answers, September 2012.

[10] Section 1313 makes the Surface Transportation Project Delivery Program established under SAFETEA-LU a permanent program.

[11] Public Law No. 91-190 (1969).

According to FHWA officials, States that participate in this program are not required to use the Agency's environmental tracking system to collect and track environmental review data and the length of time taken to complete environmental impact statements (EIS) and environmental assessments (EA).[12] State DOTs make this information available to FHWA only upon request. Another FHWA program official informed us that the Division Offices would rely on memoranda of understanding between FHWA and State DOTs to govern program activities.

While MAP-21 does not require FHWA to measure performance regarding the environmental review process for States assuming NEPA responsibilities, the lack of data collection and tracking inhibits FHWA's ability to measure the effectiveness of the program in accelerating project delivery and identify project delivery problems for those States that have assumed these responsibilities.[13]

FHWA Has Not Established a Process to Implement Required Reporting on Categorical Exclusions

FHWA has not established a process for collection of data on States' categorical exclusion completion times which it must report to Congress in 2017 under Section 1323—Review of Federal Project and Program Delivery. Section 1323 requires that in 2017, FHWA report to Congress on the time State DOTs take to complete EISs, EAs, and CEs. According to FHWA, in March 2013, it developed Project and Program Action Information System (PAPAI) to comply with requirements under Section 1323. According to FHWA headquarters officials, in early 2015, the Agency changed its policy to not require Division Offices to collect CE data using PAPAI because the Agency realized that tracking CE information would be difficult for Division Offices. After it changed its policy, FHWA planned to use a statistically valid sample for its 2017 reporting to Congress. However, the Agency has not finalized this plan and FHWA officials are still looking for an alternative method. As a result, the Agency does not currently have a plan in place to collect and report the required CE information to Congress in 2017.

---

[12] NEPA requires Federal agencies to prepare EISs for projects with major actions that significantly affect the quality of the human environment. An EIS details the process through which a transportation project was developed, includes consideration of a range of reasonable alternatives, analyzes the alternatives' possible impact, and demonstrates compliance with other environmental laws and Executive Orders. Agencies prepare EAs to: (1) provide sufficient evidence and analysis for determining whether to prepare EISs or findings of no significant impact; (2) aid compliance with NEPA when EISs are not necessary; and (3) facilitate preparation of necessary EISs.

[13] One goal of MAP-21 was to improve and report on initiatives to accelerate project delivery and processing times from initiation of EIS, EAs and CEs to approval of final decisions. The FAST Act requires the Government Accountability Office to assess and report on DOT's progress on accelerating project delivery by October 1, 2017. Data collection and analysis, and tracking State participation and project activities will be needed to fulfill this Congressional request.

In addition, two of five Division Offices surveyed provided us with outdated or incorrect information on their use and understanding of PAPAI. Although it changed its policy for using PAPAI, FHWA did not update its written policy. In addition, FHWA's Website incorrectly states that PAPAI determines total processing times from initiation of EISs, EAs, and CEs to approval of final decision documents, and that environmental reviews should be entered in PAPAI. FHWA's lack of a current policy makes it difficult for the Agency to be sure that its Division Offices use PAPAI as intended.

Low State Participation May Affect Implementation of Certain Subtitle C Initiatives

State participation is currently low in certain initiatives and as a result, DOT has not achieved all of MAP-21's intended benefits. The five FHWA Division Offices we surveyed reported several factors outside of DOT's control that may contribute to this low participation including: (1) requirements for State legislatures' approval; (2) nominal financial incentive; (3) a lack of resources; and (4) risks associated with waiving sovereign immunity. For example:

Section 1303—Letting of Contracts—Construction Manager/General Contractor (CM/GC). FHWA officials told us that State legislatures must approve the use of CM/GC on highway construction contracts. Of the five FHWA Division Offices we surveyed, only two States were participating.

Section 1304—Innovative Project Delivery Methods. Two States from the five FHWA Division Offices surveyed were participating under Section 1304. When we began our audit, seven States were participating under Section 1304, including the two in our survey, with 24 approved projects. In October 2016, FHWA headquarters officials informed us that nine States were participating with 34 approved projects. FHWA officials further informed us that participation has been lower than expected primarily due to lack of adequate financial incentive for States to participate. According to FHWA, it has been promoting the use of technologies and practices through EDC since before MAP-21's enactment. Additionally, FHWA recently took steps to increase awareness of this provision by highlighting it on its Website and believes its communication and outreach efforts may enhance awareness of and participation in Section 1304.

Section 1313—Surface Transportation Project Delivery Program. Two of five States from the surveyed FHWA Division Offices were participating. Nationwide, only one more State was participating at the time of our audit. However, FHWA officials informed us that Utah and Alaska have applied for participation in the program. According to an FTA official, no State has requested the assignment of FTA environmental review authority for transit projects because of the States' unwillingness to risk waiving sovereign immunity in the event of litigation and

because most transit project sponsors are not States. According to FHWA officials we surveyed, their States are reluctant to take on this initiative because they (1) do not have the resources; (2) are unwilling to risk waiving sovereign immunity in the event of litigation; (3) do not have qualified legal staff to defend litigation in Federal court; and (4) use CEs on most projects and already have the authority to approve CEs through agreements with their FHWA Division Offices.

CONCLUSION

MAP-21's Subtitle C directs the Department to identify and promote reforms that will reduce the time and funding required to plan, design, and construct transportation projects, including streamlining the environmental review process used on Federal highway and transit projects. Over the past 4 years, DOT has taken steps to implement more than half of the Subtitle C initiatives, but there have been delays in completing its planned actions and further delays will occur as DOT adjusts to changes brought about by the FAST Act. Moreover, some program initiatives may be affected by low State participation that is outside of DOT's control. By completing all planned actions, the Department increases the chances of successful implementation of the initiatives and achievement of the full range of Subtitle C's intended benefits.

RECOMMENDATIONS

We recommend that the Federal Highway Administrator:

1. Require Division Offices to have documentation substantiating how each innovative technology and practice meets eligibility requirements for the projects under § 1304 at the time of approval.

2. Develop and implement an oversight mechanism to periodically evaluate the performance of States that assume DOT's environmental review responsibilities under § 1313.

3. Finalize a plan for collecting and tracking data on CEs to meet mandatory reporting requirements for § 1323.

4. Establish target completion dates for the remaining planned actions for MAP-21 Subtitle C provisions that are in progress.

5. Update the policy and FHWA Website to clearly reflect and convey the most current requirements for the use of Project and Program Action Information System (PAPAI).

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL REPSONSE

We provided OST, FHWA and FTA a copy of our draft report on January 11, 2017, and received the Department's formal management response on February 10, 2017, which is included as an appendix to this report. In its response,[14] the Department concurred with all our recommendations, and agreed to implement the actions as written for recommendation 1 by March 31, 2018, and recommendations 2 through 5 by April 30, 2017. We therefore consider recommendations 1 through 5 resolved but open pending the Department's completion of the planned actions.

We appreciate the courtesies and cooperation of the Office of the Secretary, Federal Highway Administration and Federal Transit Administration representatives during this audit. If you have any questions concerning this report, please call me at (202) 366-1959, or Barry J. DeWeese, Assistant Inspector General for Surface Transportation Audits, at (202) 366-5630.

#

cc: DOT Audit Liaison, M-1
FHWA Audit Liaison, HCFB-32
FTA Audit Liaison, TBP-30

[14] The Department also indicated that it had completed another planned action, but we have not verified the status of that action.

EXHIBIT A. SCOPE AND METHODOLOGY

We conducted our work between January 2016 and September 2016 in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Our audit objective was to evaluate the effectiveness of DOT's implementation of several initiatives to accelerate highway and bridge project delivery under MAP-21 Subtitle C. Specifically, we (1) provided the status of the Department's actions to carry out MAP-21 Subtitle C provisions, and (2) identified possible vulnerabilities in the Department's implementation of these actions.

To obtain evidence on the status of DOT's actions to carry out MAP-21 Subtitle C provisions, we reviewed Federal regulations, FHWA guidance, policies and status reports for Subtitle C provisions and OST, FHWA and FTA Headquarters. We obtained and analyzed the Department's 42 Planned Actions to Implement MAP-21 Subtitle C as of November 2015, February 2016, and May 2016.

We visited the FHWA Texas Division Office and Texas Department of Transportation (TxDOT) in Austin, TX,[15] and FTA Region 6 in Ft. Worth, TX, and professional transportation associations in Washington, DC to discuss MAP-21 Subtitle C, and any obstacles or concerns related to the Department's implementation of the provisions. We conducted this fieldwork to better understand the Department's role, policies, and procedures related to MAP-21 Subtitle C Sections. We also surveyed FHWA Division Office officials from California, Georgia, Oregon, and Pennsylvania based on a random sample selection.

We selected a random sample and surveyed FHWA Division Offices personnel about the Department's implementation of the provisions. To develop the sample universe, we collected each State's fiscal year 2014 FHWA apportionment data under MAP-21 Subtitle C. We stratified the universe of FHWA Division Offices representing 50 States and the District of Columbia into 3 strata for a total of 51 States: Stratum 1 consisted of States with approved projects under Section 1304; Stratum 2 consisted of States with approved projects under Section 1313; and Stratum 3 consisted of States that were not attributed to either Section. We selected a probability proportional-to-size sample for which size was a State's apportionment of 1 out of 6 States from Stratum 1, 1 out of 3 States from Stratum 2, and 2 out of 42 States from Stratum 3 for a total of 4 out of 51 States. Our

[15] We selected FHWA Texas Division and TxDOT for site visits because they developed the first permanent projects under Subtitle C.

sample included $6.9 billion or 18.1 percent out of a universe of $37.8 billion. Our sample selection was unbiased but not large enough to project results to the universe of all 51 States.

Exhibit A. Scope and Methodology

EXHIBIT B. DOT'S 42 PLANNED ACTION ITEMS FOR MAP-21 SUBTITLE C IMPLEMENTATION AS OF NOVEMBER 2016

MAP-21 Subtitle C Sections	Action Item	Status of MAP-21 Action Item	MAP-21 Deliverable	Impacted By the FAST Act?
1301- Declaration of Policy and Project Delivery Initiative	1	Completed	Identify and advance the use of best practices.	***Yes***. Updated FTA Standard Operating Procedures for environmental reviews. Completed August 11, 2016.
	2	Completed	Guidance.	*No.*
	3	Completed	Work plans approved for three States' participation.	*No.*
1302 - Advance Acquisition of Real Property Interests	4	Completed	Guidance.	*No.*
	5	Completed	Regulation on the advance acquisition of right-of-way (ROW).	*No.*
1303 - Letting of Contracts – CM/GC	6	***In progress***	Regulation on CM/GC.	*No.* Target Completion Date for the final rule December 31, 2016.
1304 - Innovative Project Delivery Methods	7	Completed	Guidance.	***Yes.*** Updated guidance to provide further examples and clarification regarding innovative project delivery. Completed August 15, 2016.
1305 - Efficient Environmental Reviews for Project Decision-making	8	***In progress***	Required rulemaking to allow for the use of programmatic approaches to conduct the	***Yes***. Draft regulations are prepared and awaiting clearance from OST. Target Completion Date Spring 2017.

MAP-21 Subtitle C Sections	Action Item	Status of MAP-21 Action Item	MAP-21 Deliverable	Impacted By the FAST Act?
			environmental review process.	
	9, 10, 11	***In progress***	Guidance on designation on lead agency for multimodal projects, efficient environmental reviews, and environmental approaches.	***Yes.*** Revised draft guidance under development. Target Completion Date to be determined.
1306 - Accelerated Decision-making	12	Completed	Report to Congress.	*No.* Next report due February 2017.
	13	Completed	Guidance on dispute resolution.	***Yes.*** Revised guidance in accordance with FAST Act provision. Target Completion Date Summer 2017.
	14	Deleted[a]	Rulemaking on dispute resolution referrals and time limits.	*No.*
1307 - Assistance to Affected Federal and State Agencies	15	***In progress***	Guidance on MOA with Federal and State agency.	***Yes.*** Draft guidance under development. Target Completion Date Spring 2017.

[a] DOT subsequently decided the planned action was not needed.

Exhibit B. DOT's 42 Planned Action Items for MAP-21 Subtitle C Implementation as of November 2016

1308 - Limitations on Claims	16	***In progress***	Rulemaking on revising the deadline for filing a claim for judicial review to 150 days.	***Yes.*** Combine with other items for rulemaking under other FAST Act Subtitle C provisions. Target Completion Date Spring 2017.
	17	***In progress***	Guidance on filing deadline for judicial review.	***Yes.*** Revised draft guidance under development. Target Completion Date to be determined.
1309 - Accelerating Completion of Complex Projects Within 4 Years	18	Deleted	Rulemaking on enhanced technical assistance for complex projects.	*No.*
	19	***In progress***	Guidance on enhanced technical assistance for complex projects.	***Yes.*** Revised draft guidance under development. Target Completion Date to be determined.
1310 - Integration of Planning and Environmental Review	20	Completed	Guidance on integration of planning and environmental review.	*No.*
	21	Completed	Rulemaking on integration of planning and environmental review.	***Yes.*** FAST Act Planning rulemaking. Completed May 27, 2016.
1311 - Development of Programmatic Mitigation Plans	22	Completed	Rulemaking.	***Yes.*** FAST Act Planning rulemaking. Completed May 27, 2016.

Exhibit B. DOT's 42 Planned Action Items for MAP-21 Subtitle C Implementation as of November 2016

1312 - State Assumption of Responsibility for CEs	23	Completed	Updated guidance on State assumption of responsibility for CEs.	*No.*
1313 - Surface Transportation Project Delivery Program	24	Completed	Required rulemaking to update regulations.	***Yes.*** DOT will incorporate needed changes from FAST Act § 1308 into the rulemaking on § 1309. Target Completion Date to be determined.
	25	Completed	Guidance on State assumption of NEPA responsibilities.	*No.*
1314 - Application of CEs for Multimodal Projects	26	Completed	Updated Q&A and issued guidance on the application of CEs for multimodal projects.	***Yes.*** OST is taking the lead on developing guidance for FAST Act § 1310 – Multi modal CEs. Target Completion Date December 31, 2016.
1315 - CEs in Emergencies	27	Completed	Required rulemaking to qualify emergency repair projects as CE.	*No.*
	28	Completed	Required regulation on evaluation of alternatives for repeated repair or reconstruction for facilities.	*No.* Completed October 24, 2016.
	29	Completed	Required regulation on evaluation of alternatives for repeated repair or	*No.*

Exhibit B. DOT's 42 Planned Action Items for MAP-21 Subtitle C Implementation as of November 2016

			reconstruction for facilities.	
	30	Deleted	Required regulation on evaluation of alternatives for repeated repair or reconstruction for facilities.	*No.*
1316 - CEs for Projects Within the Right-of-Way	31	Completed	Publicize required regulations for operational right-of-way CE projects.	*No.*
1317 - CE for Projects of Limited Federal Assistance	32	Completed	Publicize required regulations to designate projects with limited Federal assistance as CEs.	***Yes.*** Final rulemaking. Completed May 31, 2016.
1318 - Programmatic Agreements and Additional CEs	33	Completed	Survey DOTs' use of CEs since 2005, publish survey results, and solicit requests for new CEs.	*No.*
	34	Completed	Required rulemaking to add new CEs suggested by others and as listed in the statute.	***Yes.*** Final rulemaking. Completed May 31, 2016.

Exhibit B. DOT's 42 Planned Action Items for MAP-21 Subtitle C Implementation as of November 2016

1319 - Accelerated Decision-making in Environmental Reviews	35	Completed	Issued interim guidance on accelerated decision making on environmental reviews.	***Yes.*** Revised draft guidance under development. Target Completion Date to be determined.
	35(b)	Completed	OST issued guidance on accelerated decision making on environmental reviews applicable to entire Department.	*No.*
	36	***In progress***	Regulation on accelerated decision making on environmental reviews.	***Yes.*** This change has been included in the NPRM that addresses MAP-21 § 1305 and FAST Act § 1304. Target Completion Date Spring 2017.
1320 - Memoranda of Agency Agreements for Early Coordination	37	Completed	Guidance on memoranda of agreements for early coordination.	*No.*
	38	Deleted	Rulemaking on memoranda of agreements for early coordination.	*No.*

Exhibit B. DOT's 42 Planned Action Items for MAP-21 Subtitle C Implementation as of November 2016

1321 - Environmental Procedures Initiative	39	Completed	Establish initiative to review and develop consistent procedures for environmental permitting and report results for formula grant funds distributed.	*No.*
1323 - Review of Federal Project and Program Delivery	40	Completed	Report to Congress on results of review of Federal project and program delivery for CEs, EAs, and EISs for pre-2005 projects.	*No.*
	41	**In progress**	Report to Congress on results of review of Federal project and program delivery for CEs, EAs, and EISs for post-2005 projects.	*No.* Two reports evaluating project completion timeframes for CEs, EAs, and EISs (from 2005 to adoption of MAP-21 and post MAP-21). Target Completion Date October 1, 2017.
	42	Completed	Report to Congress on types and justifications for additional CEs under § 1316 and § 1317.	*No.*

Source: OIG compilation of information provided by FHWA.

Exhibit B. DOT's 42 Planned Action Items for MAP-21 Subtitle C Implementation as of November 2016

EXHIBIT C. ENTITIES VISITED OR CONTACTED

Office of the Secretary of the U.S. Department of Transportation

Headquarters, Washington, DC

Federal Highway Administration (FHWA)

FHWA Headquarters, Washington, DC
FHWA Texas Division, Austin, TX
FHWA California Division, Sacramento, CA
FHWA Georgia Division, Atlanta, GA
FHWA Oregon Division, Salem, OR
FHWA Pennsylvania Division, Harrisburg, PA

Federal Transit Administration (FTA)

FTA Headquarters, Washington, DC
FTA Regions 6, Ft. Worth, TX

State Department of Transportation

Texas Department of Transportation, Austin, TX

Professional Transportation Associations

American Association of State Highway Transportation Officials, Washington, DC
American Road and Transportation Builders Association, Washington, DC

EXHIBIT D. MAJOR CONTRIBUTORS TO THIS REPORT

Name	Title
Dave Pouliott	Deputy Assistant Inspector General for Surface Transportation Audits
Krystal Patrick	Supervisory Auditor
Michael Masoudian	Senior Analyst
Ryan Sanders	Senior Analyst
Anne-Marie Joseph	Senior Engineer
Fritz Swartzbaugh	Associate Counsel
Petra Swartzlander	Senior Statistician
Susan Neill	Writer Editor

APPENDIX. AGENCY COMMENTS

U.S. Department of Transportation

Office of the Secretary of Transportation

1200 New Jersey Avenue, SE
Washington, DC 20590

Subject: INFORMATION: Management Response to DOT Office of Inspector General (OIG) Draft Report Vulnerabilities Exist in Implementing Initiatives Under MAP-21 Subtitle C To Accelerate Project Delivery

From: Keith Washington
Deputy Assistant Secretary for Administration

To: Barry J. DeWeese
Assistant Inspector General for
Surface Transportation Audits

The Department of Transportation (DOT) has successfully implemented the majority of the project delivery provisions set forth in Subtitle C of the Moving Ahead for Progress in the 21st Century Act (MAP-21). The Department prioritized implementation of those provisions that had statutory deadlines and those that improved the efficiency and effectiveness of the project delivery process. In December 2015, we began to adapt and modify the MAP-21 Subtitle C implementation plan to meet the new project delivery requirements under the Fixing America's Surface Transportation (FAST) Act.

The Office of the Secretary, Federal Highway Administration (FHWA), Federal Transit Administration, and Federal Railroad Administration moved quickly to address the FAST Act project delivery requirements while continuing to meet the requirements of MAP-21 Subtitle C. The Department does not view modifications to its implementation of MAP-21 Subtitle C, to adapt to the FAST Act provisions as vulnerabilities or as inhibiting benefits, but as a means for continued progress towards improving project delivery. Further, the Department believes that good progress has been made in completing the MAP-21 project delivery requirements, including those affected by the FAST Act.

We have reviewed the draft report and offer the following comments in response to the OIG's findings and recommendations:

- For Section 1323, FHWA finalized a plan for collecting and tracking data on categorical exclusions (CEs) to meet mandatory reporting requirements within this section. This step is critical for standardizing the collection of information on CEs from States and FHWA Divisions.

- Related to the use of Project and Program Action Information (PAPAI) System, FHWA is in the process of updating its policy and website to clearly reflect and convey the most current requirements.

- For Section 1313, FHWA conducts annual audits during each of the first four years of a State's participation in the program. The FHWA has conducted audits in Texas and Ohio, and is preparing for audits in Florida and Utah. Following the fourth year, FHWA monitors the State's compliance with the written agreement and conducts monitoring for the States. States that participate in the program also perform individual self-assessments separate from the individual audit/monitoring conducted by FHWA.

- The FHWA actively promotes Section 1304 as a resource in presentations on its innovative deployment program, and through its Accelerating Innovation website[17] and detailed Frequently Asked Question posted online.[18] The FHWA has and will continue to capture the use of increased federal share for innovation on an annual basis through its Federal-aid Division Offices. As of October 2016, 10 individual State DOTs have used the innovative project delivery methods in section 1304 on over 30 projects for approximately $68 million in increased Federal share.

- Since the Appendix B chart was prepared in November 2016, DOT has completed an action implementing Section 1303 with the issuance of a final rule on December 2, 2016 on Construction Manager-General Contractor contracts.

Based upon our review of the draft report, we concur with all recommendations as written and will take action to address these as the Department continues implementation of the MAP-21 and FAST Act project delivery requirements. Specifically, FHWA plans to implement recommendation 1 by March 31, 2018, and recommendations 2, 3, 4, and 5 by April 30, 2017. Please contact Gerry Solomon, Deputy Director, Office of Policy Development, Strategic Planning and Performance, Office of Transportation Policy, at (202) 366-1361 with any questions.

[17] https://www.fhwa.dot.gov/innovation/resources/
[18] https://www.fhwa.dot.gov/innovation/resources/increased_federal_share.cfm

Senator INHOFE. First of all, Director Panos, nice to have you back.

Mr. PANOS. Thank you.

Senator INHOFE. Your testimony is always revealing. You know, there has been a lot of talk about the FAST Act and the things that we have done in this Committee.

Let me just commend the Democrats and the Republicans, both, on the Committee that we have done things other committees don't do. We not only did the FAST Act, we did the Water Act, we did the Chemical Act. So we are kind of the Committee that gets things done and works together. And I see this as no exception.

When you were talking about your categorical exclusions, the discussion came up, I think it was with the Chairman asking the questions, with the question as to why should we do anything more until we have completed the exclusion process that is already in place. My feeling, and the feeling of people from Oklahoma, Mr. Panos, is that we need to be doing both at the same time. If you sit around and wait, that is just going to stall the things that we should be doing in order to streamline these projects. Somehow, I have always associated streamlining with how many more miles can we get out of a project, or how many more miles and more bridges can we get.

So I would ask you do you agree with the concept that we need to be doing all at the same time? And then, also, the kind of delays still associated with exclusion.

Mr. Panos.

Mr. PANOS. Senator, I would agree that we need to do all at the same time, and our proposals really don't have potential to be negatively interactive at all with the existing streamlining that is going on. Some of the issues that we address, again, as I had stated, were not ripe during the development of past legislation; today they are, and it is about continuous improvement while some of the other streamlining is going on. So, to answer your question, I would say both.

With regards to CATEX, Senator, I would just say, as our testimony stated, there are some more categories that could be included. We use it frequently in Wyoming and other rural States, and more of CATEX would be helpful to us.

Senator INHOFE. That is very helpful.

So that everybody knows what is happening, we are in the middle of a vote right now. I am staying until the Chairman gets back, and hopefully we can get through, Senator Whitehouse, as soon as I conclude here. Or in fact, I will even interrupt mine so you can get away, if you need to.

Now, I want to come back to you and ask you for some specific projects that you feel would be good to be given the privileges of the exclusions that were under discussion.

Before we do that, Ms. Pilconis, you made some comments, and it hasn't been discussed yet in terms of questions, on the citizen suits, and the costs and delays that come with these, and I would like to have you kind of go over with us what types of delays are there. And then when you mentioned there are four or five suggestions that came out of the contractors, if you were to single that down to one or two suggestions, what would that be?

Ms. PILCONIS. Yes, sir, thank you.

Well, the delays are extensive. I think there is a project right now that you can look at in the press, the I–70 project in Denver. It is a billion dollar project, and the project hasn't gotten off the ground yet because of citizen suits, suits that are really attempting to delay or stop the project, and potentially just stall it until the 2018 election where there may be a new Governor who has a different opinion about the project.

So citizen suits are a problem where it is preventing the public from realizing the benefit, as I said, of cleaner water, safer roads and bridges, a more efficient and reliable energy system. And some of the things that we have looked at are the positive improvements in the current streamlining reforms where it is shortening the statute of limitations. There are two different timelines under MAP–21 and FAST–41. So perhaps having a consistent timeline——

Senator INHOFE. OK, just a minute. I am going to ask you to elaborate on that because I am staying here when everybody else is gone, so there is going to be plenty of time.

[Laughter.]

Senator INHOFE. But let's go ahead. I know that Senator Sullivan has to preside as soon as we vote, and he had one question he wanted to move in front of Senator Whitehouse.

Senator SULLIVAN. Thank you, Mr. Chairman. And Senator Whitehouse, thank you.

I really appreciate the panelists. This is a really important topic. We are going to be introducing a bill called the Rebuild America Now Act, which relates directly to this infrastructure streamlining the permitting process.

Mr. Chairman, I would like to submit for the record a Wall Street Journal article on this topic from December 2016.

Senator INHOFE. Without objection.

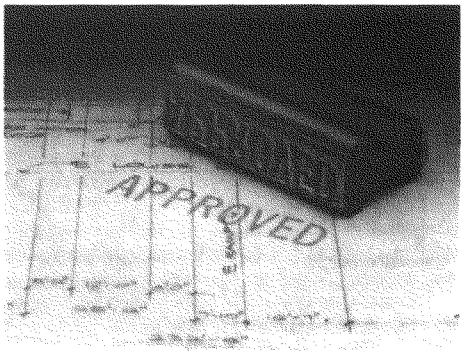
[The referenced article follows:]

THE WALL STREET JOURNAL.

How to Put Building Permits on a Fast Track

It can take 15 years to win approval for a new airport runway. No wonder U.S. infrastructure needs a lift.

By DAN SULLIVAN, **December 5, 2016**



WASHINGTON, DC -- President-elect Donald Trump has made investing in U.S. infrastructure a priority. This country urgently needs to build and repair roads, bridges, airports, pipelines and rail lines. But a huge roadblock is the federal permitting system. Even with a more business-friendly administration, a trillion-dollar infrastructure plan won't accomplish much unless Congress reforms the way public-works projects are approved.

America used to be the envy of the world in building great projects responsibly, efficiently and on time. The Pentagon was built in 16 months. The 1,500-mile Alaska-Canadian Highway, which passes through some of the world's most rugged terrain, took about eight months. Today, infrastructure projects across America often require several years simply to get through the federal government's pre-build permitting process. Consider a few examples.

New U.S. highway construction projects usually take between nine and 19 years from initial planning and permitting to completion of construction, according to a 2002 Government Accountability Office study. It will have taken 14 years to permit an expansion of Gross Reservoir in Colorado, and it took almost 20 years to permit the Kensington gold mine in Alaska.

It took four years to construct a new runway at Seattle-Tacoma International Airport, but it took 15 years to get the permits. Todd Hauptli of the American Association of Airport Executives bitterly joked to the Senate Commerce Committee last year, "It took longer to build that runway than the Great Pyramids of Egypt."

These problems have been building for decades as the U.S. regulatory state has grown. But the Obama administration has made the situation much worse by politicizing the construction of America's critical energy infrastructure.

It took Shell seven years and $7 billion to get White House permission to drill a single oil-exploration well off the coast of Alaska. Never mind that the Outer Continental Shelf Lands Act requires that resources in those waters "be made available for expeditious and orderly development." This capricious permitting was part of why Shell halted its operations in Alaska, stranding enormous oil and gas resources and killing thousands of potential jobs.

The Keystone XL pipeline languished in permitting purgatory for almost the entire two terms of the Obama administration before the president finally killed it in 2015. Terry O'Sullivan, president of the Laborers' International Union of North America, called the president's actions a "cynical manipulation of the approval process." President Obama also recently halted the Dakota Access pipeline, though in September a federal court determined that the project complied with arduous permitting, legal and consultation requirements.

Mr. Trump is set to reverse the Obama administration's abysmal permitting record, but Congress also has a responsibility. Last year I introduced the Regulations Endanger Democracy Act, or RED Tape Act, which would cap federal regulations with a simple one-in-one-out rule. When an agency issues a new regulation, it must repeal an old one. (Mr. Trump has suggested removing two for every one that is added.) Even though the idea has been successfully implemented in Canada and the United Kingdom, not a single Senate Democrat voted for it, and the legislation died.

Another bill I wrote would expedite federal permitting to repair or rebuild thousands of crumbling bridges across our country, but it received only three Democratic votes on the Senate floor. Once again my colleagues across the aisle prevented this reform from being implemented.

After Congress convenes in January, I will introduce the Rebuild America Now Act. It would establish strict time limits so that if permits aren't approved or denied for good cause within a specified time, then the project is deemed approved. The law also creates a one-stop shop for environmental reviews and permitting to ensure that projects don't get bogged down by agencies pursuing different agendas. Agencies would be required to abide by the RED Tape Act, a version of which would be part of the new law.

Having lost the election, progressives are already preparing litigation and protests to stop American infrastructure and energy projects. My bill would limit sue-and-settle practices that abuse the judicial system, as well as stopping groups that oppose economic development from needlessly delaying or killing much-needed projects. It would also have a builder's and worker's bill of rights, which would include timely permitting decisions and transparency in agency decision-making to spell out exactly why a permit is denied.

President Obama's $800 billion stimulus in 2009 wrecked the country's balance sheet while doing little to spur economic growth. An infrastructure bill that fails to reform dysfunctional permitting runs a similar risk. These reforms will prevent billions of dollars from getting wasted in red tape and litigation, making it easier to overhaul the nation's infrastructure.

Mr. Sullivan, a Republican, is a U.S. senator from Alaska.

Senator SULLIVAN. And my very quick question is, I still believe that there are a whole host of things that we can do that weren't included in the FAST Act. And again, to the Chairman's credit, this is a Committee that gets things done in a bipartisan way. But I think there are a number of things, whether it is categorical exclusions, whether it is timelines, because when you look across the country, you know, it takes, on average, 60 years to permit a bridge. It took, in Alaska, almost 20 years to permit a gold mine. The average in a GAO study from 10 years ago talked about highways taking, from beginning of planning and permitting to completion, 9 to almost 20 years.

I mean, we still have enormous problems. What would you say beyond what was in the MAP–21 and FAST Act, which is a good start, but from my perspective we need to do much, much more. And by the way, it is not just the members here, but one of the things that we are doing with our bill right now is the vast majority of the building trades, unions that build things, see this as their highest priority. So we are hopeful to get a bipartisan bill out of the Committee.

But what would be the issues that you would focus on that aren't currently in the law?

Ms. PILCONIS. I am sorry, I didn't realize that question was directed at me. Thank you. I appreciate that.

We are very much focused on requiring a nationwide merger of NEPA and the 404 permit process. We are also focused on more generally requiring the monitoring, mitigation, and other environmental planning work that is generated during the NEPA process, and that is included in the final environmental impact statement to satisfy the Federal environmental permitting requirements.

So if I can use the 404 permitting process as an example, we are focused in on 404 permitting and being part of the NEPA process so that when you complete NEPA, you actually have your final 404 permit approval from the Corps, because those processes are the longest, they are the most costly. With the 404 permitting, you have the most disagreements, and we have identified in our written statement that that is really where you have the most chokepoints. And I say chokepoints because with 404 permitting you are bringing in many related consultations, approvals, and certifications. So you are bringing in other agencies where you are doing a 401 water quality certification with the States, you have 408 approvals, you have endangered species consultations. Maybe you have historic properties. Maybe you have coastal zone management issues; migratory birds; wild and scenic rivers.

All of these agencies—if you are doing 404 permitting after NEPA, so it is not happening concurrently—all have to get together again and go through the same things that you have already discussed during NEPA. It is almost a do-over. Let's get it done during NEPA. Let's rely on the information that is collected during NEPA. And processing times are further extended by many months when the Corps will not accept the wetland delineation procedures that have come out of the NEPA process. That is creating a lot of uncertainty in the 404 process. It is increasing the cost of construction.

Senator SULLIVAN. Thank you. That is a great idea. We look forward to working with you on that.

And thank you again, Senator Whitehouse.

Senator INHOFE. Good.

Senator Whitehouse.

Senator WHITEHOUSE. Thank you.

For the record, Chairman Inhofe has led us through a considerable number of bipartisan successes in this Committee, and I hope that this forum provides the opportunity for another bipartisan success in this Committee. But I do think, in order for that to happen, what needs to be clear is that we are not using the general problem of citing often controversial projects as an excuse just to attack environmental regulation.

I would like to read from a Treasury Department document. Forty proposed U.S. transportation water infrastructure projects have major economic significance, which on page 6 concludes that these projects "face four major challenges to completion: (A) limited public resources, (B) significantly increased capital costs, (C) extended program and project review and permitting processes, and (D) lack of consensus among multiple public and private sector entities. A lack of public funding is by far the most common factor hindering the completion of transportation and water infrastructure projects."

That sentiment is echoed by the Congressional Research Service report, which I would like to ask unanimous consent to put into the record, responding to the Philip Howard "Two Years, Not Ten Years" report, and saying that CRS could find no information suggesting that compliance with Federal requirements "delayed" the project, which this relates to our T. F. Green Airport in Rhode Island. Within the timeframe available, the planning and the design and the engineering phases of development can take years for large and/or complex construction projects. Factors that may play a more significant role in the development of projects identified in the Howard report are primarily the lack of funding, local opposition, and design and engineering challenges.

I would also like to add to the record the Memorandum of Understanding that was entered into between the City of Warwick and our Rhode Island Airport Authority, which relates problems like the Land Acquisition Program, the Winslow Park ballfields, the relocation of Main Avenue, historical cemeteries, community outreach, and water and air quality, and note that there is actually a pending action between the city and the Airport Authority over that project.

So we have a situation in which, very often, projects that are not thought through, are not fully engineered, or haven't been worked adequately with the local communities then take a long time, as the extension of the T. F. Green Airport runway did. But if you took out the NEPA process, you would still have all those same issues with the local community.

I will tell you, when you have an airport in a city, and the City hates what the Airport Authority is doing, you have a problem on your hands. So working through to that Memorandum of Understanding was really the important solution in that, not undoing environmental regulations.

I would, on a positive note, describe one incident that took place in Rhode Island with respect to deepwater wind. Rhode Island is the first State in the country to get steel in the water to build offshore wind facilities, and as of last week paid electrons are now flowing into the grid and Block Island is having lower cost electricity as a result of this.

Here is what we did. We had a bold State agency that decided it was going to regulate in Federal waters. Just go ahead and do it. And they put together an extremely wide ranging process in which all major stakeholders were brought to the table together. They brought in the University of Rhode Island to provide factual and scientific support for allegations or concerns that were made in that process and to run the facts down and provide the best science.

And the result was that we went quite rapidly through that process and did such a good job that when it came time for the Department of Interior to provide its review, they basically promised Senator Reed and I that they would, if they viewed the Rhode Island process as having been adequate, not require a whole second process with them. So they looked closely at the Rhode Island process; they said you guys did a great job, we are done with it, you are licensed, get going.

The result is that we have steel in the water off of Rhode Island, we have people at work, we have boats being built to service all of that, we have electrons flowing. And just one State over, in Massachusetts, you have Cape Wind that died on the regulatory cross because they were never able to organize their regulatory process well enough.

So the lesson that I have learned in the long life of looking at these things is that if you really want to move projects expeditiously forward, getting everybody in the room together, making the process itself more expeditious is the way to do it, rather than singling out the environmental aspect of a process and blaming that for everybody's woes, and then trying to smash the environmental protections that are often significant, but not always significant, in these projects.

So I offer that in the spirit of a manner of going forward in bipartisan fashion.

I saw John Porcari doing a lot of nodding. Do you want to respond quickly to that?

Mr. PORCARI. Senator, I think you are bringing up a very important point, which is there are a lot of other potential issues on projects that we haven't really talked about, including community issues. The same principles that we have been talking about, front loading the process and getting the stakeholders around the table in the beginning, so everyone hears the same thing at the same time, is really important. And as you unpack these case studies, it is clear that many of the things that tripped up these projects for multiple years could have been avoided by doing it in a concurrent process with everyone around the table.

Thank you.

Senator WHITEHOUSE. Thank you, Chairman.

Senator BARRASSO [presiding]. Thank you very much, Senator Whitehouse.

Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman.

Director Panos, in your written testimony you cite concerns with subjecting rural States to the same rules as more densely populated States. Can you explain to the Committee how these requirements impact a rural State like Wyoming or South Dakota's ability to complete transportation and infrastructure projects in a timely fashion?

Mr. PANOS. Thank you, Senator. As I stated in my oral testimony, the kind of requirements take our very limited resources in rural States away from doing transportation projects, and specifically some safety projects. We simply don't have enough people to do all of the things that are being required by some of these additional requirements like the ones that I cited, the congestion studying the data points for the congestion study.

Again, as I stated in my oral testimony, we simply don't have urban congestion in Wyoming, and so to go out and spend a number of hours looking at dirt roads and looking at very rural highways that have very, very few cars on them, I have traveled once on a road, a two-lane road, an NHS road in Wyoming for 4 hours and did not see another car.

Senator ROUNDS. More goats than cars?

Mr. PANOS. More antelope than cars, yes, Senator. So we just don't have the same situation.

And I guess the point is that there are differences among the States. And I want to commend the Congress and commend, frankly, the U.S. Department of Transportation and this Committee for making steps toward those goals. But we are not done. There is more to do relative to not just environmental process improvement and streamlining, but non-environmental process review and streamlining like some of those that we had suggested earlier.

Senator ROUNDS. I am going to follow that up a little bit on something that I think was important you talked about earlier. Can you explain how State stewardship and oversight agreements are turning into Federal regulations instead of oversight? In other words, what can be done to strengthen what should be an equal partnership between USDOT and State DOTs to streamline the process and make it a substantive partnership rather than a back doorway to impose additional Federal regulations?

Mr. PANOS. Senator, we believe that the stewardship agreements have been an excellent start for us to work in an understandable, cooperative way, very efficient way with our USDOT partners. So they are a great start. We think that there are improvements to be made because of the inconsistencies from State to State, particularly with rural States, but also that some of them have been used to deliver additional requirements that we don't find in statute. And it is these kinds of streamlining, this kind of sort of extension of the use of the stewardship agreements that we would like to just take a look at, work with the Congress and USDOT, and make some improvements to those, because it is, and can be, an extremely valuable tool for us to move projects forward, a great platform, if you will, Senator.

Senator ROUNDS. Before I leave this particular line, in your testimony you pointed out that requiring the concurrence of every other

agency that has a meaningful role in the process extends the timeline for completion of a project. Can you discuss an experience? You have the anecdotes behind it and the reason why you share it. Tell us the experience you had with this where a project was delayed for this particular reason and suggest a solution.

Mr. PANOS. Senator, we have had a project in our North Sheridan area, which is close to the Montana border, that the lead agency had established a schedule, but the U.S. Army Corps of Engineers, with their 404 permit program, did not agree with, so they extended the project. And I think I had mentioned it in my previous testimony to this Committee that we spent 10 years on a project that takes 10 months to build. We were able to resolve it and get it built, it is under construction now, but it took about 10 years to get there, and it was because of this issue.

In our written and oral testimony, one of the solutions that the Committee could consider is giving the lead agency the authority to establish the schedule with consultation with some of the other agencies to ensure that that schedule meets their needs, and then deploy that schedule and not have those other agencies have veto power, if you will, over that schedule as it moves forward. And there would be an appeal process to resolve disagreements, and that appeal process even could involve the White House at some point.

But the point is that there could be a process which could expedite these projects even further without sacrificing environmental compliance, without sacrificing public interests. So we believe that that is a possible solution and one that the Congress should look at.

Thank you, Senator.

Senator ROUNDS. Thank you, sir.

Thank you, Mr. Chairman.

Senator BARRASSO. Thank you, Senator Rounds.

Senator Booker.

Senator BOOKER. Mr. Chairman, I am grateful.

Mr. Porcari, if you don't mind, I am going to direct my questioning to you. First of all, I am just grateful for your leadership. You are really playing what I think is an essential role for our country right now as Interim Director of the Gateway Development Corporation. I have become obsessed for the last 3 years of my life with getting this northeast corridor fixed and getting this Gateway Project done. We were able to resurrect it from something that had been killed to now something that seems to be moving forward. The previous Administration put it as part of their presidential dashboard and prioritized it.

Most people have no understanding about, No. 1, that northeast corridor region, one of the most economically productive regions on the planet Earth. More people travel along the northeast corridor by rail than by plane. But more than this, it is a vital artery, it is like the jugular vein in terms of the arteries of our country. And right now it is being constricted to the point where we are seeing every week it is eroding productivity, it is undermining the well-being of New Jerseyans, as well as others, because of that clogged artery and because of the challenges.

This is a case study, in my opinion, of us going from an enlightened American age where we invested in infrastructure and knew it was essential for jobs, essential for economic productivity, to what is a nightmare era where we took the inheritance from our grandparents and trashed it, didn't invest it, and are now left with, in this case, from the portal bridge to those two tunnels which are just decaying, over a century old. It was actually faster to travel along the northeast in the 1960s, half an hour quicker, than it is today.

So you are right there in the center of what is perhaps, at least according to the last Administration, the No. 1 most urgent infrastructure project in the United States of America because of all the economic activity that is essential to that. And again, one of the biggest concerns I hear about from my residents is how the delays and the unpredictability of transit between New York and New Jersey has just undermined the quality of life for individuals, making residents of New Jersey move back into New York because of that problem.

So getting this project done is so important. That is why your leadership, to me, is so central right now.

I know you made some comments, while I was off voting, about some of the process that is going on right now, the environmental review process, and I wonder if you can just talk for a second about any of the critical lessons you have learned and how that relates to the urgency of getting this project completed.

Mr. PORCARI. Thank you, Senator. I appreciate the question. As you point out, the Gateway Project is eliminating a single point of failure for 10 percent of America's gross domestic product, and between the Portal North Bridge, the bridge and the tunnel component, both of which are 106 years old, both of which were open to passenger service while the Titanic was under construction and the Wright Brothers were switching from the Model A to the Model B flyer, replacing those single points of failure is critical.

The first part of the project, the Portal North Bridge, is 100 percent designed, 100 percent permitted. It is ready to go subject to funding. It just missing the Federal funding component. The local funding component is in place.

The tunnel component, which by any standards is a major EIS, is on an accelerated basis. Instead of what was typically a 48-month or more process, it will be completed in 24 months or less. We will have a draft environmental impact statement in the next 60 days. One of the lessons from this is some of the very things that you have heard from the other witnesses and myself today, which is you can run the process concurrently. You have all the stakeholders in a front-loaded process around the table in the beginning, and the other associated permits, even outside of the NEPA process, whether it is the Corps 404 permit, Coast Guard bridge permit or anything else, they can today be run concurrently. They aren't always, but they can be. And that should be the norm, not the exception. And I think that is a place where we all agree.

So the Gateway Project shows, as well, that one of the unwritten but critical success ingredients is leadership, internally and externally. Externally, you and your fellow Senators from both New Jersey and New York, and both Governors, have positioned the project

so that it is ready to move forward. It would not have happened without that personal leadership.

Senator BOOKER. And I appreciate that, and this is something that I have invested a considerable amount of my time in in trying to get this project as expeditiously done as possible. But critically, your leadership and that of others who have been able to shrink dramatically the usual time it gets to get reviews, everything from the early engineering specs to the environmental reviews, has been extraordinary.

I want to just conclude by saying I am really happy that Senator Wicker just walked in at this time, because it has been a bipartisan——

Senator WICKER. [Remarks made off microphone.]

[Laughter.]

Senator BARRASSO. The Chairman recalls seeing you earlier, Senator Wicker.

Senator BOOKER. And the word around the whole Senate is that you were focusing on the issues of your great State, sir, and we understand how you are pulled in many different directions. But the enlightenment of this bipartisan coalition to invest in rail, and you said that the issue for us right now is not the speed with which we are getting this done, it is waiting for the funding. And I was very happy, with Senator Wicker, to come up with a bipartisan compromise to fund rail not only in areas like the northeast corridor, but to understand that rail is essential for economic growth, job creation. Dollars invested in rail produce multiples of return that anyone in New York City would celebrate in terms of the financial markets.

I just want to conclude by saying that that was critical about the CR that we just did, the bipartisan compromise, and right now it is a celebration for the Gateway Project to keep the resources there, and I just want to really give credit. This is the Committee that focuses on these issues. I know the Chairman, I know leaders like Roger Wicker have shown their commitment to making strategic investments of public dollars to get a boon in job creation and economic growth, and I am grateful for my colleagues. Thank you.

Senator BARRASSO. Thank you very much, Senator Booker.

I would like to next turn to Senator Wicker, who has worked closely with me on issues related to his home State of Mississippi and has continued to be focused on infrastructure needs there.

Senator Wicker.

Senator WICKER. Well, thank you very much. This is a typical morning where I rush from a vote, after having attended two hearings, two very important hearings on national defense and connectivity. So it is regrettable that I had to miss the testimony. But I certainly want to be here, Mr. Chairman.

And to my friend, Senator Booker, as a statement, first of all, about the importance of infrastructure and say that it seems to me that this might be one of the big areas that we would go ahead and address quickly on a bipartisan basis, because there is bipartisan support for infrastructure. Of course, we are here today talking about transportation infrastructure.

I have a couple of questions regarding challenges and roadblocks for the entire panel, and also a question about rural States like mine versus urban States like New Jersey, perhaps.

There are certainly regulatory hurdles. Can any of you talk, though, about the legal hurdles? And is there something to be said for legislation attached to any infrastructure bill about a certain timeframe in which the courts hear legitimate concerns, but it is not dragged out forever and ever?

Let me ask about that, if anybody would like to touch on that, and then I might have a moment or two to ask about the differences in getting to urban areas, where there is a lot of toll roads, and rural areas like Mississippi where there are none.

So, Mr. Panos, were you prepared to talk about the legal challenges?

Mr. PANOS. Senator, on the timing not so much, but I can talk a little bit about we were speaking earlier about the delegation to States of NEPA authority, and that some States have taken that on. Not a lot of smaller States have, and one of the reasons is a legal issue. The liability associated with taking on those responsibilities is significant for a small State, and it is a consideration for us, in addition to the capacity that we have to exercise sort of NEPA authority.

Also, we deal mostly with projects that are CEs or CATEX projects, categorically excluded projects. So we don't really have a need to do that. And frankly, even if we had the opportunity to take on that authority, we may not do that.

So that is the only legal side.

The second part of your question, I apologize, Senator.

Senator WICKER. Well, let's let others discuss the lawsuit impediments, and then I might get back to the other about the small States versus large States.

Mr. PANOS. Thank you, Senator.

Ms. PILCONIS. Sure. Thank you. So there are timelines within current law, setting a statute of limitations. There are different timelines in both MAP–21 and FAST–41, so there might be some merit in synchronizing the timelines. One is 150 days; one is 180 days.

Also, in FAST–41 there is a sort of get-in or get-out provision, so if you need to have been involved in commenting during the NEPA process and have commented on the issue in sufficient detail to have grounds, then, to bring a lawsuit, I think that Congress should consider making that an across the board requirement.

In addition, you might want to further consider and clarify the requirements for legal standing in general. AGC members have brought up the idea and suggested requiring that bonds be posted by plaintiffs seeking to block activities.

And with regard to environmental statutes, so not the procedural requirements, but actually the 20 environmental statutes that have citizen suit provisions, so those statutes obviously have resulted in hundreds and hundreds of environmental regulations that are very, very complex and difficult to understand, and have a lot of gray areas. So we would suggest that the enforcement of those very complex Federal environmental rules be enforced only by trained staff of Government agencies.

Senator WICKER. OK. Well, Mr. Chairman, if I might, since I touched on the other, and since Mr. Panos mentioned it in his written testimony, what I want you to do, if you don't mind, sir, is elaborate on the concern that you expressed on page 8 about public-private partnerships and approaches that work in the more densely populated States and might not work in States like Wyoming and Mississippi.

Mr. PANOS. Senator, in my written testimony as well as previous testimony in front of this Committee, I talked a little bit about the application of private-public partnerships in rural States. First I would say that it depends, I think, a lot on how you define public-private partnerships. There is a lot of variation in people's perceptions about what is and what is not a public-private partnership.

In our case, I think public-private partnerships in rural States are not the solution. We don't have toll roads, as in your State. It is unlikely that we will have the kind of equity and the kind of economic value that would be attractive to a public-private partnership in some of the definitions that I have heard.

Now, we do have an opportunity to do what we will call creative contracting, and bring in private partners to help us with warranties and other kinds of things associated with projects, but certainly public-private partnerships where there is an up front investment of capital just simply doesn't have the kind of return in rural States that it does in urban States.

Senator WICKER. Thank you very much.

And thank you for your indulgence, Mr. Chairman.

Senator BARRASSO. Well, thank you very much, Senator Wicker.

And by the early bird rule, Senator Fischer is next.

Senator Fischer, thanks.

Senator FISCHER. Thank you, Mr. Chairman.

And thank you to our witnesses today.

Director Panos, thank you for being here again. In your written testimony you advocate for waiver authority for the Federal Highway Administration to be able to provide relief for rigid rules when unforeseen circumstances arise that can severely delay our projects. Could you elaborate on the value of these waivers and how they might facilitate greater innovation and compliance?

Mr. PANOS. Senator, anything that can offer us a partnership which will perform better is a good thing. And there are times when waivers can be effective and not impact environmental compliance or environmental needs or public interests. So when those conditions occur, it would be optimal for us to have a waiver system that is regularly exercised that allows for projects to move forward, and focused on regulatory requirements, specifically focused on regulatory requirements. It would be very helpful.

Senator FISCHER. OK. Thank you.

Ms. Pilconis, in your written testimony you go into really quite extensive detail regarding NEPA process and the cumbersome permitting process, the requirements for our infrastructure projects. Certainly, each of us here wants to protect the environment and protect our precious natural resources. But from my perspective, we now have a process in place that is not only expensive, I think it is inefficient.

Last week our Nebraska Governor signed a bill into law that would allow the Nebraska Department of Roads to assume authority over the NEPA process, and we currently have several States that have that same process implemented, like Ohio and California, Florida and Utah.

From your perspective, has this been a successful endeavor, and would you recommend that more States assume that NEPA permitting process?

Ms. PILCONIS. Thank you for the question. That actually is not something that we have explored in our recommendations, the State assumption of the NEPA process. What we have really been most focused on is the concurrent review and issuance of the permit during the NEPA process, so that you don't have the permitting come after the NEPA process is complete. We are not focused on excluding anything, but rather avoiding duplication, so that you are not trying to complete the same consultations and reviews a second time.

Senator FISCHER. Now, have you found, though, when that permitting process works together, I would assume that it works more smoothly. But do you still have a lot of back and forth? I see that. I see that, that the Federal Government comes in and requires more, and then the State has to answer. Does that help eliminate that at all? Time is money when you look at infrastructure projects.

Ms. PILCONIS. So a good way to explain it, and something that I think the chart that we have prepared illustrates, is how much duplication that you have throughout the system. So within the NEPA process, it is kind of——

Senator FISCHER. The famous chart.

Ms. PILCONIS. Yes, the famous chart that is at the very top. So if you have any project where you are on Federal land or you have Federal funding or you need a Federal permit, you are going to be going through the NEPA process; you are going to be bringing in all of the other environmental statutes where they are having some kind of impact on the project. And all the agencies that are related to jurisdiction over those programs are all coming to the table.

So let's say you have a project where you are evaluating endangered species, historic properties, Coastal Zone Management Act issues. Now, those same issues, endangered species consultation, coastal zone management issues, historic properties, they are triggered again with every single Federal permit. So if you were to follow the color tracks down, if you need a 404 permit for your project and you are doing that separately, after NEPA, you again are doing endangered species consultation and those other steps. If you need a NIPT stormwater permit, again.

So the amount of time that it takes to get all those parties together and to reengage in those conversations, if you were benefiting from the streamlining provisions that we have in place, having early outreach, meetings, and involvement, everybody at the table during NEPA, let's get it done, use the work product from the NEPA process and not be repeating efforts.

Senator FISCHER. Well, hopefully we can achieve that and cut back on some of this duplication, because we do have limited resources when it comes to these projects, and as I said, time is money when it comes to infrastructure. And if we are going to in-

vest in the future, we have to be able to stretch taxpayer dollars and make them really count. So thank you very much.

Senator BARRASSO. Thank you, Senator Fischer.

Senator Capito.

Senator CAPITO. Thank you.

I want to thank all of you and extend apologies for not being here for the beginning. We are all running between our various committees, and we were over on Commerce, too.

We have spent a lot of time, and I am going to jump into the public-private partnership discussion. The consensus seems to be that P3 is ideal for projects, but as we have talked about, for rural America not quite so easy.

I would like to talk about, shortly, an example of something that is most unusual, and I wanted to see if anybody had run into this kind of a case.

Last week I participated in a stakeholder meeting with Congressman Evan Jenkins from West Virginia to discuss a project called the King Coal Highway. To make a long story short, a coal company is seeking to operate on a stretch of land that would become part of the highway. The State and local governments are working with the private sector to have, with the relevant 404 permitting, terms requiring it as the land is returned, which they are required to return the land after mining activity, that it would become flattened, and it would become pavement-ready, which, in a State like ours, is pretty difficult sometimes for the State Department of Transportation to lay down a stretch of highway.

This would all of the stakeholders to coordinate—this has been going on for years, years, and it has been stonewalled, and we are back at it again. But it would cut construction costs for the State to the tune of about $110 million.

So I am curious to know, Mr. Panos, have you run into any kind of unusual P3 projects that are sort of nonconventional like this in your State?

Mr. PANOS. Senator, I can actually give you two examples that are, as you have described, nonconventional P3 projects. One is exactly or very much like what you just talked about, the replacement of a road by a coal mine associated with their work. They needed to get to an area where there was a State highway, and we simply negotiated with them over a period of time to replace that State highway with another State highway, frankly, an upgraded one, and they did that. And then we turned over——

Senator CAPITO. Was that just a State-to-State transaction? Were there Federal——

Mr. PANOS. It was a Federal-State-county-city interaction.

Senator CAPITO. OK.

Mr. PANOS. But it was recent, in the last year. We have, like your State and like your example, have done it very frequently.

Another example of a nontraditional, I guess you would say, and it is not really a P3, it is more of, again, this idea of creative contracting.

Senator CAPITO. Right.

Mr. PANOS. We have one of the largest snow fence inventories in the United States, I think the largest snow fence inventory in the United States. A private sector company actually, once we model

where the snow fences need to be, they install, maintain those snow fences at no cost to us. The return to them is that they use the wood in the furniture making market and in the flooring market and things like that; it is aged barn wood, as you can imagine. So that is a creative contracting, but not a P3. This isn't something that they put the up front capital into; we do, did, and now they are just replacing it as we go forward. So it is a little untraditional, but can be looked at that.

And those are two examples, Senator.

Senator CAPITO. Very interesting. The first one sounds like it has a lot of similarities for what we have been trying to accomplish in a very expensive place to build a road. It would be a great way to open that up for economic development.

I was just in Commerce Committee, and we were talking about deployment of broadband. And according to the 2016 FCC Broadband Progress Report, my State is the 48th best connected. I am wondering how does that sound? It sounds good, but it is not good. And Wyoming is number 44, because of lack of population density, large area of difficult terrain, all the different areas.

Senator Hatch has introduced a bill called Highway Rights-of-Way Permitting Efficiency Act, which is cosponsored by me, Senator Ernst is on the bill, Senator Fischer, that will allow the Secretaries of Interior and Agriculture to enter into Memoranda of Understanding with the States to allow them to approve broadband deployment through Federal lands and to make the ease of laying that cable through our States. So it is almost a dig once kind of proposition, but it would really help, I think, so that we wouldn't have to have redundant permitting approvals.

I am wondering, obviously Wyoming has great need in the broadband deployment area. How does that sound to you?

Mr. PANOS. Senator, it sounds excellent, and it is something that we are already deploying with some of our State rights-of-way and broadband to connect our schools, our public schools and our rural communities. So I don't know if we are ahead, but we are certainly on our way toward that goal.

Senator CAPITO. Thank you.

Ms. Pilconis, do you know of telecommunication infrastructures that are already being used in existing rights-of-way, this concept?

Ms. PILCONIS. No, I am sorry, I am not familiar with that.

Senator CAPITO. OK.

All right. Well, I think my time is up.

Thank you, Mr. Chair.

Senator BARRASSO. Thank you, Senator Capito.

Senator Ernst.

Senator ERNST. Thank you, Mr. Chair.

Ms. Pilconis, Iowa DOT works closely with the U.S. Army Corps in obtaining 404 and 408 permits, and I have been told by the folks at IDOT, or Iowa DOT, that the Section 408 permit is required prior to the issuance of a Section 404 permit, and that a streamlining effort to make the 404 and 408 permits simultaneously would be very helpful.

Can either of you comment on this, or can any of you comment on this? And relatedly, can you also explain why AGC is so focused on the 404 permitting process just in general?

Ms. PILCONIS. Sure. Thank you. The 408 approval process is currently something now that is required by law that does come before the 404 permitting process, and that is something that our members have identified as a step that is drawing out the length of time it takes to get approval on a 404 permit. So, in fact, that is kind of an extra step in the process. It is something that we have identified in our chart that I continue to refer to.

So, within the 404 permit process we are so focused on that and the concept of merging that with the NEPA process because—and I have mentioned this already—that is a permit that is one that is the longest to obtain when you are obtaining an individual permit. Data showed that it is, on average, 788 days. It is the most costly, $270,000 per project. So if you are doing that after the EIS, you are talking about a large amount of money and a very long time.

You have the most disagreements, or as I identified in my written statement, we call them chokepoints in the process, and that is likely because of the many related consults, approvals, and certifications that go into 404 permitting. So, as you said, at the onset it is do I need a 408 approval.

But in addition, because it is a Federal permit, it is also triggering Endangered Species Act consultation, 401 water quality certification with the State, historic properties, Coastal Zone Management Act issues.

Those same things, though—and I want to point this out—are also triggered with the 408 approval. So if you have a Federal approval or permit, there are certain things that are triggered. So that is the duplication that AGC is trying to stress. You have those same agency consultations happening at NEPA; you will have them happening with the 408, and you will have them happening with 404. Therein is the extreme duplication.

Senator ERNST. I appreciate that. And what we would like to see, of course, is a much more efficient process going through that and hopefully, then, less costly, as well, to do those projects.

Mr. Panos, Iowa is a pay-as-you-go State, pay-as-you-go funding State for major transportation investments. As you are aware, there is a fiscal constraint requirement for planning that requires indication that there is enough revenue available to construct a project in statewide metropolitan transportation improvement programs. This requirement causes Iowa significant challenges in timely development of major projects such as Mississippi River crossings and projects that would be on the shelf, ready for funding on short notice.

It is my understanding that when you are at the beginning stages of the project planning, and you are a pay-as-you-go State just like Iowa, this adds additional hurdles to project development. It is kind of that chicken and egg situation, you know, which came first.

Has there been any discussion of providing reasonable flexibility with this requirement or decoupling this from NEPA approval to allow construction-ready projects to proceed through environmental reviews and continue to progress as funds become available for pay-as-you-go States like Iowa?

Mr. PANOS. Senator, as in my written testimony, in fact, it is one of the suggestions that we make for improvement to the process as we move forward, and it is something that the Congress could consider, should consider as we move forward, is the idea of pay-as-you-go and the decoupling of it. Not completely, but there can be some flexibilities in that process.

Senator ERNST. Very good. I think we would all appreciate a little more flexibility and efficiency.

Thank you, Mr. Chair. I will yield back my time.

Senator BARRASSO. Thank you, Senator Ernst.

Senator CARPER. Thanks, Mr. Chair.

Mr. Panos, I looked back through your testimony, and I read just a short paragraph. I will say it again. "To some extent, the increase in the percentage of highway projects receiving CATEX treatment"—I had to look that up, what is it, categorically excluded?—categorically excluded treatment "results from the increasing emphasis given to preservation type projects within State DOJ budgets. That has been the case in Wyoming where, in recent years, nearly all projects have been categorically excluded under NEPA." Is that true?

Mr. PANOS. That is true, Senator.

Senator CARPER. And it says nearly all. I think in my testimony I said as many as 90 percent are categorically excluded from NEPA. Is it like closer to 100 percent?

Mr. PANOS. I don't know the exact percentage, but it is significant, and it is primarily the way we go because we are preserving our highways and not expanding them.

Senator CARPER. OK. I am going to ask you a question for the record just to see if we can nail that down more accurately, OK? Thank you.

Let me come back to funding. We have a project in southern Delaware. We have three counties in the county seat of Sussex County, which is in the south. Third largest county in America. The county seat is Georgetown. They have an airport just outside of Georgetown called Delaware Coastal Airport. They just renamed it Delaware Coastal. And they were trying to extend the runway length to 6,000 feet so that we can bring in bigger airplanes to undergo significant work that goes on at a company there called Aloft. And we are having a hard time getting this done expeditiously.

The county has finally actually come in. We have already extended the runway once another 500 feet. The county has said we will pay for that just to get it moving, so we said that is good. Now we have to move a road and kind of align one road with another road, better intersection. And I met with our secretary of transportation—gosh, a month ago, a terrific woman, Jennifer Cohen—and I said how are we doing on our project, and when is it going to be done? I think she said in 4 years. I said, you have to be kidding. You have to be kidding. It has taken like a number of years already because they didn't have any money, or enough money to pay for it along with other projects.

We have another big project up in Wilmington. I–95 comes right by Wilmington. Northeast corridor comes right through Wilmington. Eleventh busiest train station in the country. We have a wonderful riverfront there on the Christina River called the River-

front, and we are trying to find a way to get ingress and egress out of the Riverfront; it is not very good coming off 95.

On the other side, to the east, we have State Route 13, which is a major north-south road, and we have gotten money to do an ingress-egress off Route 13 into the Riverfront, and it has taken 10 years, and a big part of the problem is money. Money.

If you were giving us some advice as to how to raise some money for roads, highways, bridges projects as we look forward to filling—it is not the cupboard is bare, but there is a lot more demand, as you know, than there is money to meet the demand. But just give us a couple of good ideas.

Leah, do you want to go first, please? I think you all have been very supportive with some other ideas in the past, but give us a couple good ideas, please.

Ms. PILCONIS. The funding issue is not where my expertise lies, my focus really is on the environmental issues.

Senator CARPER. That is fine.

Ms. PILCONIS. But AGC definitely does recognize that the primary challenge to being able to build more infrastructure, of course, is the funding. We have noted in our testimony that Congress has not raised the primary source of infrastructure funding, the Federal gas tax, since 1993.

Senator CARPER. Since when?

Ms. PILCONIS. 1993.

Senator CARPER. That would be how many years? Twenty-four years.

[Laughter.]

Senator CARPER. That would mean that the gas tax, what is it, 18 cents, is worth about less than a dime——

Ms. PILCONIS. Yes, we do that calculation.

Senator CARPER. Less than 15 cents. Is that right?

Ms. PILCONIS. Also terrible at math.

Senator BARRASSO. The Senator is leading the witness.

[Laughter.]

Senator CARPER. And you are doing a great job of following.

Ms. PILCONIS. In terms of surface transportation, Congress and the Administration must restore solvency to the Highway Trust Fund. So we are pointing those things out in our statement.

Senator CARPER. Thank you. For someone who is not the expert on this, AGC did great.

John, same question.

Mr. PORCARI. It is an excellent question, Senator. I would first point out that local jurisdictions throughout the United States do self-help measures. Referendum and other measures have been raising revenues for important projects. So the local and State component is typically in place. The Federal Government is a less reliable partner on the funding side than it used to be, and that, in practical terms, impacts on both the kind of projects you described. Typically, the larger the project, the more the uncertainty hurts the project, and that will be, I think, even more prevalent in the future as you look at these large projects.

So as important as the discussion is today about reengineering the process, greater efficiencies, more concurrent process, all of which we support, that only helps if the money is there to actually

build the project at the end of it. And in my practical experience with major projects, in particular at the State level, you are not nearly as driven to complete the environmental process and other permitting processes if you don't know the construction money is there at the other end.

Senator CARPER. That is a great point. That is a great point.

Mr. Panos, Bill.

Mr. PANOS. I would only say that, as has been said, fully funding the Highway Trust Fund I think is important. The idea of funding and process improvement together, links together, I think is important. But you know, the Federal financing of transportation infrastructure is complex, and I wouldn't purport to tell you how to do it, but certainly it is going to be very important that we figure this out, because it is going to take both money and process improvements as we go forward.

Senator CARPER. Good.

Later today we will have some folks in. There is a Northeast Corridor Commission that is going to be in town, and they are going to spend some time with us later today and talk about the really serious need for infrastructure improvement up and down the northeast corridor. I think our freight railroads, for the most part, are in pretty good shape; you know, they largely fund themselves through their businesses.

But I think it is under the FAST Act we created an initiative that calls us to look really closely at an idea that I call vehicle miles traveled. The North American car of the year, Chevrolet Bolt, gets 240 miles per charge. Yesterday I drove a vehicle, a Honda. They have the Honda Prius. Not the Honda Prius—oh, gosh, several models of Honda, and they have a new model they are just introducing called the Clarity, like the Accord and all that stuff, but it is a new model, and they come in battery, just battery; they come in fuel cells, just fuel cells, and they get something like 350 miles on a charge, fuel cells on hydrogen. And those vehicles, General Motors Bolt will not use any gas or diesel. The car I drove yesterday, fuel cells, Honda, won't use any gas or diesel. And we need to come up with ways more and more vehicles like that enter the roads to make sure that they are going to pay for these roads, highways, bridges.

So vehicle miles traveled can be a good way to do that. If we are smart enough in this country to develop vehicles that can drive without a drive from coast to coast, we ought to be able to figure out how to do it. The smart way would be vehicle miles traveled irrespective of privacy.

Thanks, Mr. Chairman.

Senator BARRASSO. Well, thank you very much for your comments.

I want to thank all of you for being here today and for your testimony.

The hearing record, of course, is going to be open for the next 2 weeks because other members may put in written questions. I know you had suggested that you had a written question or two.

I want to thank all of you for your time, your testimony.

The hearing is adjourned.

[Whereupon, at 11:45 a.m. the Committee was adjourned.]

[Additional material submitted for the record follows:]

Can You Really Make Money With Vending Machines?

by Suzanne Kearns
(https://quickbooks.intuit.com/r/author/428/)
3 min read

The ads are alluring: "Make $500 an Hour in the Vending Business!" "Earn Money While You Sleep in a Vending Machine Business!" But they sound way too good to be true. Can vending machines really be a viable way to earn cash?

The National Automatic Merchandising Association reports that 18 percent of vending-machine operators make between $1 million and $5 million a year. But proceed with caution: The Better Business Bureau warns of scams, and a search of "vending machines" on the Federal Trade Commission's website unearths dozens of fines and lawsuits.

Here are a half dozen tips for getting into the vending-machine business safely and profitably.

1. **Decide on the vending machine type.** Many vending machines are filled with a selection of drinks and snack foods. Others focus more narrowly on a particular category, such as ice cream, popcorn, cigarettes, videos (think Redbox), or personal hygiene. Some machines dispense individual units; others offer items in bulk, such as hard candy and gumballs.
2. **Get the proper licenses.** In some states you'll need a seller's permit to operate vending machines, and many states require you to charge sales tax on the items in the machines. The tax varies by state, as does the minimum price that launches the requirement to collect the tax. Be sure to check with your local licensing office to find about the requirements in your area.
3. **Buy the machines.** Decide whether you want to buy new or used machines. Prices can vary wildly: A new machine often runs a few thousand dollars, while

Run your entire business with QuickBooks Try it free (https://quickbooks.intuit.com/pricing/?

used ones go for a few hundred or less on Craigslist, eBay, or Amazon. Keep in mind that all machines eventually break down, so you'll need to either hire someone to repair them or learn to do so yourself. (Tip: You can buy parts from a manufacturer such as Vendors Exchange International.)

4. **Buy or lease a truck.** Depending on how large your operation is, you'll need a van – or, perhaps, a specialized beverage truck – to carry products from machine to machine. A used truck starts at about $5,500 at places like Specialty Trux, or you can lease a basic truck for about $500 a month.
5. **Find a supplier.** You can buy products in bulk at a local big-box store or go online. Check out sites like Candymachines.com for bulk candy, or SmartVending for a full line of supplies. Markups will vary, depending on the product. Bulk items, such as candy and gumballs can be marked up 200 to 300 percent, while single items can typically be marked up between 60 and 100 percent. Of course, the more products you buy, the better price you'll get, so you may have to settle for lower markups when just starting out in order to be competitive, and then increase them as you add machines.
6. **Secure a location or two.** Where you place your vending machines will determine how successful you are. Check out each site before you approach its owner. Look for a place that gets a lot of foot traffic, such as an airport, a parking lot, a shopping mall, a large office building, or a busy waiting room. Once you select a location, approach the owner and work out a deal. Some vending machine operators offer the owner a small percentage of their profits; others donate a portion of sales to charity. NAMA, in its publication Vending 101 (http://www.vending.org/industry/vending101.pdf) [PDF], suggests that you sign a written contract whenever you place a machine.
7. **Service your machines.** Once your machines are placed, it will be up to you to keep them clean, well-stocked, and in working order. You may be able to do this by visiting once a week, but if the machine is popular, you may need to turn up more often.

Of course, all of this isn't quite as easy as earning money while you sleep. But with careful planning, hard work, and a little luck, you can run a successful vending-machine business.

Popular Articles

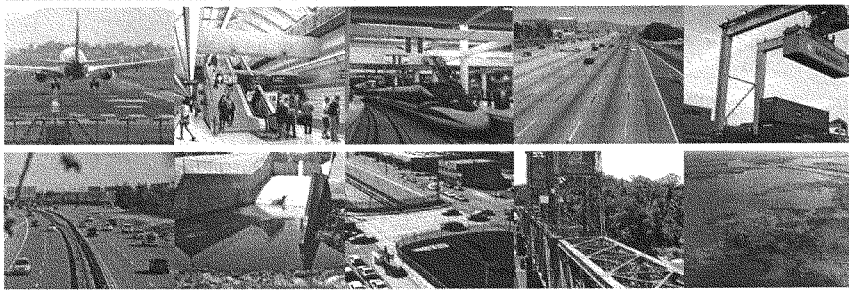
Salary or Draw? How to Pay Yourself as a Business Owner (http://quickbooks.intuit.com/r/payroll/salary-or-draw-how-to-pay-yourself-as-business-owner/)

7 Accounting Formulas Every Business Should Know (http://quickbooks.intuit.com/r/bookkeeping/7-accounting-formulas-every-business-should-know/)

Mobilize! 6 Ways to Conduct More Business from Your Phone (http://quickbooks.intuit.com/r/mobile-and-apps/mobilize-6-ways-conduct-business-phone/)

Run your entire business with QuickBooks **Try it free (https://quickbooks.intuit.com/pricing/?**

Prepared for the
Build America Investment Initiative



40 Proposed U.S. Transportation and Water Infrastructure Projects of Major Economic Significance

AECOM
in partnership with
Compass Transportation Inc.
Raymond Ellis Consulting
Rubin Mallows Worldwide Inc.

This report was prepared by a team led by AECOM under contract TOS-15-F-0014 for the U.S. Department of the Treasury on behalf of the Build America Investment Initiative.

Authors

Toni Horst, Ph.D	AECOM
Richard Mudge, Ph.D	Compass Transportation Inc.
Raymond Ellis, Ph.D	Raymond Ellis Consulting
Kenneth Rubin, Ph.D	Rubin Mallows Worldwide Inc.

With significant technical contributions from Carey Barr, Andrea Bohmholdt, Dana Jaffe, Barrett Lane, Srividya Santhanam, and Jason Weiss.

Disclaimer

All project costs and benefits are based on assumptions and methodologies established by the authors. All findings, conclusions, and recommendations set forth in this study are those of the authors, and may not reflect those of the U.S. Department of the Treasury or the Build America Investment Initiative. The inclusion of a project in this study is not itself evidence that the project is suitable for federal funding.

AECOM is among the largest architectural and engineering consulting firms in the world and has a market share over 25 percent, as compared to the total market share of the 10 largest firms in the sectors considered in this study. AECOM has been involved in about half of the projects identified in this study. The authors' methodology for identifying these projects is described beginning on page 9.

Contents

Executive Summary 1

1.0 Introduction 3

1.1 Purpose and Overview 3

2.0 Projects and Programs of Major Economic Significance 3

2.1 The 40 Projects 3

2.2 Two Large-Scale Programs 5

2.3 Why Are Some Types of Infrastructure Missing? 5

3.0 Primary Challenges to Completion 6

3.1 What Are the Challenges to Completing Each Project? 6

3.2 How Could Challenges to Completion Be Addressed? 7

4.0 Infrastructure's Contribution to the Economy 8

5.0 How Was the List Developed? 9

5.1 How Do We Define Infrastructure? 10

5.2 How Do We Define a Project? 10

5.3 How Do We Define a Challenge to Completion? 10

5.4 Outline of the Approach 10

5.5 Creating the Initial List 11

5.6 Creating the Long-List 12

5.7 Creating the Short-List and Final List 12

5.8 Establishing a Common Benefit-Cost Calculus 12

5.9 Identifying the Primary Challenges Faced by Projects 13

5.10 Projects that Were Not Considered for the Short-List 13

6.0 What Did We Learn from Constructing the List? 14

Annex: Project Profiles 15

List of Exhibits

Exhibit 1: Distribution of Projects by Region and Mode 2

Exhibit 2: Total Net Benefits by Region and Mode 3

Exhibit 3: 40 Proposed U.S. Transportation and Water Infrastructure Projects of Major Economic Significance 4

Exhibit 4: Primary Challenges Across the 40 Projects 6

Exhibit 5: Development Process for the Short List of Projects 11

Executive Summary

In recognition of the important role that public works infrastructure plays in supporting national economic growth, the U.S. Department of the Treasury (Treasury), on behalf of the Build America Investment Initiative, commissioned this study. Its objective is to identify 40 proposed transportation and water infrastructure projects in the United States of major economic significance, but whose completion has slowed or is in jeopardy.[1] This study provides the public with a picture of how, if completed, these proposed infrastructure projects would have a positive impact on national and regional economic activity, such as reducing congestion, improving safety and reliability, decreasing flood hazard, and other benefits.[2]

This study also identifies the primary challenges facing each project, including funding shortfalls, regulatory considerations, and lack of consensus, in an effort to inform federal, state, and local debates over infrastructure policy. This project-focused approach allows the reader to more easily grasp how infrastructure investment can create real and substantial value for businesses, consumers, travelers, and community residents, and helps put a "face" to our nation's infrastructure challenge in various regions of the country.

We were asked to focus on transportation and water projects because such projects are primarily funded by the public sector, and have experienced problems with moving forward. Projects are divided into two groups: 1) those where planning activities are underway and 2) those where planning activities are still underway and some funds have been obligated to permit limited implementation but delivery of the complete project remains pending. Other important infrastructure investments, such as those in the energy and telecommunications sectors, were not considered. These investments are typically funded directly by private investors, and have not experienced the same degree of completion uncertainty.

Different projects offer different types of benefits, and our analytical approach was sufficiently flexible to accommodate this diversity of outcomes. This is important because project sponsors develop these projects to address specific problems in their communities. For example, some projects may deliver substantial travel time savings, but not much savings in users' travel costs. Others improve safety, but do not add capacity. Where studies already had assessed a project, our team evaluated the inputs and methodology, and adjusted the values so that net benefits would be comparable across projects. Where data was available but a study was not completed, our team made an estimate of each project's benefits and costs consistent with federal assessment guidance for that type of asset.

Total Net Economic Benefits

The 40 projects identified in this study would generate an estimated $800 billion (midpoint) of net economic benefits across the nation if they were completed and available for use. This represents a range of $700 billion to $1.3 trillion in total benefits less capital costs over $200 billion in net present value terms.

Our team analyzed individual proposed projects having capital costs greater than $300 million that could be commenced (and, for many, completed) within the next five to ten years if major obstacles to completion – most often a lack of funding – are addressed.[3] This minimum capital cost threshold allowed us to focus on those projects that would generate the largest absolute net economic benefits.

This study highlights a broad, representative sample of projects from across the country covering all the major types of transportation and water infrastructure such as highways, rail, waterway navigation, and dams. Traditional projects, as well as a few that emphasize new technology or the use of pricing to manage capacity, are featured. Several projects are, in fact, part of broader programs, since they include multiple, individual projects. Many promising, early-stage projects were not included because reliable data needed to estimate net economic benefits were unavailable. **Undoubtedly, this study omits many good projects.**

Our team also chose to highlight two important initiatives that represent large-scale programs rather than projects. The enormous size and transformative nature of these programs warrant a deeper discussion around them, separate from that of the 40 projects of major economic significance.

An annex to this report provides in-depth profiles for all 40 projects and the two large-scale programs. Each profile is a two-page illustrated summary that describes the project, why it is an important investment, the market that would use it, considerations in its delivery, and the primary challenges to its completion, while also providing estimates of the project's net economic benefits, capital costs, and benefit-cost ratio.

[1] We characterize projects as being "economically significant" if they have the potential to generate net economic benefits (benefits in excess of costs) that are large in magnitude.

[2] Certain social welfare benefits, such as quality-of-life improvements, are difficult to measure, and were not assessed.

[3] Environmental elements of project costs, such as mitigation of environmental impacts or creation of environmental amenities such as wetlands or shoreline protection were included in project costs to the extent that project planning documents included them. In some cases, environmental costs (e.g. some externalities) were not measured by project sponsors, in which case they were not included as project costs.

Exhibit 1: Distribution of Projects by Region and Mode

Region	Highways	Water Resources	Railways	Ports-Waterways	Air	TOTAL
South	4	4	5	4	0	**17**
West	4	3	1	0	0	**8**
Midwest	4	1	1	1	0	**7**
Northeast	0	0	2	1	0	**3**
National	2	1	1	0	1	**5**
TOTAL	**14**	**9**	**10**	**6**	**1**	**40**

Note: Some projects span more than one region; in those instances the project has been assigned to the region with the greatest share of the project.

The first of two major findings from this analysis is the relative scarcity of projects that are truly national in scale, or even cover multiple states. Most projects have a state or metropolitan-area focus. While national projects frequently generate the greatest economic returns because of their larger geographic scope, they are a comparatively small percentage of the 40 projects of major economic significance. This is logical since, with few exceptions, federal programs distribute funds to regional, state, or local infrastructure agencies that make investment decisions on projects that generate benefits at the regional, state, or local levels. However, it also reflects a fragmented national vision for infrastructure. With a few exceptions, our national process for project delivery does not yield a national or regionally coordinated outcome (the Next Generation Air Transportation System, a project that would modernize the air traffic control system nationwide, stands out as a notable exception).

Total Benefit-Cost Ratio

The 40 projects identified for this study vary widely in their size and the magnitude of the net benefits generated. The total benefit-cost ratio across all 40 projects falls between 3.5 and 7.0. This means that if all the projects on the list were constructed, the nation would gain benefits in the range of $3.50 to $7.00 for every $1.00 spent on capital costs.

The second major finding is that a lack of funds is by far the most common challenge to completing these projects (including those that have commenced but since been delayed). Thirty-nine of the 40 projects require increased funding, whether from taxes, user fees, or other sources.

The completion of these projects would deliver significant economic benefits to every region of the nation. In some cases, completing these projects could be transformative, potentially offering businesses and travelers large savings in time or cost that allow them to access larger markets or travel more frequently. The investments encompass freight and passenger modes with the result that the benefits generated by these projects would span the consumer, manufacturing, and service sectors of the national economy. And, as noted earlier, this list is not exhaustive. There are many good projects that have not been included – primarily due to data constraints – which would still benefit the nation's economic performance if they were undertaken. In short, overcoming the barriers to the completion of these projects represents a large economic opportunity for the United States.

1.0 Introduction

1.1 Purpose and Overview

Treasury, on behalf of the Build America Investment Initiative, commissioned our team to develop this study in order to address three basic questions:

- *What is a representative list of significant transportation and water infrastructure projects that have been proposed but face challenges to completion?*
- *What would be the economic gains to various regions and the nation if these projects were to be completed?*
- *What are the primary challenges to completing these projects?*

At the national level, the value of infrastructure investment has historically been demonstrated by "needs" studies that sum engineering estimates of the capital costs required to meet broad service delivery and/or regulatory objectives. The first such study was published in 1983, and its title made its message clear – "America in Ruins."[4] Since that pioneering work, numerous updates have been published by federal agencies and trade associations, including the American Society of Civil Engineers (ASCE). ASCE's 2012 report, *A Failure to Act,* took this approach one step further by estimating the loss of value associated with system deterioration in the aggregate.

This study takes a different approach. Because the focus is on projects, the team was able to 1) screen for the most economically productive individual projects; 2) capture the benefit of technology or changing operating practices that would make existing assets more efficient; and 3) capture detail about why there is a gap between needed and actual investment levels other than a lack of adequate funding.

Working through the questions outlined above, our team compiled a list of projects that have begun development, and in some cases are moving forward, but for which there exist barriers to completion. Projects are divided into two groups: 1) those where planning activities are underway and 2) those where planning activities are still underway and some funds have been obligated to permit limited implementation but delivery of the project remains in jeopardy. We describe each project and its major attributes, such as location, type of infrastructure, cost, expected net economic benefits (benefits less costs) for the region and the nation – and critically – the primary challenges they face. By identifying specific projects, this report allows readers to assess concretely how infrastructure impacts their daily lives, both personally and commercially.

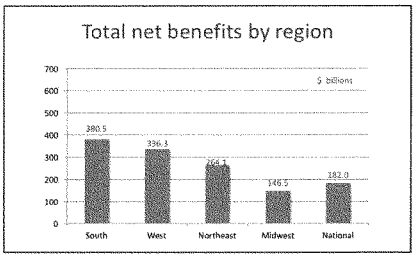
The study's project-based approach extends a practice – frequently used at a particular locality – to a nationwide application to help justify and motivate investment, and complements existing national needs-based studies. By building from a base of vetted and assessed projects, there is an opportunity to identify actions in addition to funding that could move these projects forward to the benefit of communities and businesses across the nation.

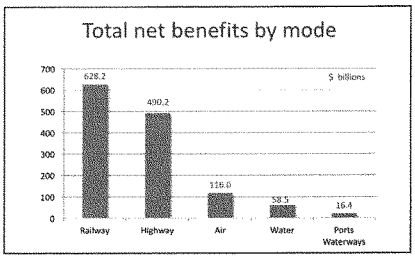
2.0 Projects and Programs of Major Economic Significance

2.1 The 40 Projects

The 40 identified projects would generate an estimated $500 billion to $1.1 trillion of net economic benefits across the nation if they were completed and available for use. This represents about $700 billion to $1.3 trillion in total benefits less capital costs over $200 billion in net present value terms. The benefits for many of these 40 projects at the regional or metropolitan level would be pronounced. Economic benefits that would be seen from the completion of these projects include, but are not limited to: safer passenger travel, more reliable freight shipments, less congestion on highways, and less risk of and fewer adverse consequences from flooding. A more detailed description of how infrastructure may positively affect the economy can be found in Section 4.0. The exhibits below illustrate that these benefits would be distributed across every region of the United States.

Exhibit 2: Total Net Benefits by Region and Mode (40 projects)





Note: One multi-state highway project runs across the South region, leading to the large allocation of benefits in that region.

[4] Choato, Pat, and Susan Walter. 1983. *America in Ruins: The Decaying Infrastructure*, NC: Duke University Press.

Exhibit 3: 40 Proposed U.S. Transportation and Water Infrastructure Projects of Major Economic Significance

#	Project	Type	Region	Analysis Period (years)	Net Economic Benefits[1] $M	Benefit-Cost Ratio
			Planning/ Implementation Underway			
1	I-10 Program	Highway	South	25	> $236,000	> 10.0
2	National Traffic Signal Coordination	Highway	National	35	> $3,900	> 10.0
3	California High Speed Rail	Railway	West	50	$195,450	4.0 – 7.0
4	Next Generation Air Traffic Control System	Air	National	18	$87,000	4.0 – 7.0
5	Positive Train Control	Railway	National	20	$40,600	4.0 – 7.0
6	Hampton Roads Crossing	Highway	South	35	$28,500	4.0 – 7.0
7	Chicago CREATE	Railway	Midwest	30	$16,800	4.0 – 7.0
8	Rural Water Supply Program	Water	West	40	$8,350	4.0 – 7.0
9	Northeast Corridor Improvements	Railway	Northeast	35	$150,000	2.0 – 4.0
10	Southeast High Speed Rail	Railway	South	30	$8,550	2.0 – 4.0
11	I-70 Missouri	Highway	Midwest	30	$7,750	2.0 – 4.0
			Planning Underway			
1	I-70 East	Highway	West	35	> $15,700	> 10.0
2	Texas Freight Shuttle System	Railway	South	20	> $9,400	> 10.0
3	New Orleans Rail Gateway	Railway	South	20	> $5,500	> 10.0
4	Mississippi River Crossing	Highway	South	35	> $5,000	> 10.0
5	Medium Diversion at White Ditch	Water	South	50	> $3,500	> 10.0
6	Medium Diversion at Myrtle Grove	Water	South	50	> $2,500	> 10.0
7	Brent Spence Bridge	Highway	Midwest	20	$18,600	7.0 – 10.0
8	Savannah Harbor Expansion	Ports-IW	South	50	$4,750	7.0 – 10.0
9	Houston-Galveston Grade Crossing Improvements	Railway	South	20	$3,000	7.0 – 10.0
10	Atchafalaya River/Navigation	Water	South	50	$2,250	7.0 – 10.0
11	Boston Harbor Dredging	Ports-IW	Northeast	50	$2,200	7.0 – 10.0
12	I-35 Trade Corridor	Highway	Midwest	35	$61,650	4.0 – 7.0
13	MTC Managed Lanes	Highway	West	35	$7,200	4.0 – 7.0
14	2nd Avenue Subway - Phase 2	Railway	Northeast	35	$22,150	2.0 – 4.0
15	I-11 Corridor	Highway	West	30	$19,400	2.0 – 4.0
16	Morganza to the Gulf	Water	South	50	$18,350	2.0 – 4.0
17	I-69 Extension	Highway	South	30	$13,550	2.0 – 4.0
18	Puget Sound Gateway - Phase 2	Highway	West	30	$5,250	2.0 – 4.0
19	I-5 Columbia River Crossing	Highway	West	33	$5,000	2.0 – 4.0
20	Fargo-Moorhead Metro	Water	Midwest	50	$3,350	2.0 – 4.0
21	Sabine Neches Waterway	Ports-IW	South	50	$2,350	2.0 – 4.0
22	Watershed Rehabilitation Program	Water	National	100	$2,200	2.0 – 4.0
23	Sutter Basin	Water	West	50	$1,250	2.0 – 4.0
24	Jacksonville Harbor Dredging	Ports-IW	South	50	$1,200	2.0 – 4.0
25	Soo Locks Modernization	Ports-IW	Midwest	50	$1,150	2.0 – 4.0
26	Long Bridge	Railway	South	20	$1,000	2.0 – 4.0
27	Heartland Expressway	Highway	Midwest	40	$800	2.0 – 4.0
28	Corpus Christi Ship Channel Implementation	Ports-IW	South	50	$650	2.0 – 4.0
29	Truckee River	Water	West	50	$610	2.0 – 4.0

(1) To recognize the natural uncertainty in any estimate of economic benefits and costs, a range of net benefits was generated. The net economic benefits were estimated as the midpoint of the range of (1) the product of the discounted project costs and the upper bound of the benefit-cost ratio range less the value of discounted costs and (2) the product of the discounted project costs and the lower bound of the benefit-cost ratio range less the value of discounted costs, except where there is no upper bound (i.e. > 10), in which case only the lower bound figure is reported.

Notes:

- Net economic benefits are total benefits less total capital costs on a net present value basis. All benefits expressed in millions of 2015 dollars discounted at a three percent rate.
- All selected projects have a capital cost of $300 million or more.
- IW is the abbreviation for Inland Waterway.
- One of the largest differences across project assessments was the length of the analysis period—the time over which benefits were accrued to the project. As this is an important difference across assessments and one that the project team could not adjust, we included the length of the assessment period in the table for the reader's use in reviewing the list.

While railways and highways make up the largest share of potential benefits, there are projects across all modes/ project types that would benefit the U.S. economy if they could be advanced.

Exhibit 3 on the previous page presents the list of 40 projects, noting each project's type, region, net economic benefits, and ratio of net economic benefits to capital cost (benefit-cost ratio). Reflecting underlying uncertainties, a project's net economic benefits represents the midpoint of the estimated range. The list is divided into two groups: 1) those where planning activities are underway and 2) those where planning activities are underway and some funds have been obligated to permit limited implementation but delivery of the complete project lags.

See the annex for in-depth profiles of each project.

Multiple transportation modes and types of water projects are represented on the list; challenges to project delivery are not restricted to particular types of projects. Among those with the largest benefit-cost ratio are projects that relieve a bottleneck in the system or otherwise improve the performance of existing assets. Examples of these projects include Texas Freight Shuttle, National Traffic Signal Coordination, New Orleans Rail Gateway, NextGen, and Chicago CREATE.

Several highway capacity or improvement projects (different from bringing the system into a state of good repair) generate large economic benefits because of the size of the population served and their role connecting to marine, rail and air facilities. The list also contains transit projects. Though transit typically supports local mobility needs, these should be understood to deliver national economic benefits, because the projects included on the list unlock additional capacity in the heart of large established urban transit networks and thereby support the continued labor market growth of these large urban markets.

2.2 Two Large-Scale Programs

The two programs highlighted here encompass multiple projects, and are national in scale: 1) recapitalization of the entire Interstate Highway system and 2) investments to accommodate the shift to connected and automated vehicles.

The first program, the rebuilding of the Interstate Highway system, is one of the most important infrastructure challenges facing the nation. In an environment characterized by periods of uncertain and constrained funds and eroding purchasing power, state DOTs are necessarily scaling their annual capital programs to available resources. While the reconstruction of relatively short interstate segments (which does not include projects included in Exhibit 3) is part of a national program to reconstruct the entire interstate system, individual project segments would not by themselves yield substantial net economic benefits.[5] Recapitalization of the entire interstate highway system has projected net economic benefits of over $1.6 trillion.

The second program, accommodating the shift to connected and automated vehicles, or simply, "autonomous vehicles," is no less challenging and arguably even more important to the future of the U.S. economy. There are many unknowns that make it difficult to develop an estimate in the same way that the 40 projects are assessed. These include the rate of adoption and the evolution of regulation among others. Over approximately the next 30 years, this new technology could generate between $5.0 and $7.5 trillion in net economic benefits. While not a traditional infrastructure project, the public sector has several vital roles in ensuring that adoption not be hindered. Most important of these involves regulation, both at the state and federal level. There also are infrastructure-related investments that would help speed deployment, ranging from infrastructure-based sensors to exchanging data with moving vehicles to improved and consistent pavement markings and road signs.

2.3 Why Are Some Types of Infrastructure Missing?

The list of infrastructure projects was not generated with the goal of finding an equal distribution of projects across all categories of infrastructure. Indeed, the list does not include examples of airports, toll roads, or large water and wastewater treatment facilities. These categories are similar in that the majority of them are managed by independent quasi-public regional and state authorities or by enterprise funds of a local jurisdiction and financed by revenue bonds secured by direct fees paid by facility users and concessionaires.

Federal capital grants for large airports are limited to airside facilities. Federal loans and loan guarantees via the U.S. Department of Transportation's Transportation Infrastructure Finance and Innovation Act (TIFIA) program are frequently important in the financing of new or expanded toll roads, but these are provided late in the process after most project barriers have been overcome. In sum, despite the regional and national importance of many airport and toll road projects, they do not face the same set of funding and financing hurdles that many other infrastructure projects must overcome. Thus, they did not meet one of the key

[5] The search for projects identified many interstate projects on state DOT capital improvement plans. These projects typically represent incremental investments (mile marker 25 to 75 for example) to improve a larger corridor that by themselves do not yield benefits on a national scale but collectively represent a much larger effort that does support national economic outcomes.

criteria for selecting projects to be included in our list of projects.

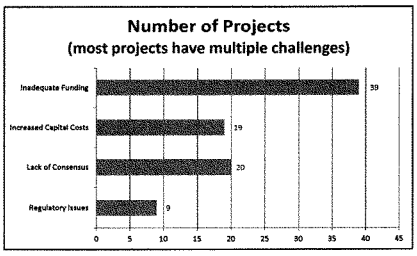
One important class of projects – municipal water supply and wastewater management – do not meet our criteria to appear on the list because they are driven by regulations and compliance timetables, not explicit benefit-cost economics. That does not mean that there is no benefit to accelerating this class of projects. Clearly, failures to meet regulations for environmental, public health, or service level standards exact costs on families and businesses that rely on clean and safe water. But by and large, these investments follow agreed timeframes for compliance with environmental and public health regulations and in the case of service level standards, norms for quantity and reliability consistent with rates and revenues agreed through either formal regulatory or governing board policy decisions.

3.0 Primary Challenges to Completion

3.1 What Are the Challenges to Completing Each Project?

A review of the 40 transportation and water infrastructure projects described in Exhibit 3 suggests that they face four major challenges to completion: (a) limited public resources, (b) significantly increased capital costs, (c) extended program and project review and permitting processes, and (d) lack of consensus among multiple public and private sector entities. A lack of public funding is by far the most common factor hindering the completion of transportation and water infrastructure projects.

Exhibit 4: Primary Challenges Across the 40 Projects



Limited Public Sector Resources. With a few exceptions, constrained public budgets, tight fiscal policies, and a general reluctance to raise taxes or user fees limit available funding—the primary challenge to advancing the projects identified in this study. Conditions are perhaps most striking at the federal level, where, for example, the 18.3 cents per gallon federal gas tax that capitalizes the federal Highway Trust Fund (HTF) has not been raised since 1993 and annual HTF revenues have shown limited growth as a result of increased vehicle fuel efficiency and reduced growth in vehicle miles traveled. Some observers believe that greater funding for the Army Corps of Engineers' direct investment program in water resources projects are needed to maintain current services at the Army Corps' existing flood control, navigation, hydropower, and multi-purpose projects.[6]

Funding at the local level – where the investment rubber meets the road – has been more responsive to demand, and fewer projects seem to be challenged by shortfalls in local funding roadblocks, especially for the most worthwhile of projects. Approximately half of the states (23) have increased their transportation user fees (e.g., gas tax, vehicle registration fee) since 2012 and other states are considering increases but a larger proportion of their expenditures have been devoted to operations and maintenance rather than capital investment. Also, many local jurisdictions, for example, have increased both revenues and expenditures for urban transit.

In response to growing regulations, replacement of old and failing infrastructure, and expansion of systems to meet growth, urban water and wastewater utilities have had to raise water and sewer rates by three percent above inflation, on average, every year for more than the last decade.[7] Affordability concerns related to constructing expensive, but mandated, solutions to sewer overflows during rain events have resulted in 20- and 30-year construction programs to solve these multi-billion dollar challenges. In some cases – The Fargo-Moorhead Flood Diversion Project for example – local sponsors of Corps of Engineers' projects are stepping forward with innovative public-private partnership (PPP) proposals and advance funding from local sources to accelerate construction of critical water projects. Airports and maritime ports are organized primarily as enterprise funds under local and state governments; most are funded by the fees paid by users of their respective facilities or services. As a result, fees more closely reflect services that users demand, so raising fees to finance the construction of needed capital facilities tends to be somewhat less complicated.

[6] Edward E. Belk, Jr P.E., "ASCE COPRI: Corps Infrastructure Strategy Overview and P3/P4 Review," presented to the ASCE COPRI P3 Subcommittee Symposium on Alternative Project Finance, New Orleans District of the US Army Corps of Engineers, September 10, 2015.

[7] National Association of Clean Water Agencies, 2014 Cost of Clean Water Index, Washington DC, 2015.

Significantly Increased Capital Costs. Capital costs of transportation and water infrastructure have increased much faster than the general rate of inflation over the past 20 years — at the same time that the financial resources available for transportation and water capital investment have declined (in real dollar terms). When projects fail to make progress, financing costs may increase faster than the ability and sometimes willingness of users to pay, further complicating the delivery of good projects until users are willing to accept higher taxes or fees. Some projects are eventually downsized or eliminated entirely. Increased capital costs are also a product of enhanced design standards and regulatory requirements related to performance, safety, environmental protection, reliability, and resiliency. Recent decreases in energy prices may ameliorate the rate of capital cost inflation.

Extended Review & Permitting Processes. Successful completion of the review and permitting processes required by the National Environmental Policy Act of 1969 (NEPA), which requires federal agencies to assess the environmental effects of their proposed actions, is an important part of project development. NEPA helps promote efforts to prevent or eliminate damage to the environment, but has also extended the schedule and generally increased the cost of implementing major infrastructure projects. This is a long-standing challenge that has spanned the last 20 to 30 years. Studies conducted for the Federal Highway Administration concluded that the average time to complete a NEPA study increased from 2.2 years in the 1970s, to 4.4 years in the 1980s, to 5.1 years in the1995 to 2001 period, to 6.6 years in 2011.[8] In recent legislation and executive actions, policymakers have recognized the growing length of time needed for environmental review and permitting, and its impact on project delivery times and development costs, and have implemented process reforms.[9] Effectively implementing these reforms going forward will be crucial to addressing this challenge.

Lack of Consensus Among Multiple Public and Private Sector Entities. Projects that cross jurisdictions often take longer than those within a single jurisdiction. We found evidence of this for several large multi-jurisdictional projects where proponents disagreed on project components, alignments and rights of way, allocation of project costs and benefits, or voting structure in governing and/or management boards. Examples include bridges that connect two states (the I-5 Columbia River Crossing and the Brent Spence Bridge), rail projects across state boundaries (the NY-NJ Gateway Project included as part of the NEC Corridor Reliability Improvements), or programs of national scale where state and local coordination is complicated (National Traffic Signal Coordination Program). Large national programs often experience this same phenomenon in the program development stage. Key differences of views with regard to the program design are often settled through compromises during the legislative debate. The same is true for some regional programs where federal intervention can avoid state confrontations, such as federal and interstate compacts that govern water resource allocation and management rules across multiple states.

3.2 How Could Challenges to Completion Be Addressed?

Limitations on public sector resources are identified in this study as the single most common factor contributing to project completion uncertainty — particularly for highway, railway, inland waterway, and water resource projects, which rely primarily on public funding. There has been significant discussion over the past decade about increasing federal taxes or fees to fund critical infrastructure programs. In the absence of such action, however, states and local jurisdictions have stepped up to fund an increasing share of the infrastructure they consider important. This process contributes to a loss of network benefits on a broader, more coordinated scale.

Since most challenges to project completion are related to funding, and there is clear evidence that a lack of funding results in loss of economic output, it is fair to examine ways in which funding might be enhanced to create positive returns to the U.S. economy. While full consideration of funding alternatives and public finance options are beyond the scope of this study, it may be useful to examine broadly several principles around which funding solutions might be based.

Market-Based User Fees. Where infrastructure services can be allocated unambiguously to users (beneficiaries) according to their use and users can access infrastructure services only by paying for them (e.g. no "free riders"), the infrastructure finance literature maintains that the most efficient form of project finance is user payments that ideally reflect full (marginal) costs of providing (building, operating, and maintaining) service flows.[10] Resurgence in the development of tolled highways, bridges, and tunnels over the last 30 years, particularly in rapidly growing states such as Florida and Texas illustrates this approach. The introduction of reliable and enforceable electronic toll collection coupled with open road tolling (i.e., toll collection with no toll booths to impede traffic flow) has further

[8] Transportation For America, "State Transportation Funding: States Successfully Raising New Transportation Revenue," 2015. Accessed January 2016. http://t4america.org/maps-tools/state-transportation-funding/

[9] National Association of Clean Water Agencies, 2014 Cost of Clean Water Index, Washington DC, 2015.

[10] Congressional Budget Office (CBO), "Approaches to Making Federal Highway Spending More Productive," Washington, D.C., 2016.

accelerated growth in toll facilities. These new technologies provide significant savings in toll collection costs and reduced congestion through congestion-based or time-of-day pricing.

Federal Intervention for Projects of National Significance. Strict marginal cost-based user fees may prove inadequate for some new investments in infrastructure technology or economic development that will generate benefits over long periods of time. In these cases, there may be few immediate or easily identifiable beneficiaries. Such projects represent long-term commitments to the future with benefits that accrue to the nation as a whole. When this is the case, it may be more efficient from a national economic perspective to finance such projects out of general funds or a user-fee base that includes both present and future beneficiaries. Road improvements to enable autonomous vehicles may be the prime example of such a national scale program.

Government Funding to Protect Public Goods and Correct Market Failures. Efficiency is not the only criterion on which to base infrastructure financing decisions. In some cases, the outcome of infrastructure investment is so important for the welfare of the nation as a whole that fairness considerations require that all people receive at least some minimal benefit, regardless of their ability to pay. This is the rationale underlying many environmental programs that the federal and state governments help fund, such as federal grants to help capitalize State Revolving Funds that finance water and wastewater infrastructure. Environmental restoration projects, especially those that generate benefits broadly available to individuals and businesses in multiple geographies, also are examples for which additional federal and/or state general funding may be warranted.

Efficient, Alternative Project Delivery. For some types of projects, alternative project delivery methods can accelerate project delivery times and deliver more infrastructure services or less risk for every public dollar invested. In effect, more efficient project delivery substitutes in part for more investment. Innovative project delivery methods include Design-Build (DB), Design-Build-Finance (DBF), Design-Build-Operate-Maintain (DBOM), and Design-Build-Finance-Operate-Maintain (DBFOM). Innovative procurement methods generally allow competitors to propose "alternative technical concepts" (ATCs) which are reviewed and approved in advance by the customer and remain proprietary to the competitor proposing the ATC. The use of ATCs encourages competitors to introduce innovative solutions that meet client requirements but at a reduced cost.

Leveraging Limited Government Financial Resources. Leveraging limited federal dollars can stimulate state and local investment as well as private investment (or operating efficiencies) through PPPs. Virtually all surface transportation PPP projects rely in part on a TIFIA loan to finance about a third of their project costs. The 2015 Fixing America's Surface Transportation (FAST) Act provides sufficient funding for the USDOT to make about $36 billion in TIFIA loans — or about $7.5 billion annually. The Railroad Rehabilitation and Infrastructure Financing (RRIF) program administered by the Federal Railroad Administration has $35 billion to finance the development of railroad infrastructure. The 2014 Water Resources Reform and Development Act (WRRDA) authorized two other infrastructure funds designed around a leveraging concept — one to support EPA's water and wastewater grant program and a second for the Army Corps of Engineers. The President's 2017 budget calls for funding EPA's water infrastructure fund (WIFIA) but little progress has been made regarding the program authorized for the Corps of Engineers.

4.0 Infrastructure's Contribution to the Economy

Infrastructure of all types, but especially transportation and water, is the one asset that is used every day by every business and household. Most analysis of the economic impact of infrastructure focuses on direct benefits to travelers and consumers and indirect benefits from people and industries that depend on these changes.

More important, however, are changes as individuals and businesses divert from business as usual to adjust their practices in response to improved infrastructure. As the transportation network is improved, either through new assets or improvements to existing ones, travelers reap a variety of benefits. Improvements to safety translate into lives saved and injuries avoided. Improvements to bottlenecks translate into time saved. New connections allow existing trips to be made by a shorter route, translating into reduced travel costs. And collectively, less vehicle miles traveled and less idling to accomplish the nation's travel needs translates into cleaner air. When flooding is avoided or cleaner water delivered, resources are not spent recovering from damage and health is not compromised. When these things happen, the economy typically becomes more efficient, which supports long-term economic competitiveness. These types of changes are not relevant for projects with a local impact (say, adding a lane to an existing highway) but there is a long history of private industry change in response to investments with a national or regional scale impact. This response can occur in several ways:

- **Productivity Effects.** An improved transportation system or an expanded water resource (either larger in size or higher in the quality of service that it provides) allows industry to either produce the same amount of goods and services for less or more goods and services with no added cost.

Ex: Investments to reduce travel congestion allow a national retailer's distribution network to make the same volume of deliveries in less time, saving driver and fleet costs.

- **Factor Demand Effects.** An improved transport system also allows firms and industries to change how much they use of other economic inputs — labor, intermediate goods, and private capital. These changes may result in greater efficiencies as the investment allows firms to substitute for one or more of their traditional economic inputs.

  Ex: Investments to improve connectivity and travel times allow a manufacturer to reduce inventories of production inputs and to consolidate its supply network, reducing production costs overall.

- **Output Expansion Effects.** The cost reductions or increases in output caused by the first two changes will, in turn, stimulate increased overall demand.

  Ex: As production or distribution becomes less costly, firms may pass along some portion of the savings to consumers, who may purchase more as the price falls.

Our nation's history includes a series of examples of infrastructure investments that have generated national economic gains on a large scale. Examples range from the earliest decades of the republic when the Army Corps of Engineers was tasked with opening up the Ohio and Mississippi Rivers to the transcontinental railroads, funded in large part by federal and state land grants (these totaled eight to ten percent of the Continental United States). More recently, the Interstate Highway System was a prime mover for the nation's economy for at least two decades, accounting for fully one fourth of the nation's overall gains in productivity when it was first built.

Transportation

Today, transportation is in the midst of a quiet but profound revolution. Urban travelers now have choices that go beyond the classic dichotomy of private cars versus bus and rail transit. Many of these changes take advantage of new technology, with some of the most dramatic changes yet to come, including self-driving vehicles. New transportation services are now available, including many stimulated by private entrepreneurs. These changes also respond to market forces, including a world where mobile communications provide near real-time access to information for businesses and individuals. The specific impact of these changes on demand for traditional modes, such as private cars, transit, walking, biking, and taxis, as well as telecommuting is unknown but will have important implications for how we plan, fund, and operate urban and regional transportation.

Water and Wastewater

Similarly, today's wastewater management utilities, having largely made key investments to comply with government clean water mandates are transforming themselves into "Utilities of the Future" where instead of managing waste, they take actions to manage valuable resources such as water, nutrients, biosolids, heat, and latent energy. When clean water utilities reuse wastewater and offset demand for fresh water resources, generate all the energy they need to operate from their own digested methane, or substitute natural green infrastructure for concrete and steel structures, they not only reduce costs of service to residential and business customers, they produce fewer environmental residuals and cleaner waterways as well as more urban green spaces for all to enjoy. These benefits, in turn, create communities in which more people and businesses choose to locate, helping to stimulate economic productivity often associated with urban areas.

Environmental Restoration Projects

Environmental restoration projects bring the nation's natural capital into a state of good repair. Such projects can benefit communities in a variety of ways such as by buffering shore communities from hurricanes and shoreline erosion, by mitigating flooding and damage to homes and roads, and by providing wildlife habitat and recreational areas for residents.

5.0 How Was the List Developed?

The development of any list requires judgment about which projects to include and which to exclude. This process involved both developing criteria to identify eligible candidates but also pragmatic compromises — information needed to estimate net economic benefits was simply unavailable for some candidate projects. Identifying candidate projects required a set of operational definitions. Chiefly, these were:

- *How do we define infrastructure?*
- *How do we define a project?*
- *How do we define a challenge to completion?*

5.1 How Do We Define Infrastructure?

For the purposes of this study, infrastructure is taken to mean traditional public works:

- Highways
- Railways
- Airports
- Maritime Ports and Inland Waterways
- Water Resources
- Water Supply/Wastewater Management

All share common characteristics in that they are delivered largely through long-standing intergovernmental programs that require legislative, executive, and sometimes judicial action at the federal, state, and local levels. They generally require federal or state authorization at the program or project scale, state or local program administration and management, a state or local government "sponsor" or advocate, interaction with public and sometimes private capital markets, user willingness to pay taxes or fees in exchange for services, and environmental and/or economic regulatory approvals — generally at an early stage of project delivery.

5.2 How Do We Define a Project?

Like all long-lived capital investments, infrastructure projects in these categories typically share a common value chain from planning to preliminary engineering, environmental review and permitting, final engineering, funding and finance, construction, operations, and reconstruction or decommissioning. For purposes of this study, a project had to be sufficiently advanced in its delivery process that a basis for estimating its capital and operating costs had been established as had a basis for projecting its economic benefits. Typically, this meant that a project had to have progressed at least through planning and about half of preliminary engineering (e.g., about 15 percent of the design work needed to prepare a project for construction) and for some types of infrastructure, through a portion of the environmental review stage. A project also had to demonstrate that it could be delivered in whole or in part within a 10-year period. This was interpreted as requiring that the project has applicable legislative authorization; that funding requirements were roughly understood (even if funding sources had not as yet been identified), and that a local sponsor or advocate had been identified. In sum, projects on a wish list did not qualify.

5.3 How Do We Define a Challenge to Completion?

Some projects, particularly large complex projects or those using new and untested technology, may take a decade or more to begin to deliver benefits to the economy. A project was considered to face a challenge to completion if it was halted at some stage in its normal delivery process, as identified by federal, state, local, or private proponents of the project, and supported by reasonable evidence.
Even if a project is moving forward in some capacity, these barriers can exist. Complex projects can face multiple challenges, including insufficient funding and/or financing, regulatory/permitting/legal issues, or a lack of consensus among project stakeholders.

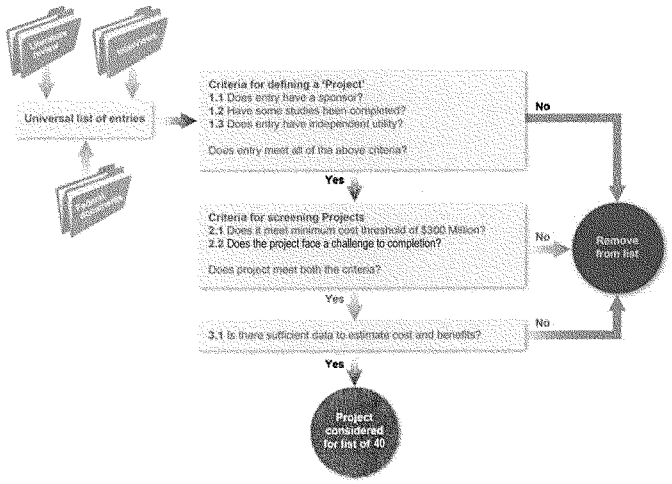
Municipal water supply and wastewater management projects are not included on our list of 40 economically important projects. Most such projects are driven by regulatory or service level requirements and not by economics. Many are costly – in the hundreds of millions to billions in total project costs – and most deliver significant public health, environmental, social, and economic benefits well in excess of these costs. These large and economically important projects can take 20-30 years to complete, which is allowable without penalty under applicable environmental and public health regulations. So, while project completion can exceed our standard for challenged projects and might otherwise be considered here, long completion times are planned and expected, so these projects do not meet our criteria for challenged projects.

5.4 Outline of the Approach

An overview of the study approach is provided in Exhibit 5. The study team first identified a "long-list" of significant and challenged infrastructure projects in the planning or planning/implementation stage of development. These were then screened to select the 40 or so projects (the "short-list") that would deliver strong positive national or regional net economic benefits if they could be accelerated. The estimated costs and benefits of projects on the short-list were then reviewed and for some projects, created from project outputs, and then normalized around a common benefit-cost calculus. The primary challenges facing the project were then confirmed. Finally, the study team created two-page project profiles for each of the 40 identified infrastructure projects (which are presented as an Annex to this document).

Key statistics characterizing projects reviewed for the long- and the short-list were catalogued for future reference. Projects are grouped by infrastructure category for ease of access.

Exhibit 5: Development Process for the Short List of Projects



5.5 Creating the Initial List

An initial list of potential projects was developed based on news articles, published documents, and interviews with federal and state agency representatives, regional planning associations, and trade and professional organizations.

The criteria for inclusion on the initial universal list were broad, with most candidate entries being included. Entries included everything from well-defined and advanced projects, to comprehensive plans, to well-defined visions. The study team selected a broad range of entries for consideration from the universal list of entries.

Initial entries were categorized by infrastructure type:

- Airports
- Highways
- Ports/ Inland Waterways – entries related to seaports and inland waterway ports and to inland waterways
- Railways – entries related to rail transportation for both passengers and freight and both intercity and urban
- Water – entries related to water resources, environmental restoration, water supply, and wastewater management

Initial entries were also grouped into one of four national regions: Midwest, Northeast, South, and West. Several projects covered more than one region or were national in scope.

Initial entries were reviewed to identify which should be considered a project for the purposes of this study using the following criteria:

- Criterion 1.1 – Does the project have a sponsor? The entry needed to have support from a viable sponsor to have a reasonable probability of being implemented.
- Criterion 1.2 – Have some studies been completed? The entry must have had some studies (e.g. technical, environmental, or financial) completed to show it is reasonably well defined.
- Criterion 1.3 – Does the project have independent utility? The entry must be able to stand alone and not rely on other components or predecessor (but as yet unbuilt) projects to achieve individual benefits.

Entries meeting all of the above criteria were considered a project and retained for further evaluation. Those that did not were removed from the list. About 200 candidate projects were identified.

5.6 Creating the Long-List

Projects were then screened to identify those qualifying for inclusion on the long-list of projects – projects that were capable of providing strong positive net economic benefits on a national or regional scale – using the following criteria:

- Criterion 2.1 – Does the project have an implementation cost (undiscounted and not adjusted for inflation) of at least $300 million? Projects costing less than this amount would be unlikely to deliver significant national or regional net economic benefits.
- Criterion 2.2 – Does the project face challenges to completion? Projects facing such challenges are those that are not being implemented according to expected schedules because of insufficient funding, lack consensus among the major stakeholders, or regulatory or permitting challenges, among others.

Projects that met both these criteria were retained on the long list of projects for further analysis. Those which did not meet these criteria or for which sufficient data were not available to permit evaluation did not advance for further study. The selection of the $300 million threshold was a judgment and reflects a tradeoff between expanding the project search to the maximum possible scope and considering every project regardless of its size and the pragmatic need to have a workable number of projects and the expectation that projects below that threshold were unlikely to have major regional or national impacts. The $300 million value was chosen as the study team felt it was still on the low side for a project likely to have a regional or national impact, thus ensuring that the maximum number of likely projects were considered in subsequent evaluation. About 200 projects were identified for the long list, of which about 75 were retained for the short list.

5.7 Creating the Short-List and Final List

Some of the projects were elements of larger programs and were therefore grouped and evaluated at the program scale. This was done for programs whose projects would not have gone forward on a stand-alone basis because the real value to the nation would be delivered only if the entire program or a large portion thereof was completed. These are clearly identified on all study materials and in this Final Study. Examples include the Northeast Corridor Intercity Rail Rehabilitation Program between Washington DC, New York City, and Boston and the California High Speed Intercity Rail Program.

The study team selected those projects for the final list which had significant net national or regional economic benefits based either on estimates of costs and benefits that had already been calculated using acceptable methods or on interim project outputs that could be converted to estimates of costs and benefits. Projects in the final list were chosen based on their net economic benefits, making sure that they were broadly representative of various regions of the country, as well as the major transportation modes and types of water projects.

Because the projects on the list are in different phases of implementation, the full list was divided into two sections to highlight this distinction (see Exhibit 3). Projects where the implementation is underway but not advancing at the pace initially anticipated are listed at the top of the table. Those in the planning stage where implementation has not yet begun are listed in the second section of the table.

5.8 Establishing a Common Benefit-Cost Calculus

Projects were examined to estimate their net economic benefit to the national economy and their benefit cost ratio. This process relied on existing benefit-cost results, or where an existing assessment was not available, project data necessary to permit the project team to perform an assessment. The project team evaluated projects as presented by project sponsors and did not develop independent estimates of costs, ridership, traffic volumes, service plans, or other inputs to support the net economic benefit assessment. The methodology and guidance for developing project information and assessments thus varies across projects, following the available guidance and practice for that mode. Similarly, the level of detail with which project information is reported varies by project — for example some studies report the summary results, others provide year-by-year results. Collectively, these factors prevented the project team from fully reconciling each of the assessments. Because of these uncertainties, net project benefits were reported in a range. If a project's BCR rose above a 10.0 threshold, we reported the value as simply "over 10.0."

Projects with smaller benefit-cost ratios were reported in one of three ranges: 2.0 – 4.0, 4.0 – 7.0, and 7.0 – 10.0. The ranges were chosen by looking at the estimate ratios and selecting the breakpoints based on the groupings in the results.

In general, the process was to:

- Identify project costs and adjust to common year used for this study
- Adjust project benefits (or estimate) to common year used for this study
- Discount costs and benefits to yield net present value if not already discounted, adjusting to a common year and rate. Discount rates applied to federal infrastructure projects originate in statute and are updated periodically by the federal Office of Management and Budget (OMB) in conjunction with the federal infrastructure agencies. The Water Resources Planning Act of 1965 and the Water Resources Development Act of 1974, for example,

require an annual determination of a discount rate for federal water projects, including those of the US Bureau of Reclamation and the US Army Corps of Engineers that are covered in this project. The rate for federal fiscal year 2017 (October 1, 2016 to September 30, 2017) was reset to 2.875 percent on October 13, 2016, based on guidance from the US Treasury on the average yield of marketable US government securities with maturities of 15 years or more. The 1992 Circular A-94 (Appendix C), pursuant to the Budget and Accounting Act of 1921, the federal Office of Management and Budget (OMB) establishes real discount rates to be used to evaluate benefits and costs of all federal capital programs or policies, including transportation projects like those analyzed here, but specifically excluding federal water projects. The rate to be applied is related to the type of the project and its expected benefits and costs. If the project is anticipated to have benefits to the general public (societal benefits such as travel time savings or crash reductions), the guidance currently suggests a discount rate of 7 percent, which represents the real discount rate on private investment. If the analysis includes benefits and costs exclusively related to the public agency, for example, an analysis of an investment that would bring about a cost savings to the agency, the guidance suggests using the real discount rate for public-sector investments, which is often lower due to the lower risk associated with government borrowing. Real discount rates for 2016 range from 1 percent (10-year investment) to 1.5 percent (30-year investment). For consistency, we used both a 3 percent and 7 percent discount rate in our analysis, but for simplicity, presented results only using a 3 percent rate.

Finally, one of the largest differences across project assessments was the length of the analysis period — the time over which benefits were accrued to the project. As this is an important difference across assessments and one that the project team could not adjust, we included the length of the assessment period in the table for the reader's use in reviewing the list.

Another challenge related to the reporting of operations and maintenance costs; some projects had advanced to the point of having estimates, but many had not. Presentation of an "apples to apples" comparison required estimating net economic benefits relative to capital costs only.

5.9 Identifying the Primary Challenges Faced by Projects

Information collected describing project delivery was verified through interviews with relevant parties. In nearly all cases, funding was an impediment to project delivery.

Lack of consensus among stakeholders was an impediment for half of the projects. As large projects most likely to deliver national benefits are often multimodal and multi-jurisdictional, this highlights the challenge of advancing these projects. Increased capital costs as the project develops similarly play a role in half of the projects, helping to explain many of the funding challenges. As complex projects advance, the engineering requirements to solve the problem are increasingly better understood and defined — often leading to better cost estimates. Moreover, as projects advance through the public environmental process, project features may be added and the least cost alternative may not be selected. Finally, a variety of regulatory issues played a role in a quarter of the projects.

5.10 Projects that Were Not Considered for the Short-List

In addition to the projects discussed above, certain types of projects that might provide sufficient national or regional net economic benefits to be advanced to the short-list were not considered for various reasons including the following:

- Publicly available data were insufficient to project costs and/or benefits.
- Projects critical to the U.S. economy which have high likelihoods of being built in the future, but that are insufficiently developed at this time.
- Projects of national significance, but that are simply slow to complete and are therefore not facing challenges to completion under our definition.
- Projects that do face challenges, but the net economic benefits of which are too small to be in the list of projects of major economic significance.
- Projects without a clear sponsor.

6.0 What Did We Learn from Constructing the List?

First, there are a large number of attractive transportation and water infrastructure projects nationwide. These cover all modes and all regions of the country. Alone, the 40 projects identified in this study are estimated to generate net economic benefits of $800 billion. Our analytic work showed that there are many similar projects behind this list. As a group, the 40 projects highlighted in this study return between $3.50 and $7.00 for every dollar of capital expenditure.

The greatest concentration of projects is in the South and the West. As the fastest-growing regions of the U.S., these regions are developing numerous projects to accommodate their expanding economies, rising freight flows associated with the numerous ports located here (some of the nation's busiest) and vigorous cross-border trade with Mexico. Nine of the eleven megaregions projected to develop in the U.S. between now and 2040 are in these regions. Railways and highways dominate the distribution of projects by mode, but the distinction can be misleading in some cases as these projects are supporting other modes such as ports and airports. For example, the Hampton Roads Crossing and the I-5 Columbia River Crossing are both important corridors for the maritime ports in their regions. Some I-5 Columbia River crossing project alternatives included transit too.

Second, no surprise, but lack of adequate funds is the major hurdle to completing these projects. While responsibility for this shortfall can be shared among many government agencies, it is hard not to recognize a long running reluctance by legislative decision makers at all levels to increase funding for infrastructure.

Third, there is limited interest in regional or even national projects. Part of this problem results from a general reduction in federal funds for major transportation and water infrastructure programs. This has shifted the responsibility for infrastructure funding to state and local governments. In one respect, this may produce a desirable outcome – these governments are closer to the delivery of infrastructure services and should make more efficient investment decisions and manage limited financial resources more carefully. However, as agencies are developing projects in line with their own more limited resources, there are fewer large multi-state initiatives that address the larger regional issues created by rising freight volumes and evolving logistics patterns for example. U.S. DOT's work to develop a national rail and national freight plan may eventually counter this trend.

Today there is limited incentive for state and local agencies to invest in projects with broad benefits. This is not just an issue related to lack of funds, but partly a lack of financial and planning incentives. For example, the Interstate Highway System was built rapidly once the federal match changed from 50-50 to 90-10. Today such incentives are limited — one example is a slightly higher federal match for freight projects that reflect a statewide freight plan.

A related problem is that most of the debate over infrastructure tends to focus on "needs," with projects of all sizes and types lumped together. This makes it difficult to focus on projects likely to have the largest national economic benefits. This study aims to help re-focus the debate on projects with significant national economic benefits relative to their costs.

Finally, the analytic work to identify the 40 projects of major economic significance relied on existing studies where available. These used a variety of assumptions and methods. Any national view regarding the value of infrastructure would benefit from a more uniform and consistent approach to reporting. The Corps of Engineers' water resource investment program, U.S. DOT's TIGER program (which both use a BCR) and the Federal Transit Administration's (FTA) New Starts Program (which uses consistent metrics across projects but not a BCR) stand out in this regard, but many other parts of infrastructure development assess projects in a less formal manner. The nation's approach to developing candidate infrastructure investments has evolved gradually over time and largely in modal silos. A consistent set of project planning and development guidelines could improve this process, although care would still be needed in making inter-modal comparisons. Similarly, care would still be needed to ensure that state and local infrastructure financing programs that are working well can continue to work well. A recent Congressional Budget Office (CBO) study identified the practice of allocating highway investment on the basis of benefits and costs, and user fees (discussed in Section 3.2) as two potential approaches for making highway investment more productive.[11]

[11] Ibid.

Project Profiles

Planning/Implementation Underway
1. I-10 Program....A-16
2. National Traffic Signal Coordination....A-18
3. California High Speed Rail....A-20
4. Next Generation Air Traffic Control System....A-22
5. Positive Train Control....A-24
6. Hampton Roads Crossing....A-26
7. Chicago CREATE....A-28
8. Rural Water Supply Program....A-30
9. Northeast Corridor Improvements....A-32
10. Southeast High Speed Rail....A-34
11. I-70 Missouri....A-36

Planning Underway
1. I-70 East....A-38
2. Texas Freight Shuttle System....A-40
3. New Orleans Rail Gateway....A-42
4. Mississippi River Crossing....A-44
5. Medium Diversion at White Ditch....A-46
6. Medium Diversion at Myrtle Grove....A-48
7. Brent Spence Bridge....A-50
8. Savannah Harbor Expansion....A-52
9. Houston-Galveston Grade Crossing Improvements....A-54
10. ARTM/MOHNL....A-56
11. Boston Harbor Dredging....A-58
12. I-35 Trade Corridor....A-60
13. MTC Managed Lanes....A-62
14. 2nd Avenue Subway – Phase 2....A-64
15. I-11 Corridor....A-66
16. Morganza to the Gulf....A-68
17. I-69 Extension....A-70
18. Puget Sound Gateway – Phase 2....A-72
19. I-5 Columbia River Crossing....A-74
20. Fargo-Moorhead Metro Flood Control....A-76
21. Sabine Neches Waterway....A-78
22. Watershed Rehabilitation Program....A-80
23. Sutter Basin....A-82
24. Jacksonville Harbor Dredging....A-84
25. Soo Locks Modernization....A-86
26. Long Bridge....A-88
27. Heartland Expressway....A-90
28. Corpus Christi Ship Channel....A-92
29. Truckee River....A-94

Two Large-Scale Programs
1. Accommodating Autonomous Vehicles....A-96
2. Recapitalization of the National IHS....A-98

I-10 Program

U.S. REGION: **South**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: > **$236.0 B**
BENEFIT-COST RATIO: > **10.0**

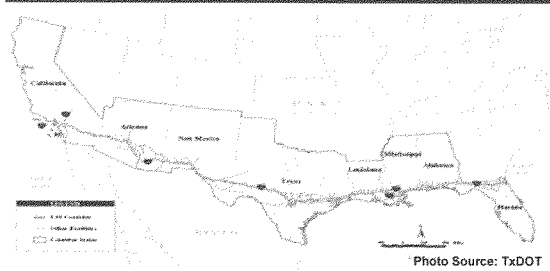


Photo Source: TxDOT

Photo Source: ADOT

PROJECT SPONSORS:

- Florida, Alabama, Mississippi, Louisiana, Texas, New Mexico, Arizona, and California state Departments of Transportation

PROGAM:

- Related to Recapitalization of the National Interstate Highway System

PROJECT DESCRIPTION

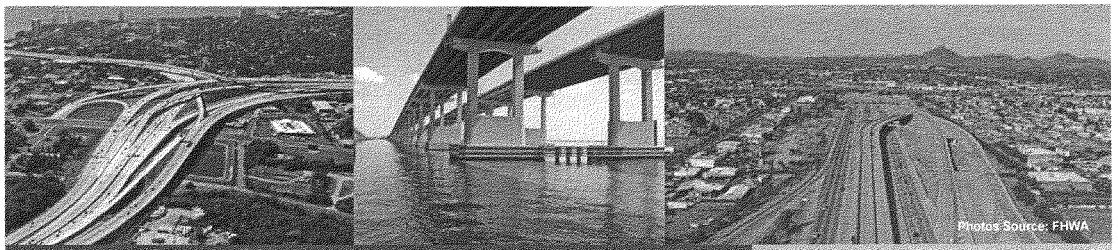
- Add capacity as needed along the I-10 corridor between Florida and California. This is particularly important for interstate movements. I-10 connects several of the nation's fastest growing states as well as major international airports and ports.

CONSIDERATIONS

- The I-10 Corridor is more than 2,600 miles long. As of 2002, the Corridor had approximately 400 miles operating at an unacceptable level of service (LOS). By 2025, the deficient mileage is forecast to reach approximately 1,500 miles.
- The average number of lanes needed by 2025 is expected to increase from 6 to 10.1 lanes along urban sections, and from 4.1 lanes to 5.2 lanes along rural sections.
- Increasing national freight flows in the corridor will result in increasing congestion and delays.

Sources: (1) Wilbur Smith

I-10 Program



Photos Source: FHWA

PROJECT BENEFITS

- With capacity improvements, travel time reliability along the Corridor is expected to increase significantly over the forecast period, translating into significant reductions in delay for freight and passengers.
- Inter-regional trade, among the eight states and between the I-10 Corridor region and the rest of the United States, generates significant economic benefits in terms of jobs, earnings, and economic output.
- Provides for an improved high-speed, safe, low cost-per-mile interstate system.

PRIMARY CHALLENGES

- Difficult to coordinate a multi-state investment strategy.
- States need funding for additional capacity to keep interstates operating at an acceptable LOS.

STATES OF FLORIDA, ALABAMA, MISSISSIPPI, LOUISIANA, TEXAS, NEW MEXICO, ARIZONA, AND CALIFORNIA MARKETS SERVED:

Population (Census, 2015 value)		108,320,000
Employment (BLS, 2015 value)		44,494,000
GDP (BEA, 2014 value, $M)	$	5,721,182

ECONOMIC BENEFITS AND COSTS

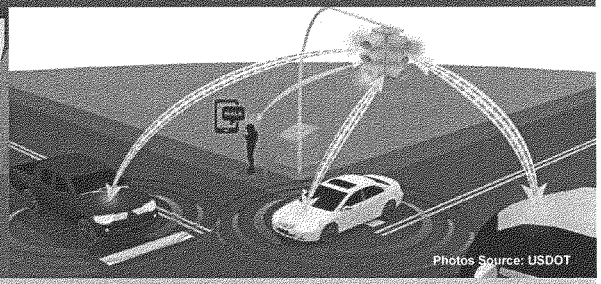
		2015$ (M)
Capital Cost	$	28,629
Discounted Capital Cost	$	26,222
Discounted Benefits	$	>262,220
Net Economic Benefits	$	>235,998
Benefit-Cost Ratio		>10.0

Note: All values in 2015 dollars. Values were discounted using a 3% discount rate. (BMI analysis has more details)

National Traffic Signal Coordination

U.S. REGION: **National**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **> $3.9 B**
BENEFIT-COST RATIO: **> 10.0**



Photos Source: USDOT

PROJECT SPONSORS:

- Individual state DOTs, cities, and Metropolitan Planning Organizations
- Institute of Transportation Engineers

PROJECT DESCRIPTION

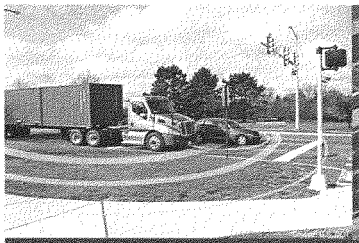
- Program to coordinate traffic signals nationwide provides a broad array of benefits, including reduced traffic congestion, reduced emissions (including CO_2), and reduced energy consumption.

CONSIDERATIONS

- Improving traffic signal operations can have a large impact on transportation system efficiency.
- Delays in highway travel have been increasing, and delays at traffic signals contribute an estimated 5-10% of all traffic delay, or 295 million vehicle hours on major highways alone.
- Some cities have not made the proper investments since they do not want to encourage through traffic.

Sources: ITI, ITE

National Traffic Signal Coordination



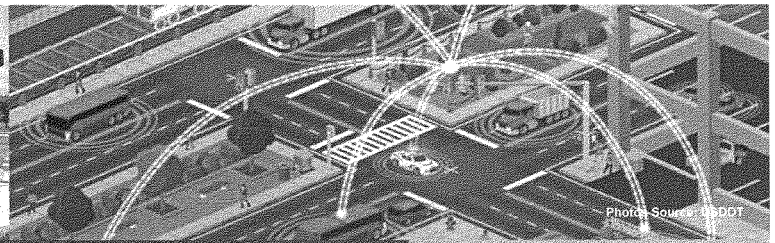


Photo Source: MnDOT

PROJECT BENEFITS

- Delay savings, even when just considering major arterials, are significant.
- Fuel savings resulting from less idling and related environmental benefits including CO2 reductions as a result of smoother traffic flow.
- Improvements for freight and transit operations.
- Costs are low, at approximately $500 to $3,000 per intersection.

PRIMARY CHALLENGES

- Coordination among local cities and towns can be difficult since they may have different objectives and different levels of funding.
- Adaptive signal control systems are more expensive but also more effective.
- While costs are low for individual traffic signals, real gains depend on corridor improvements and many towns and cities are still short of funds.
- Traffic signals need to be maintained properly, creating additional local budget issues.

NATIONAL MARKET SERVED:

Population (Census, 2015 value)	321,419,000
Employment (BLS, 2015 value)	141,958,000
GDP (BEA, 2014 value, $M)	$ 17,232,618

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 455
Discounted Capital Cost	$ 435
Discounted Benefits	$ >4,350
Net Economic Benefits	$ >3,915
Benefit-Cost Ratio	>10.0

*Note: All values in 2015 dollars; values were discounted using a 3% discount rate. (O&M costs included from costs)

California High Speed Rail

U.S. REGION: **West**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **$130.3 – 260.6 B**
BENEFIT-COST RATIO: **4.0 – 7.0**

Photos Source: hsr.ca.gov

PROJECT SPONSORS:

- California High Speed Rail Authority
- Federal Railroad Administration

PROJECT DESCRIPTION

- The high-speed rail system planned for California will eventually encompass over 800 miles of rail, with up to 24 stations. Full build-out of the system will connect Los Angeles to San Francisco.

CONSIDERATIONS

- The capacity of California's intercity transportation system is insufficient to meet existing and future demand, and the current and projected future congestion of the system will continue to result in deteriorating air quality, reduced reliability, and increased travel times.

Sources: (1) CA HSR Benefit Cost Analysis

California High Speed Rail

PROJECT BENEFITS

- Travel time, reliability, travel cost and productivity benefits for users transferring from auto to HSR.
- Travel time, reliability, safety and emission benefits for highway users traveling in less congested conditions due to mode shift from auto to HSR.
- Passenger delay, operating cost and emission savings in the aviation sector due to mode shift from air to HSR.

PRIMARY CHALLENGES

- Funding
- Litigation against the Authority for noncompliance with Proposition 1A and other cases over the project's environmental certification and use of cap-and-trade money.
- Logistics and scheduling at Union Station in LA

CALIFORNIA MARKET SERVED:

Population (Census, 2015 value)	39,145,000
Employment (BLS, 2015 value)	16,093,000
GDP (BEA, 2014 value, $M)	$ 2,305,921

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 58,794
Discounted Capital Cost	$ 43,425
Discounted Benefits	$ 173,700 – 303,975
Net Economic Benefits	$ 130,275 – 260,550
Benefit-Cost Ratio	4.0 – 7.0

Note: All values in 2015 dollars. Values were discounted using a 7% discount rate. O&M excluded from costs.

Next Generation Air Traffic Control System

U.S. REGION: **National**
PROJECT TYPE: **Air**

NET ECONOMIC BENEFIT: **$58.0 – 116.0 B**
BENEFIT-COST RATIO: **4.0 – 7.0**

Photo Source: FAA

PROJECT SPONSORS:

- Federal Aviation Administration in partnership with individual airports nationwide

NextGEN

PROJECT DESCRIPTION

- NextGen is a long-term initiative that is transforming the current ground-based radar air-traffic control system to a system based on satellite navigation, automated position reporting, and digital communications.

CONSIDERATIONS

- Growth in passenger and cargo air traffic have contributed to congested airspace that creates delays, increases the likelihood of safety incidents involving aircraft, increases emissions, and reduces convenience to passengers.
- Technology advancements have made the traditional radar surveillance, ground-based navigation systems, and voice communications utilized by air traffic control outdated and inefficient.

Source: FAA

Next Generation Air Traffic Control System

Photo Source: FAA

PROJECT BENEFITS

- Increase air transportation-system capacity by allowing the nation's airports to use existing runway and terminal capacity more efficiently.
- Greater airspace safety and security by proactively identifying and resolving potential hazards and a reduction in delays experienced by airlines and passengers.
- Fuel savings and reduced GHG and emissions.
- Provide a better travel experience, with less time spent sitting on the ground and holding in the air, increases airport access, predictability, and reliability.

PRIMARY CHALLENGES

- Rollout is slower than planned due to insufficient funding by airports/airlines and disagreements among implementation partners that have slowed decision-making by FAA.

NATIONAL MARKET SERVED:

Population (Census, 2015 value)	321,419,000
Employment (BLS, 2015 value)	141,958,000
GDP (BEA, 2014 value, $M)	$ 17,232,618

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 25,312
Discounted Capital Cost	$ 19,340
Discounted Benefits	$ 77,360 – 135,380
Net Economic Benefits	$ 58,020 – 116,040
Benefit-Cost Ratio	4.0 – 7.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate. O&M excluded from costs.

Positive Train Control

U.S. REGION: **National**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **$27.1 – 54.1 B**
BENEFIT-COST RATIO: **4.0 – 7.0**

Photo Source: FRA

PROJECT SPONSORS:

- US Department of Transportation
- Individual privately-owned railroads
- Commuter rail lines
- Amtrak

PROJECT DESCRIPTION

- Positive Train Control (PTC) systems will prevent train-to-train collisions, overspeed derailments, and incursions into roadway work limits. PTC sends and receives a continuous stream of data transmitted by wireless signals about the location, speed, and direction of trains. PTC systems utilize advanced technologies including digital radio links, global positioning systems and wayside computer control systems that aid dispatchers and train crews in safely managing train movements.

CONSIDERATIONS

- Freight railroads will ultimately be required to install PTC on an estimated 60,000 miles of track.
- Railroads must self-fund PTC
- Congressional deadline of December 2018

Sources: (1) AAR

Positive Train Control

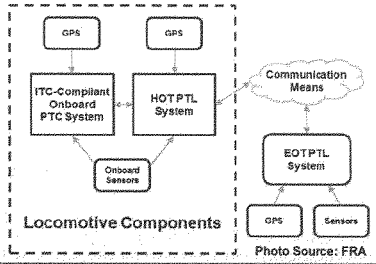


Photo Source: FRA

Photo Source: FRA

PROJECT BENEFITS

- When fully up and running, PTC will complement existing safety technologies in important ways. It will help prevent train collisions, derailments caused by high speeds, unauthorized incursions by trains onto sections of track where maintenance is taking place, and movement of a train through a track switch left in the wrong position.
- Because of modal diversions, highway accident costs, air pollution, and rail accidents would be reduced. Shippers would receive a benefit from service quality improvements.

PRIMARY CHALLENGES

- Meeting the December 2018 deadline
- Interoperability among systems

NATIONAL MARKETS SERVED:

Population (Census, 2015 value)	321,418,820
Employment (BLS, 2015 value)	141,958,417
GDP (BEA, 2014 value, $M)	$ 17,232,618

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost (total program)	$ 10,000
Discounted Capital Cost	$ 9,022
Discounted Benefits	$ 36,088 – 63,154
Net Economic Benefits	$ 27,066 – 54,132
Benefit-Cost Ratio	4.0 – 7.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate. O&M excluded from costs.

Hampton Roads Crossing

U.S. REGION: **South**

PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$19.0 – 38.0 B**

BENEFIT-COST RATIO: **4.0 – 7.0**

Photos Source: VDOT

PROJECT SPONSORS:

- Virginia Department of Transportation

VDOT Virginia Department of Transportation

PROJECT DESCRIPTION

- The program would provide a new crossing parallel to the I-664 Monitor Merrimac Memorial Bridge Tunnel with a connection from the new bridge tunnel to Norfolk and Portsmouth.
- Widen I-664 to the I-64/I-264 interchange in Chesapeake, VA.
- New interchanges and connections for existing highways and new roadways, and a tunnel to the west of the existing I-664 Monitor Merrimac Memorial Bridge Tunnel for vehicular and multimodal traffic.

CONSIDERATIONS

- Improve accessibility, mobility, and goods movement to help relieve congestion at the existing I-64 Hampton Roads Bridge Tunnel.
- Connect ports, the military, and major freight corridors to controlled access highways.

Sources: (1) HRT Planning Organization

Hampton Roads Crossing

Photos Source: VDOT

PROJECT BENEFITS

- Reduces congestion at Hampton Roads Bridge Tunnel for an average of over 90,000 vehicles per day.
- Increases travel at underutilized Monitor Merrimac Memorial Bridge Tunnel by an average of over 63,000 vehicles per day.
- Other benefits include improved regional travel times, improved safety, direct connections to the port and Navy, accommodating future growth in the western part of the region.
- The Port of Virginia is able to accommodate post-Panamax ships and is a designated strategic military port.

PRIMARY CHALLENGES

- Funding

VIRGINIA MARKET SERVED:

Population (Census, 2015 value)	8,383,000
Employment (BLS, 2015 value)	3,812,000
GDP (BEA, 2014 value, $M)	$ 462,861

STATES EAST OF THE MISSISSIPPI RIVER MARKETS SERVED:

Population (Census, 2015 value)	185,224,000
Employment (BLS, 2015 value)	82,689,000
GDP (BEA, 2014 value, $M)	$ 9,727,377

ECONOMIC BENEFITS AND COSTS

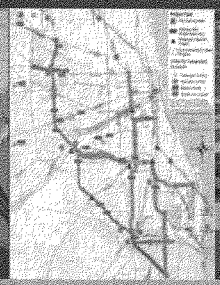
	2015$ (M)
Capital Cost	$ 8,171
Discounted Capital Cost	$ 6,328
Discounted Benefits	$ 25,312 – 44,296
Net Economic Benefits	$ 18,984 – 37,968
Benefit-Cost Ratio	4.0 – 7-0

Note: All values in 2015 dollars; values were deflated and using a 3% discount rate. O&M excluded from costs.

Chicago CREATE

U.S. REGION: **Midwest**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **$11.2 – 22.4 B**
BENEFIT-COST RATIO: **4.0 – 7.0**



Photos Source: createprogram.org

PROJECT SPONSORS:

- State of Illinois
- City of Chicago
- Metra
- Amtrak
- Freight railroads

C R E A T E
KEEPING THE CO IN CHICAGO

PROJECT DESCRIPTION

- CREATE will invest in improvements to increase the efficiency of the region's passenger and freight rail infrastructure and enhance the quality of life for Chicago-area residents.
- The full program includes 37 freight, 7 passenger, and 25 grade separation projects.

CONSIDERATIONS

- Due to geometric constraints and shared tracks with passenger operations, it can take up to 30 hours for freight trains to pass through the Chicago region.
- Freight rail delays lead to increased traffic congestion on roadways, generate unnecessary levels of air pollution, raise safety concerns, adversely affect the reliability and speed of rail passenger service, and make it harder for farmers to make a profit.
- At-grade rail crossings negatively impact communities and cause chronic traffic delays on roadways.

Sources: (1) CREATE Program

Chicago CREATE

Photos Source: createprogram.org

PROJECT BENEFITS

- Reduced delay to passenger trains, freight trains, and motorists at grade separations and on the highway due to avoided truck traffic.
- Increased rail capacity and logistics cost savings through avoided truck diversions and avoided highway pavement damage.
- Safety from grade separation projects and truck travel avoided.
- Sustainability through fuel savings resulting from increased rail capacity and avoided truck trips, reduced motorist trips, and reduced emissions due to fuel savings.

PRIMARY CHALLENGES

- Funding

CHICAGO MSA MARKET SERVED:

Population (Census, 2014 value)	9,555,000
Employment (BLS, 2015 value)	4,557,000
GDP (BEA, 2014 value, $M)	$ 610,552

NATIONAL MARKETS SERVED:

Population (Census, 2015 value)	321,419,000
Employment (BLS, 2015 value)	141,958,000
GDP (BEA, 2014 value, $M)	$ 17,232,618

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost (total program)	$ 3,910
Discounted Capital Cost	$ 3,741
Discounted Benefits	$ 14,964 – 26,187
Net Economic Benefits	$ 11,223 – 22,446
Benefit-Cost Ratio	4.0 – 7.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate. Grant funds excluded from costs.

Rural Water Supply Program

U.S. REGION: **West**
PROJECT TYPE: **Water**

NET ECONOMIC BENEFIT: **$5.6 – 11.1 B**
BENEFIT-COST RATIO: **4.0 – 7.0**

Photo Source: EPA

Photo Source: EPA

Photo Source: Bureau of Reclamation

PROJECT SPONSORS:

- States of New Mexico, North Dakota, South Dakota, Minnesota, Montana and Iowa
- North Central Montana Regional Water Authority
- Rocky Boy's Reservation
- Garrison Diversion Conservancy District
- Eastern New Mexico Water Utility Authority
- Fort Peck Tribes
- Dry Prairie Rural Water Authority
- Bureau of Reclamation

PROJECT DESCRIPTION

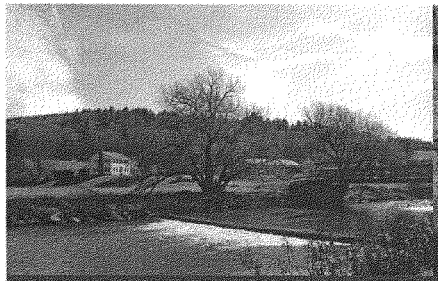
- As part of the Rural Water Supply Program, financial and technical assistance is provided to serve rural communities (less than 50,000 people) and Indian tribes and tribal organizations in 17 states, to undertake appraisal investigations and feasibility studies, however, construction of a project requires a specific Act of Congress.

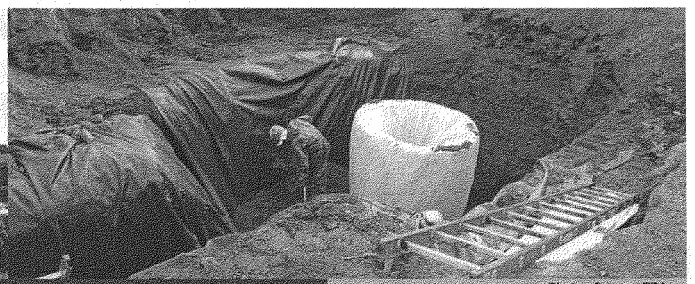
CONSIDERATIONS

- Insufficient water is limiting economic growth and ability to meet demands of increasing population.
- Poor water quality and inconsistent water pressure due to aging infrastructure causing extensive regulatory violations and water system shutdowns.
- Some water supplies contain high levels of manganese, iron, sulfate, copper and other minerals unsafe for long-term human consumption.

Sources: Bureau of Reclamation and Project Sponsors

Rural Water Supply Program





Photos Source: EPA

PROJECT BENEFITS

- Deliver safe and reliable water supply to meet the long-term water needs of rural and disadvantaged communities.
- Expands economic development opportunities.

PRIMARY CHALLENGES

- Federal funding for selected projects has not been adequate to complete the project and does not cover cost increases due to inflation.
- A lack of Federal funding at an adequate level significantly extends each project's completion date, increasing the total project cost and affecting the sponsor's ability to provide matching funding.

AZ, CA, CO, ID, KS, MT, NE, NV, NM, ND, OK, OR, SD, TX, UT, WA, WY MARKETS SERVED:

Population* (Census, 2015 value)	111,678,000
Employment (BLS, 2015 value)	47,838,000
GDP (BEA, 2014 value, $M)	$ 6,233,933

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 2,236
Discounted Capital Cost	$ 1,854
Discounted Benefits	$ 7,416 – 12,978
Net Economic Benefits	$ 5,562 – 11,124
Benefit-Cost Ratio	4.0 – 7.0

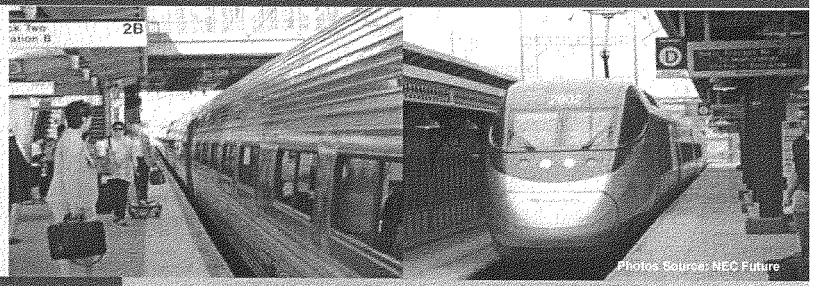
*See All Tables in 2015 dollars (value of costs discounted using a pre-tax discount rate; GDP excluded from costs)

Northeast Corridor Improvements

U.S. REGION: **Northeast**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **$75.0 – 225.0 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

NEC FUTURE
A Rail Investment Plan for the Northeast Corridor



Photos Source: NEC Future

PROJECT SPONSORS:

- Individual state DOTs, including Massachusetts, Connecticut, Rhode Island, Pennsylvania, New Jersey, New York, Delaware, Maryland, Virginia, and the District of Columbia
- Amtrak
- Federal Railroad Administration
- Corridor operators including SEPTA, NJTransit, MTA, MetroNorth, VRE, MARC, MBTA

PROJECT DESCRIPTION

- Improvements to passenger rail transportation in the Northeast Corridor from Washington, D.C. to Boston, MA. Growth in population and employment in the region, combined with changes in travel preference, will increasingly require a level of service and connectivity that cannot be supported by the existing corridor infrastructure.

CONSIDERATIONS

- The quality of service falls short due to the aging and obsolete infrastructure that has resulted from insufficient investment to maintain a state of good repair.
- A transportation system that provides capacity and options for reliable, efficient, environmentally sustainable, and cost-effective movement of passengers and goods is needed to support continued economic growth.

Sources: (1) NEC FUTURE

Northeast Corridor Improvements

Photos Source: NEC Future

PROJECT BENEFITS

- Collectively, the investments would improve the state of good repair and reliability.
- Travel times between the region's economic centers would be reduced.
- Improved reliability would benefit both intercity travelers and transit commuters who share the corridor.

PRIMARY CHALLENGES

- Funding
- Governance

DC, VA, MD, DE, NJ, PA, NY, CT, RI, AND MA MARKETS SERVED:

Population (Census, 2015 value)	69,005,000
Employment (BLS, 2015 value)	32,424,000
GDP (BEA, 2014 value, $M)	$ 4,355,899

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 100,800
Discounted Capital Cost	$ 75,000
Discounted Benefits	$ 150,000 – 300,000
Net Economic Benefits	$ 75,000 – 225,000
Benefit-Cost Ratio	2.0 – 4.0

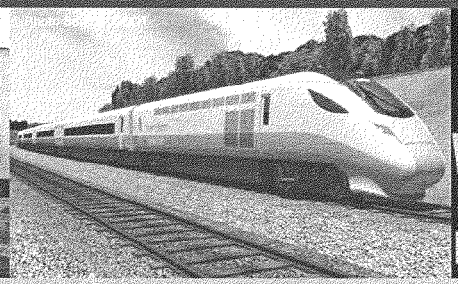
Note: All values in 2015 dollars. Benefits were discounted using a 7% US discount rate. USDOT economic analysis guide.

Southeast High Speed Rail

U.S. REGION: **South**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **$4.3 – 12.8 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photo Source: Virginia CTB



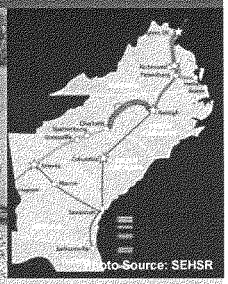


Photo Source: SEHSR

PROJECT SPONSORS:

- Individual state DOTs, including DC, Virginia, North Carolina, South Carolina, and Georgia
- Federal Railroad Administration

PROJECT DESCRIPTION

- Extending high-speed passenger rail services from Washington, D.C. south through Richmond, Hampton Roads, Raleigh, Charlotte, and Atlanta.
- SEHSR would connect to the Northeast Corridor in Washington, DC.

CONSIDERATIONS

- The goal is to improve intercity travel and mobility between Atlanta and DC by expanding the region's transportation capacity and reliable mode choices through improvements in passenger rail services.
- Parts of the corridor, especially along I-95, are highly congested. Regional highways and the airports along the Eastern seaboard are nearing the limits of capacity.

Sources: (1) Southeast Corridor PRIIP SDP

Southeast High Speed Rail

Photo Source: dc2rvarail.com

Photo Source: NC DOT

PROJECT BENEFITS

- Reductions in passenger vehicles result in safety savings, emissions reductions, highway congestion savings, highway maintenance savings, and land value accretion.
- The availability of a reliable and high-speed connection between the region's economic centers would support long-term economic development in the region.

PRIMARY CHALLENGES

- Funding
- Trackage rights agreements

DC, VA, NC, SC, AND GA MARKETS SERVED:

Population (Census, 2015 value)	34,209,000
Employment (BLS, 2015 value)	15,082,000
GDP (BEA, 2014 value, $M)	$ 1,725,090

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 4,644
Discounted Capital Cost	$ 4,254
Discounted Benefits	$ 8,508 – 17,016
Net Economic Benefits	$ 4,254 – 12,762
Benefit-Cost Ratio	2.0 – 4.0

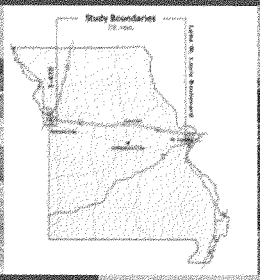
Note: All values in 2015 dollars; values were discounted using a 3% discount rate; O&M excluded from costs

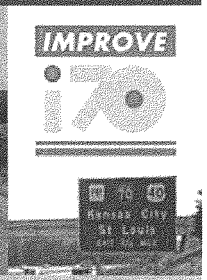
I-70 Missouri

U.S. REGION: **Midwest**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$3.9 – 11.6 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photos Source: Improvei70.org





PROJECT SPONSORS:

- Missouri Department of Transportation

PROGRAM:

- National Interstate Highway System

PROJECT DESCRIPTION

- Reconstruct and add capacity (approximately 200 miles) in Missouri between Kansas City and St. Louis. The corridor is truck-heavy both between Kansas City and St. Louis and also as part of interstate routes.

CONSIDERATIONS

- I-70 is the most important transportation corridor in Missouri, connecting the state's two largest cities and carrying more rural daily traffic than any other route.
- Many portions of the facility are strained beyond capacity, increasing delays and dampening economic activity. Deteriorating pavement and poorly functioning interchanges compound the problem.
- By the year 2030, all segments of I-70 are expected to operate at unacceptable levels of service.

I-70 Missouri

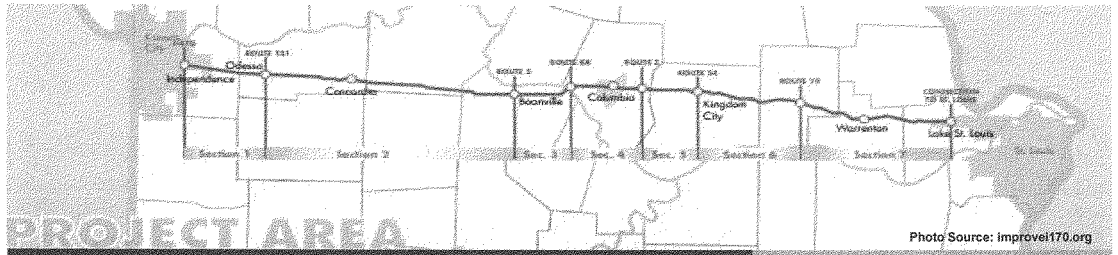


Photo Source: improvei70.org

PROJECT BENEFITS

- The increased capacity and improved roadway geometrics will improve operational conditions, relieve congestion and reduce the density of traveling vehicles, thereby reducing the crash rate, improving freight movement efficiencies, and providing increased accessibility to recreational activities.
- The project will upgrade substandard bridges, interchanges, and roadways.
- The selected alternative will generally be constructed along the existing alignment to preserve the general location of the existing facility.
- Additional lanes and frontage roads will allow for redundancies and improve response times to regional and national emergencies.

PRIMARY CHALLENGES

- Funding

MISSOURI MARKET SERVED:

Population (Census, 2015 value)		6,084,000
Employment (BLS, 2015 value)		2,764,000
GDP (BEA, 2014 value, $M)	$	279,835

KANSAS, MISSOURI, AND ILLINOIS MARKETS SERVED:

Population (Census, 2015 value)		21,855,000
Employment (BLS, 2015 value)		10,086,000
GDP (BEA, 2014 value, $M)	$	1,160,527

ECONOMIC BENEFITS AND COSTS

		2015$ (M)
Capital Cost	$	4,208
Discounted Capital Cost	$	3,854
Discounted Benefits	$	7,708 – 15, 416
Net Economic Benefits	$	3,854 – 11,562
Benefit-Cost Ratio		2.0 – 4.0

Note: All values in 2015 dollars, values from Discounted Benefits to Benefit-Cost Ratio – 3% discount rate – 30 year analysis period

I-70 East

U.S. REGION: **West**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **> $15.7 B**
BENEFIT-COST RATIO: **> 10.0**

Photos Source: CDOT

PROJECT SPONSORS:

- Colorado Department of Transportation

PROGAM:

- Recapitalization of the National Interstate Highway System

PROJECT DESCRIPTION

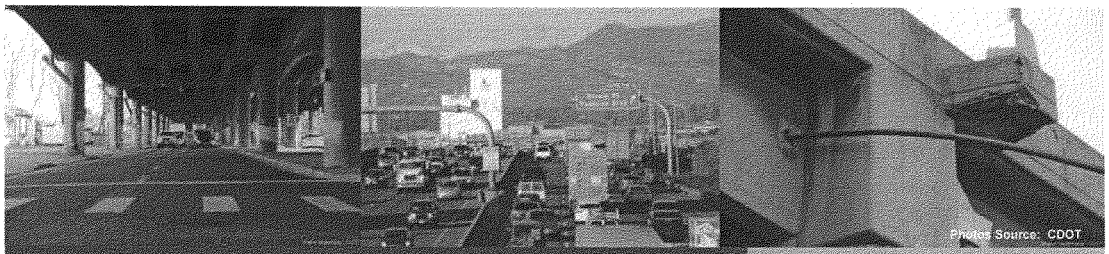
- The project in Denver would remove the deteriorating, 50-year old viaduct, rebuild I-70 below grade on the existing alignment, and place a nearly four-acre landscaped cover over the highway between Columbine Street and Clayton Street. It also would add managed lanes in each direction of the highway from I-25 to Tower Road to improve mobility.

CONSIDERATIONS

- The purpose of the project is to implement a transportation solution that improves safety, access, and mobility and addresses congestion on I-70, a key east-west national corridor.
- The need arises from increased transportation demand, limited transportation capacity, safety concerns, and transportation infrastructure deficiencies in the corridor.
- The corridor also connects to a nationally-recognized bottleneck at the intersection of I-70 and I-25.

Sources: (1) FHWA

I-70 East



Photos Source: CDOT

PROJECT BENEFITS

- The addition of new lanes, improvement to ramps, addition of auxiliary lanes, improvements to roadways, and modification of interchanges will better facilitate traffic movements.
- Implementation of managed lanes will provide additional benefits to operations of I-70 as a whole, will preserve capacity on I-70, and will provide reliable travel times. The general purpose lanes in these alternatives will operate slightly less efficiently than the managed lanes.
- Daily vehicle hours traveled will decrease with the build alternative, resulting in travel time savings for users.

PRIMARY CHALLENGES

- Funding

COLORADO MARKET SERVED:

Population (Census, 2015 value)		5,457,000
Employment (BLS, 2015 value)		2,516,000
GDP (BEA, 2014 value, $M)	$	305,871

UTAH, COLORADO, AND KANSAS MARKETS SERVED:

Population (Census, 2015 value)		11,364,000
Employment (BLS, 2015 value)		5,298,000
GDP (BEA, 2014 value, $M)	$	590,309

ECONOMIC BENEFITS AND COSTS

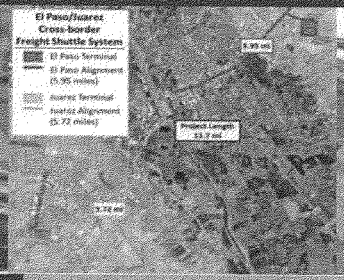
		2015$ (M)
Capital Cost	$	1,904
Discounted Capital Cost	$	1,744
Discounted Benefits	$	>17,440
Net Economic Benefits	$	>15,696
Benefit-Cost Ratio		>10.0

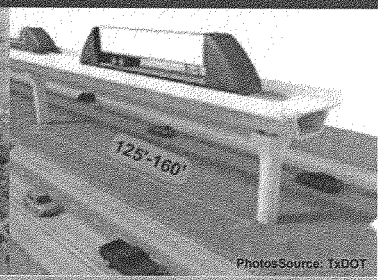
Notes: All values in 2015 collapsed values unless [illegible] Discount rate: 7.0% [illegible] Excluded cost [illegible]

Texas Freight Shuttle System

U.S. REGION: **South**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **> $9.4 B**
BENEFIT-COST RATIO: **> 10.0**





PhotosSource: TxDOT

PROJECT SPONSORS:

- TxDOT
- Freight Shuttle International
- Texas A&M Transportation Institute
- FSS Consortium

PROJECT DESCRIPTION

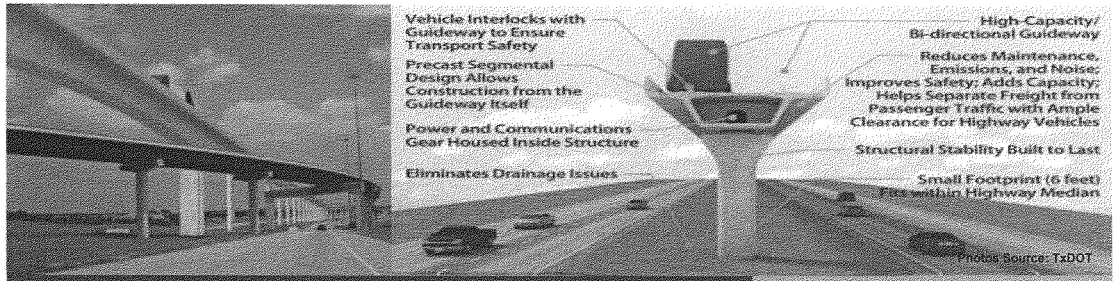
- The Freight Shuttle System (FSS) is an automated system of transport vehicles operating on an elevated and secure guideway between specially designed, secure terminals.
- The project would construct 11.7 miles of cross-border FSS connecting El Paso, TX to Cuidad Juarez, Mexico.
- FSS will use single-unit transporters propelled by linear induction motors to move freight on an electric, elevated guideway built on highway right-of-way or other available public or private ROW.

CONSIDERATIONS

- Major landside ports-of-entry to the U.S., including those along the U.S./Mexico border, experience truck volumes during peak hours that exceed capacity. In addition, the existing border crossing processes are inefficient.

Source: TxDOT

Texas Freight Shuttle System



PROJECT BENEFITS

- Reduces border congestion, security, infrastructure damage, air quality, carbon emissions and fossil fuel dependency.
- Enables trucking interests, retailers and manufacturers to improve their supply chain efficiency by automating freight movement.

PRIMARY CHALLENGES

- Funding

NATIONAL MARKET SERVED:

Population (Census, 2014 value)		321,413,000
Employment (BLS, 2015 value)		141,958,000
GDP (BEA, 2014 value, $M)	$	17,232,618

ECONOMIC BENEFITS AND COSTS

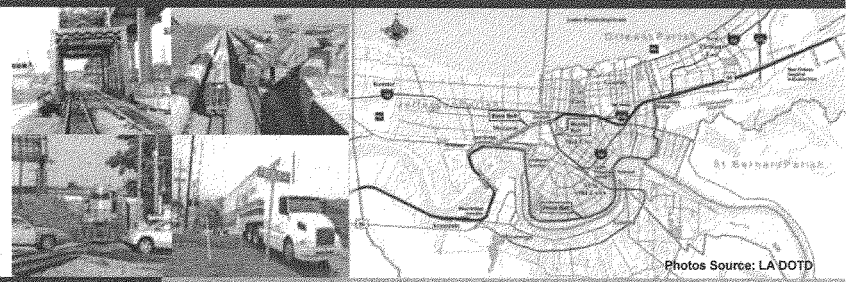
		2015$ (M)
Capital Cost	$	1,094
Discounted Capital Cost	$	1,046
Discounted Benefits	$	>10,460
Net Economic Benefits	$	>9,414
Benefit-Cost Ratio		>10.0

Note: All values in 2015 dollar values were discounted using a 3% discount rate. CGM evaluated 10 years.

New Orleans Rail Gateway

U.S. REGION: **South**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **> $5.5 B**
BENEFIT-COST RATIO: **> 10.0**



Photos Source: LA DOTD

PROJECT SPONSORS:

- Louisiana Department of Transportation and Development
- New Orleans Regional Planning Commission
- Freight operators

PROJECT DESCRIPTION

- The New Orleans Rail Gateway is the fourth largest in the country. Upgrades are required to accommodate growing rail traffic. The Project is a program of individual improvements designed to collectively reduce vehicle congestion, correct rail and roadway physical and operational deficiencies, improve safety, and facilitate emergency evacuation from the region. Significant planning work is ongoing.

CONSIDERATIONS

- The New Orleans Gateway is one of five major rail interchange points between the eastern and western Class I railroads and also has one of the four major Mississippi River rail bridges. The Gateway rail network is operating near capacity with freight trains experiencing a combined 30 hours of delay per day.

Sources: (1) LA DOTD (2) New Orleans Rail Gateway Infrastructure Feasibility Analysis

New Orleans Rail Gateway

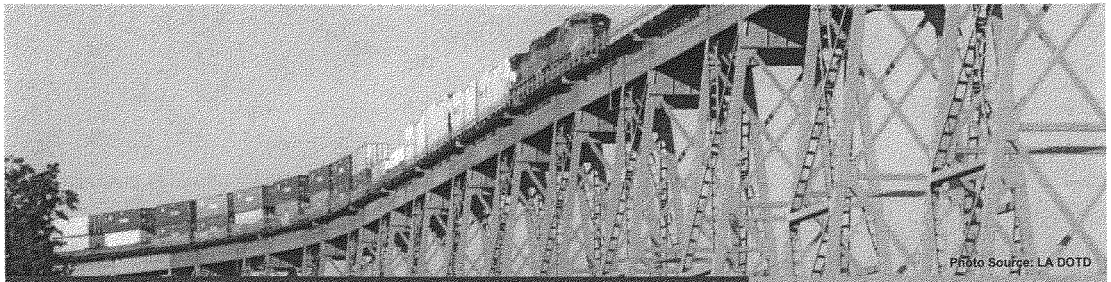


Photo Source: LA DOTD

PROJECT BENEFITS

- Addressing capacity constraints and delay issues could expedite the transfer of railcars between the eastern and western railroads, reduce transit time and costs that are borne by shippers, and eventually benefit the consumer by providing a lower cost of living.

PRIMARY CHALLENGES

- Funding
- Governance and coordination of multiple stakeholder interests

NEW ORLEANS MSA MARKET SERVED:

Population (Census, 2014 value)	1,252,000
Employment (BLS, 2015 value)	563,000
GDP (BEA, 2014 value, $M)	$ 80,278

NATIONAL MARKET SERVED:

Population (Census, 2015 value)	321,413,000
Employment (BLS, 2015 value)	141,958,000
GDP (BEA, 2014 value, $M)	$ 17,232,618

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 721
Discounted Capital Cost	$ 615
Discounted Benefits	$ >6,150
Net Economic Benefits	$ >5,535
Benefit-Cost Ratio	>10.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate. O&M excluded from costs.

Mississippi River Crossing

U.S. REGION: **South**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **> $5.0 B**
BENEFIT-COST RATIO: **> 10.0**

Photos Source: TDOT

PROJECT SPONSORS:

- Tennessee Department of Transportation
- Arkansas Department of Transportation

PROJECT DESCRIPTION

- The new bridge will improve cross-river mobility for people and freight in the Memphis, Tennessee area. This includes safeguarding cross-river mobility against earthquakes, crashes, hostile acts, or other catastrophe to maintain local, regional, and national traffic flow and commerce.

CONSIDERATIONS

- The Memphis area is a major multi-modal distribution center with limited rail and highway crossings of the Mississippi River. The crossings are susceptible to bridge failure and closures or restrictions due to vehicular incidents, earthquakes, and other catastrophes.
- There are two highway bridge crossings near downtown, but there is little highway redundancy north or south of Memphis since the next nearest bridge crossings lie 70 miles to the south and 90 miles to the north.

Source: Mississippi River Crossing Feasibility and Location Study

Mississippi River Crossing

Photo Source: TDOT

PROJECT BENEFITS

- Mobility for future growth including lower transportation costs for goods, enhanced productivity, and competitiveness for Memphis area businesses.
- Capacity relief will decrease operating costs and travel times, and improve economic competitiveness for businesses in the region and increase the quality of life for residents.
- Enhance freight movement for the five Class 1 railroads that serve Memphis and the inland port.
- Meet current and future transportation demand as traffic continues to increase and freight traffic is expected to double in the next two decades.
- Improve efficiency and effectiveness of the transportation system by diverting traffic from the downtown crossings and providing an alternate route.

PRIMARY CHALLENGES

- Funding

TENNESSEE, ARKANSAS, AND MISSISSIPPI MARKETS SERVED:

Population (Census, 2015 value)	12,571,000
Employment (BLS, 2015 value)	5,206,000
GDP (BEA, 2014 value, $M)	$ 521,947

ECONOMIC BENEFITS AND COSTS

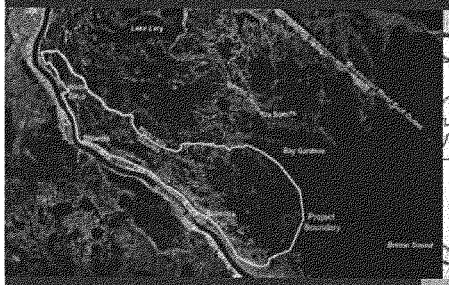
	2015$ (M)
Capital Cost	$ 603
Discounted Capital Cost	$ 561
Total Discounted Benefits	$ >5,610
Net Economic Benefits	$ > 5,049
Benefit-Cost Ratio	>10.0

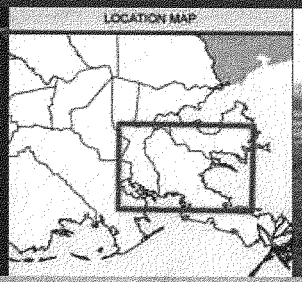
Note: All values in 2015 dollars. Values were discounted using a 3% discount rate. O&M excluded from costs.

Medium Diversion at White Ditch

U.S. REGION: **South**
PROJECT TYPE: **Water**

NET ECONOMIC BENEFIT: **> $3.5 B**
BENEFIT-COST RATIO: **> 10.0**





Photos Source: USACE

PROJECT SPONSORS:

- Coastal Protection and Restoration Authority
- US Army Corps of Engineers

PROGRAM:

- Louisiana Coastal Area Program

PROJECT DESCRIPTION

- Construct diversion to provide additional freshwater, nutrients, and fine sediment to the area between the Mississippi River and River aux Chenes ridges for wetland restoration.
- Restore functional hydrology and improve habitat conditions for fish and wildlife.

CONSIDERATIONS

- Wetlands deteriorating due to subsidence, lack of sediment and nutrient deposition, and erosion.
- Recent hurricanes and tropical storms have also caused significant damage and land loss.
- With an average loss of about 275 acres of marsh per year, the ecosystem is vulnerable to complete collapse.

Sources: USACE, CPRA

Medium Diversion at White Ditch

Photo Source: USACE

PROJECT BENEFITS

- Restore and maintain ecological integrity, including habitats, communities, and populations of native species.
- Contribute to achieving and sustaining a larger coastal ecosystem that can support and protect the environment, economy, and culture of southern Louisiana.
- Maintain the current marsh habitat of 41,200 acres by restoring sediment inputs averaging about 1.3 million cubic yards per year.
- Restore functional hydrology.

PRIMARY CHALLENGES

- Recommended plan exceeds the cost authorization for this project.
- Pending agreement between USACE and the State of Louisiana.

LOUISIANA MARKET SERVED:

Population (Census, 2015 value)	4,671,000
Employment (BLS, 2015 value)	1,987,000
GDP (BEA, 2014 value, $M)	$ 251,673

ECONOMIC BENEFITS AND COSTS

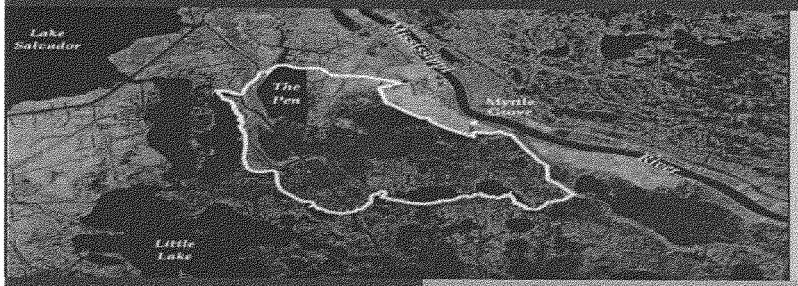
	2015$ (M)
Capital Cost	$ 421
Discounted Capital Cost	$ 391
Discounted Benefits	$ >3,910
Net Economic Benefits	$ >3,519
Benefit-Cost Ratio	>10.0

Note: All values in 2015 dollars; values were discounted using a 3.5% discount rate. O&M excluded from costs.

Medium Diversion at Myrtle Grove

U.S. REGION: **South**
PROJECT TYPE: **Water**

NET ECONOMIC BENEFIT: **> $2.5 B**
BENEFIT-COST RATIO: **> 10.0**



Photos Source: USACE

PROJECT SPONSORS:

- Coastal Protection and Restoration Authority
- US Army Corps of Engineers

PROGRAM:

- Louisiana Coastal Area Program

PROJECT DESCRIPTION

- Construct control structure to divert additional sediment and nutrients to nourish highly degraded existing fresh to brackish wetlands in shallow open water areas.
- Compliment sediment diversion through dedicated dredging along the Mississippi River.

CONSIDERATIONS

- Substantial loss of wetlands with a shift to more saline marshes in the last 50 years.
- Moderately high wetland loss rates are primarily caused by the altered hydrology associated with navigation and flood control projects, as well as oil and gas activities.
- Without remediation, about 14,500 acres of wetlands will be lost over the next 20 years and wetland types will continue to shift towards more saline habitats.

Source: USACE, 2013

Medium Diversion at Myrtle Grove

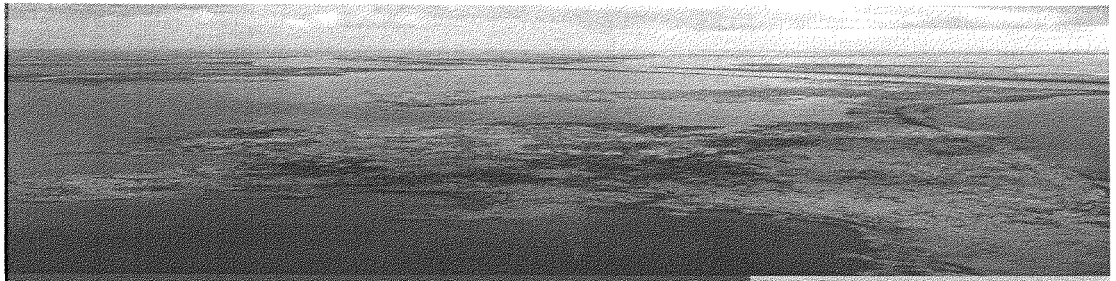


Photo Source: USACE

PROJECT BENEFITS

- Provide up to 13,400 acres of new emergent marsh and prevent the loss of another 6,300 acres of marsh.
- Restore and maintain ecological integrity, including habitats, communities, and populations of native species.
- Contribute to achieving and sustaining a larger coastal ecosystem that can support and protect the environment, economy, and culture of southern Louisiana.
- Sustainable reintroduction of riverine resources.
- Preservation and maintenance of critical coastal geomorphic structures and critical areas within the coastal ecosystem.

PRIMARY CHALLENGES

- Funding has not been obligated to construct project (partial funding could come from Coastal Wetlands Planning Protection and Restoration Act).
- Pending agreement between USACE and the State of Louisiana.

LOUISIANA MARKET SERVED:

Population (Census, 2015 value)	4,671,000
Employment (BLS, 2015 value)	1,987,000
GDP (BEA, 2014 value, $M)	$ 251,673

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 302
Discounted Capital Cost	$ 281
Discounted Benefits	$ >2,810
Net Economic Benefits	$ >2,529
Benefit-Cost Ratio	>10.0

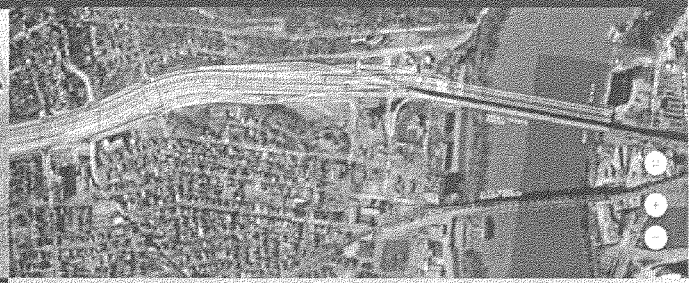
Note: All values in 2015 dollars, values were discounted using 3% discount rate. O&M excluded from costs.

Brent Spence Bridge

U.S. REGION: **Midwest**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$14.9 – 22.3 B**
BENEFIT-COST RATIO: **7.0 – 10.0**

Photos Source: brentspencebridgecorridor.com



PROJECT SPONSORS:

- Ohio and Kentucky state Departments of Transportation

PROGAM:

- Recapitalization of the National Interstate Highway System

PROJECT DESCRIPTION

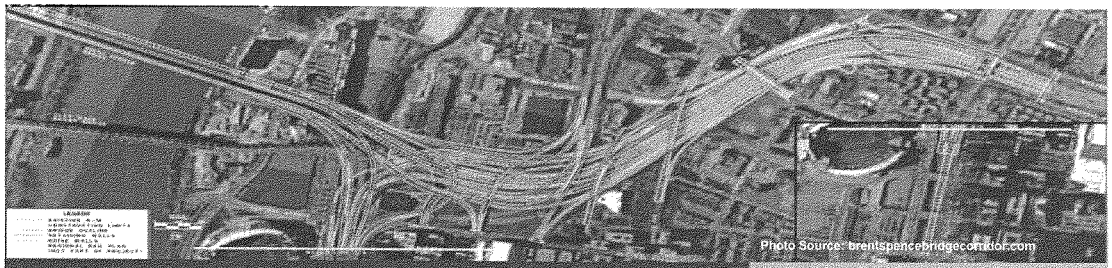
- The bridge carries both I-75 and I-71 traffic through the Greater Cincinnati and Northern Kentucky area, but it also connects 10 States (including Kentucky and Ohio) from as far north as Michigan to as far south as Florida.
- The bridge was listed as "functionally obsolete" by the National Bridge Inventory in 1998 due in large part to limited visibility and safety concerns.

CONSIDERATIONS

- The Brent Spence Bridge is a key part of America's mid-west transportation infrastructure and is important to commerce in Alabama, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Michigan, Ohio and Tennessee. The aging bridge does not adequately serve current volume and certainly cannot meet increasing demand.

Sources: [1] Report to Congress

Brent Spence Bridge



PROJECT BENEFITS

- The project will improve delivery times, reduce congestion costs resulting from excessive time spent in traffic, and improve national productivity and economic performance.
- Other positive impacts include economic returns on increased transportation network efficiencies.

PRIMARY CHALLENGES

- Funding
- Disagreements between Ohio and Kentucky and local communities about proposed tolls for the bridge

OHIO AND KENTUCKY MARKETS SERVED

Population (Census, 2015 value)	16,039,000
Employment (BLS, 2015 value)	7,293,000
GDP (BEA, 2014 value, $M)	$ 763,845

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 2,826
Discounted Capital Cost	$ 2,480
Discounted Benefits	$ 17,360 – 24,800
Net Economic Benefits	$ 14,880 – 22,320
Benefit-Cost Ratio	7.0 – 10.0

Note: All values in 2015 dollars; values were discounted using 7.0% discount rate. O&M excluded from costs.

Savannah Harbor Expansion

U.S. REGION: **South**
PROJECT TYPE: **Ports-Waterways**

NET ECONOMIC BENEFIT: **$3.8 – 5.7 B**
BENEFIT-COST RATIO: **7.0 – 10.0**

Photos Source: Georgia Ports Authority

PROJECT SPONSORS:

- Georgia Ports Authority
- US Army Corps of Engineers

Georgia Ports Authority
WE DO MORE

PROJECT DESCRIPTION

- Deepen the Savannah Harbor federal shipping channel from a depth of 42 feet to 47 feet
- Extend entrance channel by 7 miles
- Construct three bend wideners and two meeting areas
- Enlarge turning basin and terminals

CONSIDERATIONS

- Port is not able to efficiently accommodate the growing number of large container vessels demanded of world trade.

Sources: USACE, Georgia Ports Authority

Savannah Harbor Expansion

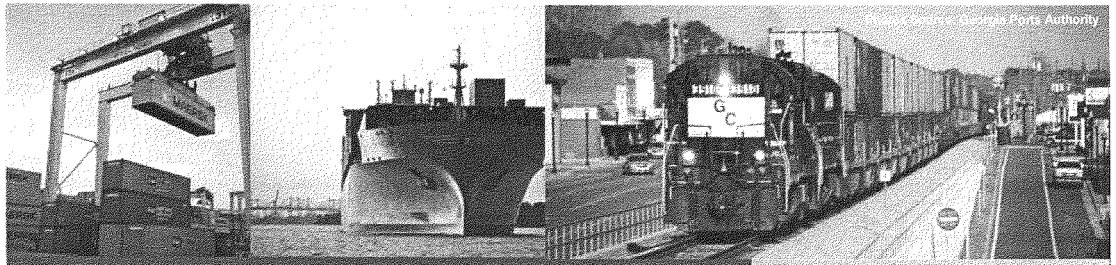


Photo Courtesy: Georgia Ports Authority

PROJECT BENEFITS

- Reduction in harbor transit times and consequent vessel delays.
- Reduced meeting area and tide delays as a result of channel modifications, which reduce congestion within the harbor.
- Able to accommodate supersized cargo ships expected to begin arriving through an expanded Panama Canal.

PRIMARY CHALLENGES

- Available funding (federal plus local) does not currently cover the project cost, extending the project completion date, increasing the total project cost.

GEORGIA MARKET SERVED:

Population (Census, 2015 value)	10,215,000
Employment (BLS, 2015 value)	4,260,000
GDP (BEA, 2014 value, $M)	$ 474,697

STATES EAST OF MISSISSIPPI RIVER MARKET SERVED:

Population (Census, 2015 value)	185,224,000
Employment (BLS, 2015 value)	82,689,000
GDP (BEA, 2014 value, $M)	$ 9,727,377

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 691
Discounted Capital Cost	$ 633
Discounted Benefits	$ 4,431 – 6,330
Net Economic Benefits	$ 3,798 – 5,697
Benefit-Cost Ratio	7.0 – 10.0

Note: All values in 2015 dollars; values were discounted using 3.0% discount rate; O&M excluded from costs.

Houston-Galveston Grade Crossing Improvements

U.S. REGION: **South**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **$2.4 – 3.6 B**
BENEFIT-COST RATIO: **7.0 – 10.0**

Photos Source: Gulf Coast Rail District

PROJECT SPONSORS:

- Gulf Coast Rail District

GULF COAST RAIL DISTRICT
HOUSTON • TEXAS

PROJECT DESCRIPTION

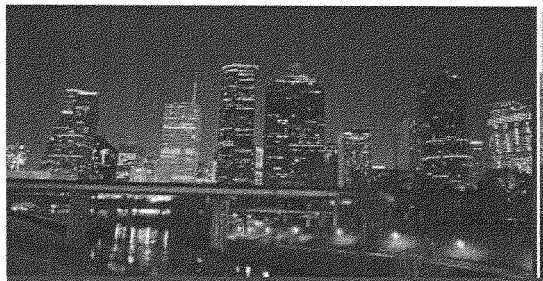
- Rail infrastructure investments included those designed to address congestion at key locations in the 8-county Greater Houston region. Additional investments were proposed to improve the throughput capacity for existing mainline tracks by making investments in yards, switching, and track capacity designed to increase train speeds and improve system operating performance.

CONSIDERATIONS

- Shippers expressed a general dissatisfaction with the quality and quantity of rail infrastructure in the Houston region.
- Although businesses in several sectors are ready to make expansions and investment decisions, they are hesitant due to chronic congestion in specific subdivisions in the rail system.

Sources: (1) Gulf Coast Freight Rail District

Houston-Galveston Grade Crossing Improvements



Photos Source: Gulf Coast Rail District

PROJECT BENEFITS

- Addresses congestion at five of the most significant rail system bottlenecks in the region.
- Extensions and expansions of second main tracks, and extension of the Englewood East yard tracks to increase the receiving capacity for the Englewood Yards.
- New trackage is designed to relieve congestion by allowing trains to pass one another along the highly trafficked Glidden Subdivision.
- Re-routing of about 30 trains from the East Belt to the West Belt, thereby reducing overall train delays.

PRIMARY CHALLENGES

- Funding

TEXAS MARKET SERVED:

Population (Census, 2015 value)	27,469,000
Employment (BLS, 2015 value)	11,807,000
GDP (BEA, 2014 value, $M)	$ 1,641,044

ECONOMIC BENEFITS AND COSTS

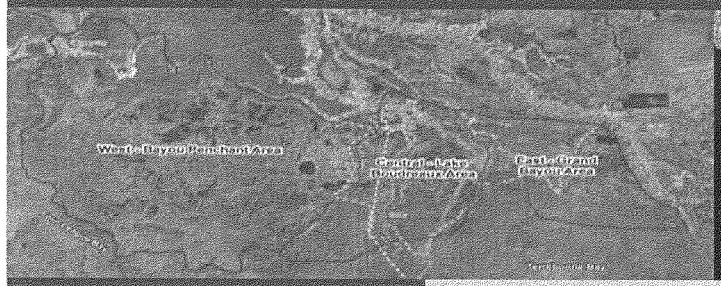
	2015$ (M)
Capital Cost	$ 433
Discounted Capital Cost	$ 402
Discounted Benefits	$ 2,814 – 4,020
Net Economic Benefits	$ 2,412 – 3,618
Benefit-Cost Ratio	7.0 – 10.0

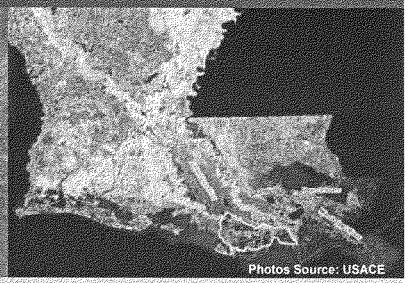
Note: All values in 2015 dollars; values were discounted using 5% discount rate. O&M excluded from costs.

ARTM/MOHNL

U.S. REGION: **South**
PROJECT TYPE: **Water**

NET ECONOMIC BENEFIT: **$1.8 – 2.7 B**
BENEFIT-COST RATIO: **7.0 – 10.0**





Photos Source: USACE

PROJECT SPONSORS:

- Coastal Protection and Restoration Authority
- US Army Corps of Engineers

PROGRAM:

- Louisiana Coastal Area Program

PROJECT DESCRIPTION

- Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of the Houma Navigation Lock (ARTM/MOHNL) will increase freshwater flow into the northern Terrebonne Marshes through repairing banks along the GIWW, enlarging constrictions in the GIWW, and diverting additional Atchafalaya River freshwater into the Bayou Chene/GIWW system.

CONSIDERATIONS

- Natural processes combined with human activities have accelerated wetland loss and ecosystem degradation to the Northern Terrebonne Marshes.
- Loss of wetlands will have negative impacts on essential fish habitats and threatened and endangered species, as well as potential impacts to oil and gas infrastructure and navigable waterways, which currently benefit from protection provided by the wetlands.

Sources: USACE, CPRA

ARTM/MOHNL

Photos Source: USACE

PROJECT BENEFITS

- Restore and maintain ecological integrity, including habitats, communities, and populations of native species.
- Prevent, reduce, and/or reverse future wetland loss.
- Achieve and maintain characteristics of sustainable marsh hydrology.
- Increase sediment and nutrient load to surrounding wetlands.
- Increase residence time of freshwater and reduce salinity levels.

PRIMARY CHALLENGES

- Pending agreement between USACE and the State of Louisiana

LOUISIANA MARKET SERVED:

Population (Census, 2015 value)	4,671,000
Employment (BLS, 2015 value)	1,987,000
GDP (BEA, 2014 value, $M)	$ 251,673

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 332
Discounted Capital Cost	$ 304
Discounted Benefits	$ 2,128 – 3,040
Net Economic Benefits	$ 1,824 – 2,736
Benefit-Cost Ratio	7.0 – 10.0

Note: All values in 2015 dollars; values were discounted using a 7% discount rate; O&M excluded from costs.

Boston Harbor Dredging

U.S. REGION: **Northeast**
PROJECT TYPE: **Ports-Waterways**

NET ECONOMIC BENEFIT: **$1.8 – 2.6 B**
BENEFIT-COST RATIO: **7.0 – 10.0**

Photos Source: Massport

PROJECT SPONSORS:

- Massachusetts Port Authority
- US Army Corps of Engineers

massport

PROJECT DESCRIPTION

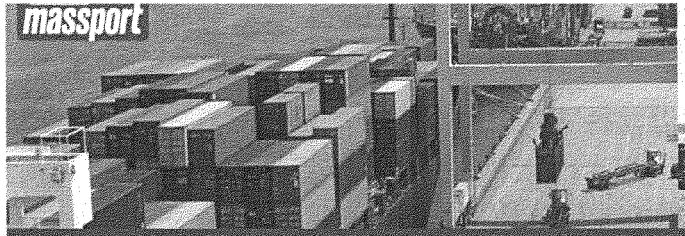
- Widen and deepen main shipping channel to a depth of 47 feet.
- Additional shipping channels in port will be deepened to a depth of 40 feet.

CONSIDERATIONS

- Growth in waterborne shipping of containers and bulk commodities is constrained by lack of adequate channel dimensions, particularly depth, to meet the needs of Massport, its customers, and other terminal operators.
- Port is not able to efficiently accommodate the growing number of large container vessels demanded of world trade.

Sources: USACE, Massachusetts Port Authority

Boston Harbor Dredging



Photos Source: Massport

PROJECT BENEFITS

- Effectively and efficiently accommodating existing and prospective deep-draft vessel traffic in the Port of Boston.
- Minimize the cost of transporting existing cargo volumes and anticipated future increases in cargo volumes to and from New England in an environmentally acceptable and sustainable manner.
- Use of dredged material, particularly the large volume of rock that channel deepening would yield, for habitat creation and enhancement or other purposes.

PRIMARY CHALLENGES

- Available funding (federal plus local) covers design work but not the full capital project cost, extending the project completion date and increasing the final cost to deliver the project.

MASSACHUSETTS MARKET SERVED:

Population (Census, 2015 value)	6,794,000
Employment (BLS, 2015 value)	3,482,000
GDP (BEA, 2014 value, $M)	$ 455,732

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 317
Discounted Capital Cost	$ 294
Discounted Benefits	$ 2,058 – 2,940
Net Economic Benefits	$ 1,764 – 2,646
Benefit-Cost Ratio	7.0 – 10.0

(Note: All values in 2015 dollars; values were discounted using a 3% discount rate. O&M excluded from costs.)

I-35 Trade Corridor

U.S. REGION: **Midwest**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$41.1 – 82.2 B**
BENEFIT-COST RATIO: **4.0 – 7.0**

Photo Source: USDOT

Photo Source: Public Domain

Photo Source: USDOT

PROJECT SPONSORS:

- Texas, Oklahoma, Kansas, Missouri, Iowa, and Minnesota state Departments of Transportation

PROGAM:

- Recapitalization of the National Interstate Highway System

PROJECT DESCRIPTION

- Recommended investment strategy for upgrading the I-35 Corridor from Texas to Minnesota to accommodate future public traffic volumes as allowed by available right of way. Includes maintaining the existing facility to rehabilitate pavements and bridge decks.
- Upgrades bridge structures to maintain integrity and widens I-35 along approximately 65% of the route to meet demand.
- Includes special provisions for truck-only lanes. Connections enhance NAFTA trade between Mexico, the US, and Canada.

CONSIDERATIONS

- I-35 is ideally positioned to be a major route for increasing levels of international trade activity. Project presents a strategy to guide future, potential improvements to I-35.

Courtesy: Lt Nova DOT

I-35 Trade Corridor

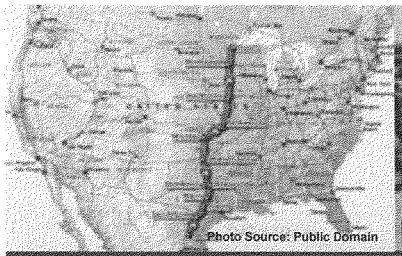


Photo Source: Public Domain

Photo Source: FHWA

PROJECT BENEFITS

- Implementation of improvements along I-35 will improve travel times along the corridor and reduce vehicle operating costs and accident costs.
- The economic impact of the project will support jobs, income, wages, and value added.
- Encourage NAFTA-related trade.

PRIMARY CHALLENGES

- Funding
- Cohesive planning among impacted states

TEXAS, OKLAHOMA, KANSAS, MISSOURI, IOWA, AND MINNESOTA MARKETS SERVED:

Population (Census, 2015 value)	48,989,000
Employment (BLS, 2015 value)	22,060,000
GDP (BEA, 2014 value, $M)	$ 2,735,404

ECONOMIC BENEFITS AND COSTS

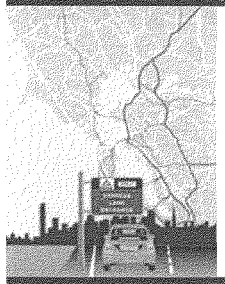
	2015$ (M)
Capital Cost	$ 15,606
Discounted Capital Cost	$ 13,693
Discounted Benefits	$ 54,772 – 95,851
Net Economic Benefits	$ 41,079 – 82,158
Benefit-Cost Ratio	4.0 – 7.0

Note: All values in 2015 dollars; values were discounted using 4.3% discount rate. O&M excluded from costs.

MTC Managed Lanes

U.S. REGION: **West**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$4.8 – 9.6 B**
BENEFIT-COST RATIO: **4.0 – 7.0**



BAY AREA EXPRESS LANES

METROPOLITAN TRANSPORTATION COMMISSION

Photos Source: mtcexpresslanes.org

PROJECT SPONSORS:

- Alameda County Transportation Commission (ACTC)
- Metropolitan Transportation Commission (MTC)
- California Highway Patrol (CHP)
- Caltrans
- Contra Costa Transportation Authority (CCTA)
- Solano Transportation Authority (STA)

PROJECT DESCRIPTION

- The Express Lanes network is comprised of specially-designated highway lanes (HOV, HOT, express toll lanes) throughout the San Francisco Bay Area operated under MTC.
- The mission of Express Lanes is to provide a reliable travel choice, encourage ridesharing and bus ridership, as well as create transparency for customers.

CONSIDERATIONS

- Persistent congestion on Bay Area freeways continues to cause significant delay, emissions, and lost productivity for Bay Area travelers.
- Given current congestion, projected population and job growth, increased travel demand, limited opportunities for system expansion, and scarce transportation funding, the Bay Area must take a harder look at ways to more actively manage the performance of its transportation system, particularly the freeways.

Sources: (1) MTC

MTC Managed Lanes

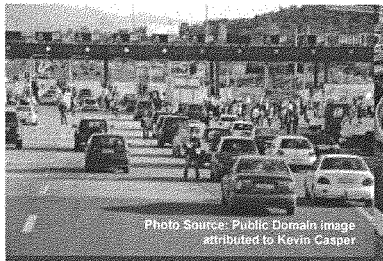


Photo Source: Public Domain image attributed to Kevin Casper

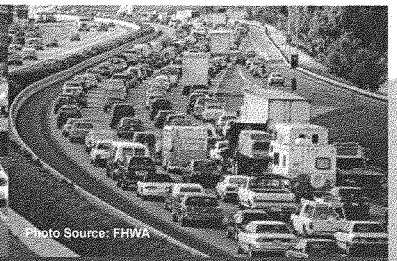


Photo Source: FHWA

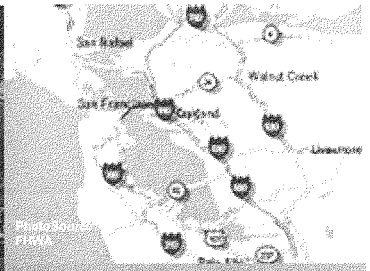


Photo Source: FHWA

PROJECT BENEFITS

- Express/managed lanes are designed to improve overall mobility in the Bay Area.
- Express Lanes are free for qualifying carpools, vanpools, motorcycles and other toll-exempt vehicles.

PRIMARY CHALLENGES

- Funding

SAN FRANCISCO MSA MARKET SERVED:

Population (Census, 2014 value)	4,594,000
Employment (BLS, 2015 value)	2,255,000
GDP (BEA, 2014 value, $M)	$ 411,969

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 2,000
Discounted Capital Cost	$ 1,592
Discounted Benefits	$ 6,368 – 11,114
Net Economic Benefits	$ 4,776 – 9,552
Benefit-Cost Ratio	4.0 – 7.0

Note: All values in 2015 dollars. Values were discounted using a 3% discount rate. O&M excluded from costs.

2nd Avenue Subway – Phase 2

U.S. REGION: **Northeast**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **$11.1 – 33.2 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photos Source: MTA

PROJECT SPONSORS:

- New York MTA
- Federal Transit Administration

PROJECT DESCRIPTION

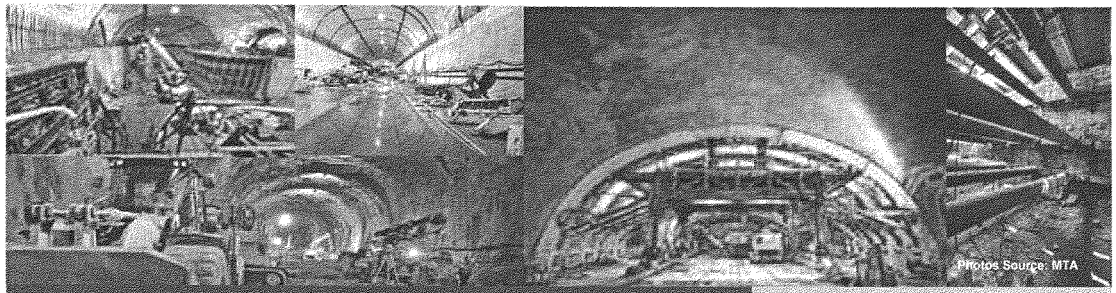
- Extension of the 2nd Avenue Subway in New York City from 125th Street to Wall Street
- Builds on the Phase I investment which is substantially complete.

CONSIDERATIONS

- The area served by the 2nd Avenue Subway is the densest, highest value commercial corridor in the nation.
- The existing Lexington Line provides north-south mobility and operates at full capacity during peak periods. There is no ability for the transit system to support additional growth.
- Without the ability of New York's transit system to accommodate additional growth, the competitiveness of the nation's largest urban economy will erode.

Sources: (1) City University of New York

2nd Avenue Subway – Phase 2



Photos Source: MTA

PROJECT BENEFITS

- Will decrease crowding on the adjacent Lexington Avenue Line.
- Improved access to labor and businesses.
- Reduce travel times for those on the far east side of Manhattan and those traveling from the east side to west Midtown.

PRIMARY CHALLENGES

- Funding for Phase 2

NEW YORK CITY MSA MARKET SERVED:

Population (Census, 2014 value)	20,093,000
Employment (BLS, 2015 value)	9,279,000
GDP (BEA, 2014 value, $M)	$ 1,558,518

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 12,600
Discounted Capital Cost	$ 11,056
Discounted Benefits	$ 22,112 – 44,224
Net Economic Benefits	$ 11,056 – 33,168
Benefit-Cost Ratio	2.0 – 4.0

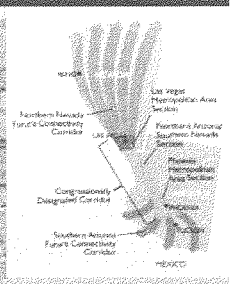
Note: All values in 2015 dollars. Values were discounted using a 3% discount rate. CSMP excluded from costs.

I-11 Corridor

U.S. REGION: **West**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$9.7 – 29.1 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photos Source: AZDOT



PROJECT SPONSORS:

- Arizona Department of Transportation
- Nevada Department of Transportation

PROJECT DESCRIPTION

- Bi-state Corridor interstate highway to link Phoenix, AZ and Las Vegas, NV, as well as new routes north and south of both cities via the potential Intermountain West Corridor.

CONSIDERATIONS

- This investment would address ongoing growth in the regional economy, while providing the Intermountain West with needed north-south transportation capacity to expand its manufacturing capabilities with Mexico and Canada.
- Phoenix and Las Vegas are the largest neighboring cities not connected by an interstate. This connection would support the growth of the Megaregions in the Southwest.

Sources: (1) Nevada and Arizona DOTs

I-11 Corridor

Photo: Source: AZDOT

PROJECT BENEFITS

- Travel time savings and vehicle operating cost savings result from improved reliability and changes in average network speeds with the project.
- The I-11 and Intermountain West Corridor may result in new trips that would not have otherwise been made. Induced trips create both travel time and vehicle operating cost impacts, as well as increased economic and social activity.
- Safety benefits occur as traffic switches to the safer Interstate level road.
- Crash reduction factors for new roadway improvements as well as changes in VMT results in safety benefits.
- Due to more reliable transport times and lower transport costs as a result of the I-11 and Intermountain West Corridor improvements, local manufacturers may choose to hold less inventory and reduce overhead costs. As a result, the manufacturing and machinery industries may become more competitive or profitable, resulting in freight logistics benefits.

PRIMARY CHALLENGES

- Funding

ARIZONA AND NEVADA MARKETS SERVED:

Population (Census, 2015 value)	9,719,000
Employment (BLS, 2015 value)	3,878,000
GDP (BEA, 2014 value, $M)	$ 421,592

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 11,370
Discounted Capital Cost	$ 9,699
Discounted Benefits	$ 19,398 – 38,796
Net Economic Benefits	$ 9,699 – 29,097
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars. Values were discounted using a 3% discount rate. O&M excluded from costs.

Morganza to the Gulf

U.S. REGION: **South**
PROJECT TYPE: **Water**

NET ECONOMIC BENEFIT: **$9.2 – 27.5 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

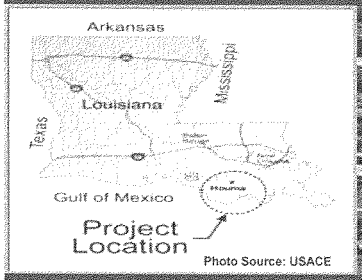


Photo Source: USACE

Source: Louisiana Recovery Authority

PROJECT SPONSORS:

- Louisiana Coastal Protection and Restoration Authority Board
- Terrebonne Levee and Conservation District
- US Army Corps of Engineers

PROJECT DESCRIPTION

- About 98-miles of earthen levee, 23 water control structures, a lock complex in the Houma Navigational Canal, an adjoining floodgate, and a dam closure.
- Designed to provide hurricane and storm damage reduction benefits while ensuring navigational passage and tidal exchange.
- Located about 60 miles southwest of New Orleans, LA.

CONSIDERATIONS

- Extreme deterioration of coastal marshes have steadily increased storm surge inundation over time, resulting in greater damage and safety concerns in the vicinity of Houma, LA.
- The area is also significantly affected by tides emanating from the Gulf of Mexico.

Source: USACE

Morganza to the Gulf

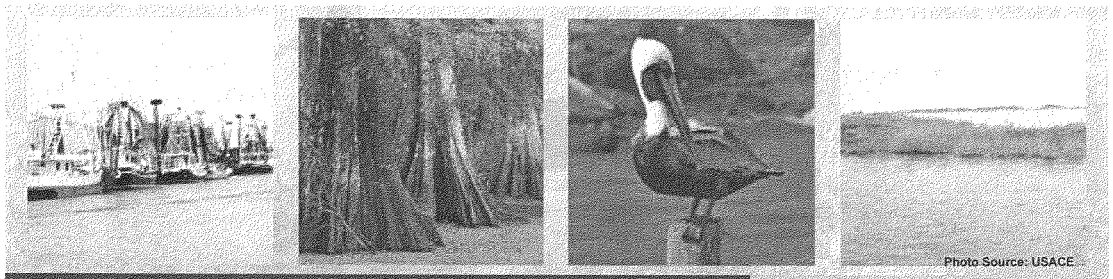


Photo Source: USACE

PROJECT BENEFITS

- Safety of more than 150,000 people and 1,700 square miles of farmlands, industrial and residential areas.
- Protect against tidal and storm surge up to a Category 3 hurricane.
- Provides a safe harbor for fishermen in a storm event.
- Beneficial to marshes and wetlands in the Terrebonne Basin.
- Floodgates would reduce storm damage during tropical storms and allow navigable waterways to remain open during non-storm conditions.

PRIMARY CHALLENGES

- While state and local funds have been used to construct interim features, additional funding is needed to complete the project.
- No Federal funds have been appropriated for construction.

HOUMA – BAYOU CANE – THIBODAUX MSA MARKET SERVED:

Population (Census, 2015 value)	211,000
Employment (BLS, 2015 value)	100,000
GDP (BEA, 2014 value, $M)	$ 13,198

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 10,746
Discounted Capital Cost	$ 9,166
Discounted Benefits	$ 18,332 – 36,664
Net Economic Benefits	$ 9,166 – 27,498
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars; values were discounted using a 5% discount rate. O&M excluded from costs.

I-69 Extension

U.S. REGION: **South**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$6.8 – 20.3 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

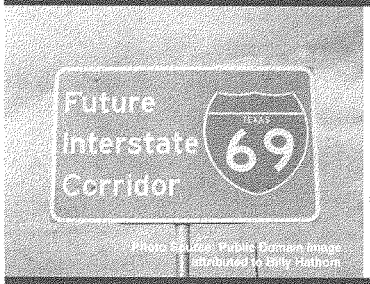


Photo Source: Public Domain image attributed to Tally Hathorn

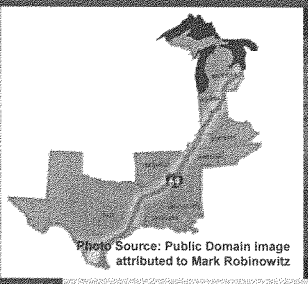


Photo Source: Public Domain image attributed to Mark Robinowitz

Photo Source: FHWA

PROJECT SPONSORS:

- Indiana Department of Transportation
- Kentucky Department of Transportation
- Mississippi Department of Transportation
- Arkansas Department of Transportation
- Louisiana Department of Transportation
- Texas Department of Transportation

PROJECT DESCRIPTION

- Extension of I-69 from Indianapolis to the Mexico border through Indiana, Kentucky, Tennessee, Mississippi, Arkansas, Louisiana, and Texas. Connection to the existing I-69 in Michigan will provide access for the auto markets between Detroit and Mexico.

CONSIDERATIONS

- The corridor was designated a High Priority Corridor of National Significance in ISTEA, is a North American trade route, an international trade route, and a NAFTA corridor. Congress has designated the new interstate to be I-69.
- The corridor upgrade to interstate designation will improve international and interstate trade, and facilitate economic development.
- Better connections are needed between auto parts distributors in Mexico and auto manufacturing along the potential corridor.

Sources: (1) Wilbur Smith and HNTB

I-69 Extension

Photo Source: Public Domain image attributed to MUTCD

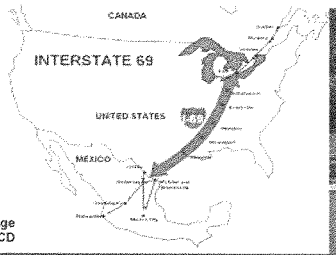


Photo Source: Public Domain image attributed to Chicago Independent Media Center

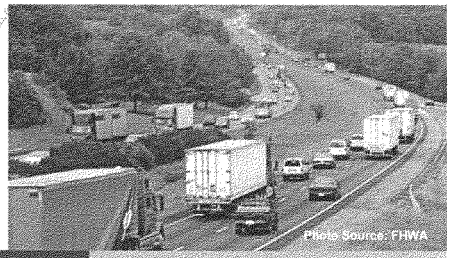


Photo Source: FHWA

PROJECT BENEFITS

- Improves international and interstate movement of freight.
- Improves capacity to meet current and future needs.
- Facilitates economic development and enhances domestic and international growth through efficient and flexible transportation.
- Facilitates connections to intermodal facilities and major ports along the corridor.
- Facilitates the safe and efficient movement of people and goods resulting in improved reliability and time savings and vehicle operating cost savings.
- Directly connects urban areas of Indianapolis, Evansville, Memphis, Shreveport/Bossier City, Houston, Laredo, Brownsville, and the Lower Rio Grande Valley with an interstate.

PRIMARY CHALLENGES

- Funding
- Coordination among states

INDIANA, KENTUCKY, TENNESSEE, MISSISSIPPI, ARKANSAS, LOUISIANA, AND TEXAS MARKETS SERVED:

Population (Census, 2015 value)	55,755,000
Employment (BLS, 2015 value)	22,807,000
GDP (BEA, 2014 value, $M)	$ 2,815,783

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 10,500
Discounted Capital Cost	$ 6,775
Discounted Benefits	$ 13,550 – 27,100
Net Economic Benefits	$ 6,775 – 20,325
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars. Values were discounted using a 7% discount rate. O&M excluded from costs.

Puget Sound Gateway – Phase 2

U.S. REGION: **National**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$2.6 – 7.9 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photos Source: WSDOT

Washington State Department of Transportation

PROJECT SPONSORS:

- Washington State Department of Transportation

PROJECT DESCRIPTION

- The SR 509, I-5 and SR 167 Puget Sound Gateway Project in Seattle would relieve traffic congestion and improve freight mobility by completing the long-planned SR 167 and SR 509 corridor connections to I-5.
- Provides improved connections to the Port of Seattle and the Port of Tacoma.
- Builds on substantial Phase I investment in corridor.

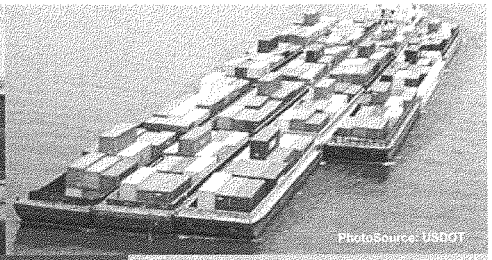
CONSIDERATIONS

- The major goals of this project are to provide a significant time savings to peak-hour travel time between Seattle and Tacoma, to improve access to SeaTac International Airport, and to improve freight mobility within the state's most traveled freight corridor.

Sources: (1) WSDOT

Puget Sound Gateway – Phase 2

Photo Source: WSDOT



PhotoSource: USDOT

PROJECT BENEFITS

- Improves regional mobility and relieves traffic congestion on local roads and highways by providing new and more efficient travel options, improving overall system performance for freight, commuters and transit.
- Completes critical freight links between the ports of Seattle and Tacoma and key distribution centers, warehouses, and industrial areas in King and Pierce counties.
- Provides direct access to Seattle-Tacoma International Airport from the south, better connecting the state's hub airport to I-5 and improving movement of air cargo.
- Provides quantifiable travel time savings, vehicle operating cost savings, safety savings, air quality/global warming savings, and noise/external cost savings.

PRIMARY CHALLENGES

- Funding

SEATTLE MSA MARKET SERVED:

Population (Census, 2014 value)		3,671,000
Employment (BLS, 2015 value)		1,902,000
GDP (BEA, 2014 value, $M)	$	300,827

ECONOMIC BENEFITS AND COSTS

		2015$ (M)
Capital Cost	$	3,000
Discounted Capital Cost	$	2,632
Discounted Benefits	$	5,264 – 10,528
Net Economic Benefits	$	2,632 – 7,896
Benefit-Cost Ratio		2.0 – 4.0

Note: All values in 2015 dollars. Values were discounted using a 3% discount rate. O&M excluded from costs.

I-5 Columbia River Crossing

U.S. REGION: **West**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$2.5 – 7.5 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photos Source: Columbia River Crossing Coalition

PROJECT SPONSORS:

- Washington State Department of Transportation
- Oregon State Department of Transportation
- Federal Highway Administration
- Federal Transit Administration
- With input from Metro (the metropolitan planning organization in Portland), Southwest Washington Regional Transportation Council, TriMet, C-TRAN, and the cities of Portland and Vancouver

PROJECT DESCRIPTION

- I-5 is the only continuous north/south interstate highway on the West Coast, providing a commerce link for the United States, Canada, and Mexico. The segment crossing the Columbia River between Portland and Vancouver serves two international ports, 5 major highways and influences the operating performance of this international corridor. Light rail is proposed on the bridge to connect Vancouver, WA to Portland's rail network.

CONSIDERATIONS

- The existing I-5 crossing of the Columbia River consists of two side-by-side bridges, built four decades apart. The crossing, which served 30,000 vehicles per day in the 1960s, now carries more than 130,000 automobiles, buses, and trucks each weekday. The bridges are stretched far beyond capacity—the hours of stop-and-go traffic grow every year.
- The existing I-5 bridges do not meet current seismic standards.

Sources: (1) Columbia River Crossing Economic Benefits Analysis

I-5 Columbia River Crossing

Photo Source: Public Domain

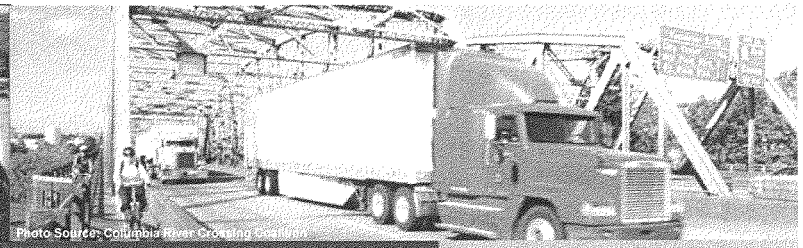


Photo Source: Columbia River Crossing Coalition

PROJECT BENEFITS

- Traveler savings for both passengers and truck freight from improved system efficiency impacts include savings in travel time, reliability, vehicle operating costs, safety and emissions.
- Market access impacts include positive changes to freight delivery markets, logistics, labor markets, and business productivity.

PRIMARY CHALLENGES

- Disagreement over need for light rail system
- Funding
- Disagreements among multiple stakeholders and state DOTs
- Competition from the nearby I-205 bridge

WASHINGTON AND OREGON MARKETS SERVED:

Population (Census, 2015 value)		11,199,000
Employment (BLS, 2015 value)		4,947,000
GDP (BEA, 2014 value, $M)	$	635,684

ECONOMIC BENEFITS AND COSTS

		2015$ (M)
Capital Cost	$	2,712
Discounted Capital Cost	$	2,484
Discounted Benefits	$	4,968 – 9,936
Net Economic Benefits	$	2,484 – 7,452
Benefit-Cost Ratio		2.0 – 4.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate; O&M excluded from costs

Fargo-Moorhead Metro Flood Control

U.S. REGION: **Midwest**
PROJECT TYPE: **Water**

NET ECONOMIC BENEFIT: **$1.7 – 5.0 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photos Source: USACE

PROJECT SPONSORS:

- City of Fargo, ND
- City of Moorhead, MN
- US Army Corps of Engineers

PROJECT DESCRIPTION

- Construct retention dams and 36 mile diversion channel around Fargo-Moorhead to reduce risk of flooding.
- Incorporate non-structural measure to reduce flood risk to selected residential and nonresidential structures.

CONSIDERATIONS

- Average annual flood damages are estimated at more than $195 million.
- Red River has exceeded flood stage in 49 of the past 110 years.
- Significant emergency measures have been implemented multiple times to prevent catastrophic flooding.

Source: USACE

Fargo-Moorhead Metro Flood Control

Photo Source: USACE

PROJECT BENEFITS

- Risk of a catastrophic flood event would be reduced for the Fargo-Moorhead Metropolitan Area.
- Maintain manufacturing base of region (many companies stated they would relocate outside of the United States if facilities flooded).
- Reduce significant costs incurred during emergency flood fights.
- Protect vibrant local economy, which generates $4.35 billion in annual non-farming wages and over $2.77 billion in annual taxable sales along with $14 billion in property value.

PRIMARY CHALLENGES

- Available funding (federal and local) sources are not sufficient to complete the project.
- The Minnesota Department of Natural Resources has denied a permit application for the proposed Fargo-Moorhead Flood Risk Management Project.

FARGO MSA MARKET SERVED:

Population (Census, 2015 value)	228,000
Employment (BLS, 2015 value)	140,000
GDP (BEA, 2014 value, $M)	$ 15,026

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 1,897
Discounted Capital Cost	$ 1,665
Discounted Benefits	$3,330 – 6,660
Net Economic Benefits	$1,665 – 4,995
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars; values were discounted using 4.3% discount rate; O&M excluded from costs.

Sabine Neches Waterway

U.S. REGION: **South**
PROJECT TYPE: **Ports-Waterways**

NET ECONOMIC BENEFIT: **$1.2 – 3.5 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photos Source: Sabine Neches Navigation District

PROJECT SPONSORS:

- Sabine Neches Navigation District
- US Army Corps of Engineers

SABINE • NECHES
NAVIGATION DISTRICT
Our commitment runs deep

PROJECT DESCRIPTION

- Deepen and widen the Sabine-Neches Waterway (SNWW) along the border of Texas and Louisiana to allow for larger vessels and lessen congestion.

CONSIDERATIONS

- Navigational safety on the SNWW is a concern given the large traffic base, the number of crude oil and LNG vessels, and dangerous cargo transits.
- Congestion is increased during times when the SNWW serves an important military function as one of the busiest ports for military cargo in the world.
- The most significant trend adversely affecting the study area is the high rate of wetland loss that has occurred over the last century.

Sources: USACE, Sabine Neches Navigation District

Sabine Neches Waterway

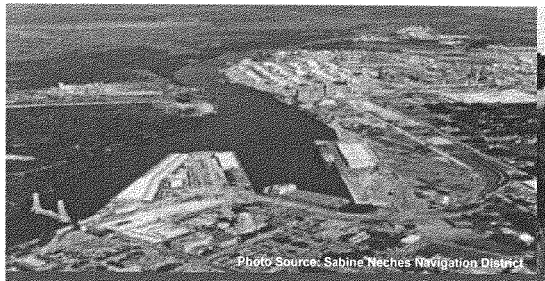


Photo Source: Sabine Neches Navigation District

Photo Source: USACE

PROJECT BENEFITS

- Improve the navigational efficiency along the SNWW waterway.
- Improve safety for all vessels.
- Maintain the ecological value of coastal and estuarine resources within the project area.
- National security.

PRIMARY CHALLENGES

- Available funding (federal plus local) does not currently cover the project cost, extending the project completion date, increasing the total project cost.

TEXAS AND LOUISIANA MARKET SERVED:

Population (Census, 2015 value)	32,140,000
Employment (BLS, 2015 value)	13,794,000
GDP (BEA, 2014 value, $M)	$ 1,892,716

ECONOMIC BENEFITS AND COSTS

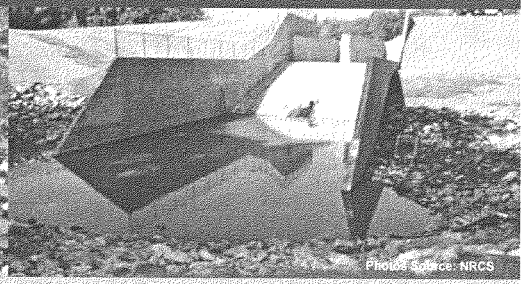
	2015$ (M)
Capital Cost	$ 1,262
Discounted Capital Cost	$ 1,173
Discounted Benefits	$2,346 – 4,692
Net Economic Benefits	$1,173 – 3,519
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate; O&M excluded from costs.

Watershed Rehabilitation Program

U.S. REGION: **National**
PROJECT TYPE: **Water**

NET ECONOMIC BENEFIT: **$1.1 – 3.3 B**
BENEFIT-COST RATIO: **2.0 – 4.0**



Photos Source: NRCS

PROJECT SPONSORS:

- Local sponsors and dam owners located across the country
- Natural Resource Conservation Service

PROJECT DESCRIPTION

- Rehabilitate aging dams that are reaching the end of their 50-year design lives and/or have been reclassified as high hazard due to downstream development.

CONSIDERATIONS

- Many of these dams are classified as high hazard with a potential for loss of life if the dam should fail.
- During the past 20 years, more than 4,300 dams reached or exceeded their 50-year design life.
- Over the next 10 years, another 3,500 dams will have met or exceeded their design life.

Source: NRCS

Watershed Rehabilitation Program

Photo Source: NRCS

PROJECT BENEFITS

- Rehabilitated dams would continue to provide flooding and erosion damage reduction, improved wildlife habitat, recreation, and improved water quality through sediment and erosion control.
- Creates rural economic growth and job opportunities.
- Rehabilitated dams would reduce potential for catastrophic failure and loss of life.

PRIMARY CHALLENGES

- Funding

NATIONAL MARKET SERVED:

Population (Census, 2015 value)	321,419,000
Employment (BLS, 2015 value)	141,958,000
GDP (BEA, 2014 value, $M)	$ 17,232,618

ECONOMIC BENEFITS AND COSTS

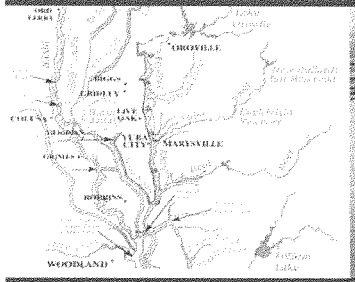
	2015$ (M)
Capital Cost	$ 1,200
Discounted Capital Cost	$ 1,099
Discounted Benefits	$2,198 – 4,396
Net Economic Benefits	$1,099 – 3,297
Benefit-Cost Ratio	2.0 – 4.0

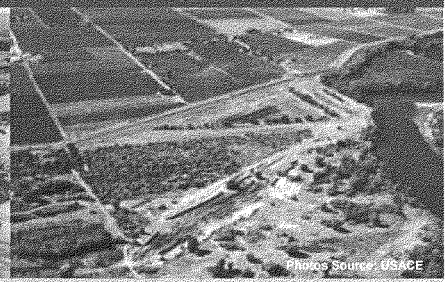
Note: All values in 2015 dollars. Values were discounted using 3.1% discount rate. O&M excluded from costs.

Sutter Basin

U.S. REGION: **West**
PROJECT TYPE: **Water**

NET ECONOMIC BENEFIT: **$0.6 – 1.9 B**
BENEFIT-COST RATIO: **2.0 – 4.0**





Photos Source: USACE

PROJECT SPONSORS:

- State of California
- Sutter County
- Central Valley Flood Protection Board
- Sutter-Butte Flood Control Agency
- US Army Corps of Engineers

PROJECT DESCRIPTION

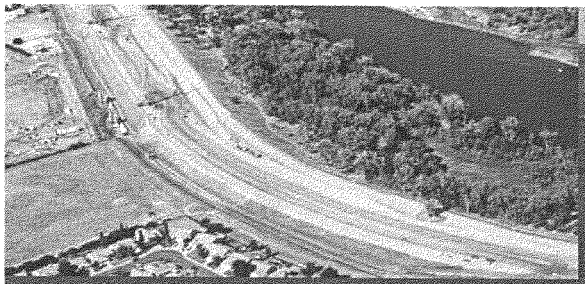
- Strengthen 41.4 miles of existing project levees to reduce risk of flood damage.
- Restore the ecosystem for the communities of Yuba City, Live Oak, Gridley, and Biggs.

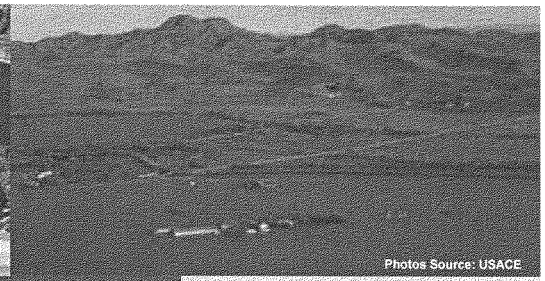
CONSIDERATIONS

- The existing project levees within the study area are at risk of failure.
- The unique geography, small number of transportation corridors, and population distribution cause ineffective or hazardous evacuation conditions.
- Economically disadvantaged community with a vulnerable senior population.

Sources: USACE

Sutter Basin





Photos Source: USACE

PROJECT BENEFITS

- Five additional evacuation routes.
- Reduce the risk of flooding for 88,000 people.
- Reduce the risk of flooding to 27 critical infrastructure facilities.
- Increase developable land by about 30,000 acres.
- Increase recreational resources.

PRIMARY CHALLENGES

- USACE policy restricts woody vegetation on Federal project levees, consequently, about 20 acres of riparian vegetation may require removal to comply with the policy, resulting in effects on fish and wildlife habitat and social values like recreation and aesthetics. This policy has led to an environmental dispute with those who would preserve the vegetation and question the necessity of the removal.

YUBA-SUTTER MSA MARKET SERVED:

Population (Census, 2014 value)	170,000
Employment (BLS, 2015 value)	41,000
GDP (BEA, 2014 value, $M)	$ 5,472

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 709
Discounted Capital Cost	$ 631
Discounted Benefits	$1,262 – 2,524
Net Economic Benefits	$ 631 – 1,893
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate; O&M excluded from costs.

Jacksonville Harbor Dredging

U.S. REGION: **South**
PROJECT TYPE: **Ports-Waterways**

NET ECONOMIC BENEFIT: **$0.6 – 1.8 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photo Source: USACE

PROJECT SPONSORS:

- Jacksonville Port Authority
- US Army Corps of Engineers

US Army Corps of Engineers

PROJECT DESCRIPTION

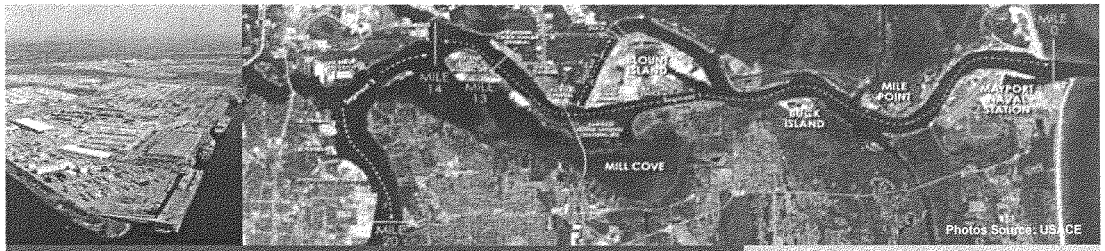
- Increase the depth of the existing channel along the St. Johns River from its current depth of 40 feet to a maximum depth of 47 feet.

CONSIDERATIONS

- The Port of Jacksonville is mentioned in the President's "We Can't Wait" initiative, which works to expedite the permitting and review process.
- Government and business leaders at the state and local level along with the local sponsor have expressed interest in growing the local economy by making Jacksonville a hub for logistical activity.
- Super Post-Panamax Vessels (PPX2) vessels are displacing less efficient vessels and require a deeper channel.

Sources: USACE, Jacksonville Port Authority

Jacksonville Harbor Dredging



Photos Source: USACE

PROJECT BENEFITS

- Allow for larger vessels to access the channel, therefore reducing transportation costs and providing increased navigational safety, while avoiding or minimizing impacts to environmental resources.
- Deeper channels can accommodate an increase in the TEU weight, which means that the cargo is relatively denser. Denser cargoes imply that more freight can be stored per unit volume.
- The increase in forecasted cargo requires a greater number of port calls in the future, and greater port traffic in the future means greater cost savings with deeper channel depths.
- Port able to accommodate supersized cargo ships expected to begin arriving through an expanded Panama Canal.

PRIMARY CHALLENGES

- Available funding does not currently cover the project cost, extending the project completion date, increasing the total project cost, and delaying benefits.

FLORIDA MARKET SERVED:

Population (Census, 2015 value)	20,271,000
Employment (BLS, 2015 value)	8,075,000
GDP (BEA, 2014 value, $M)	$ 838,939

STATES EAST OF MISSISSIPPI RIVER MARKET SERVED:

Population (Census, 2015 value)	185,224,000
Employment (BLS, 2015 value)	82,689,000
GDP (BEA, 2014 value, $M)	$ 9,727,377

ECONOMIC BENEFITS AND COSTS

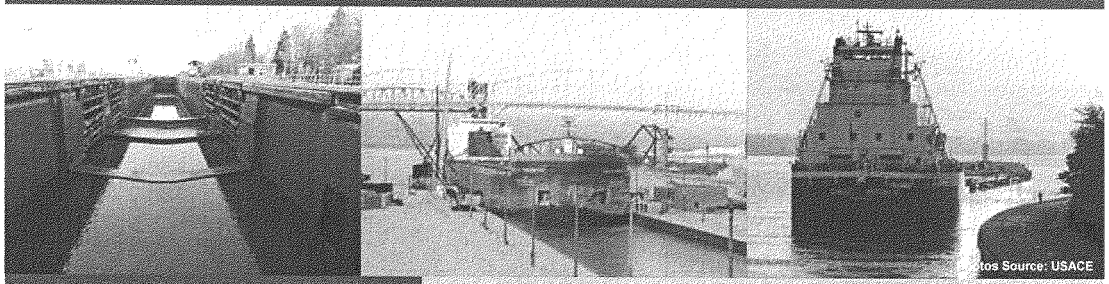
	2015$ (M)
Capital Cost	$ 673
Discounted Capital Cost	$ 616
Discounted Benefits	$1,232 – 2,462
Net Economic Benefits	$ 616 – 1,848
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars. Values were discounted using a 3% discount rate. O&M excluded from costs.

Soo Locks Modernization

U.S. REGION: **Midwest**
PROJECT TYPE: **Ports-Waterways**

NET ECONOMIC BENEFIT: **$0.6 – 1.7 B**
BENEFIT-COST RATIO: **2.0 – 4.0**



Photos Source: USACE

PROJECT SPONSOR:

- US Army Corps of Engineers

US Army Corps of Engineers

PROJECT DESCRIPTION

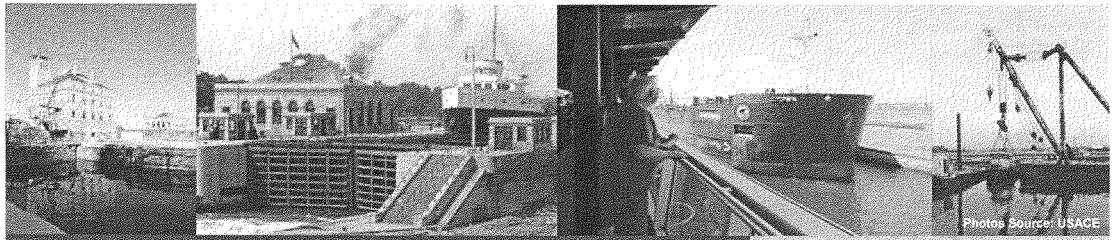
- Rehabilitate or construct second lock for the Poe Lock at the Soo Lock system. These facilities connect the Great Lakes in Michigan, permitting shippers in the western portion of the Great Lakes to access the St. Lawrence Seaway and use the lakes for commercial shipping.

CONSIDERATIONS

- More than 60% of the current U.S. and Canadian fleet is restricted by size to the Poe Lock.
- Any type of service disruption or closure may result in delays to vessel transit.
- Closures of the ageing Poe Lock are expected to increase.
- In the event of a closure (short or long term) of the Poe Lock, there may not be viable alternatives to transporting the more than 40 million tons of iron ore and coal to U.S. manufacturers along the Great Lakes.

Source: USACE

Soo Locks Modernization


Photos Source: USACE

PROJECT BENEFITS

- Increased reliability, fewer outages and less delay would allow shippers to move more tonnage during the shipping season with greater efficiency and fewer emissions.
- Enhanced reliability of the locks would lower the operators' risk profile to prospective lenders. This would make lenders more inclined to finance the operators' capital investments (e.g., fleet improvements, infrastructure, plant operations).
- Other factors such as Canadian vessel movements, commodities, and outages from additional lock components, can be expected to further increase benefits.
- Federal guidance (followed by the US Army Corps of Engineers) does not fully capture impacts to the nation for each closure of the Poe Lock.

PRIMARY CHALLENGES

- Available funding (federal plus local) does not currently cover the project cost, extending the project completion date, increasing the total project cost.

MICHIGAN MARKET SERVED:

Population (Census, 2015 value)	9,923,000
Employment (BLS, 2015 value)	4,265,000
GDP (BEA, 2014 value, $M)	$ 448,244

GREAT LAKE STATES MARKET SERVED:

Population (Census, 2015 value)	46,787,000
Employment (BLS, 2015 value)	21,515,000
GDP (BEA, 2014 value, $M)	$ 2,368,286

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 626
Discounted Capital Cost	$ 582
Discounted Benefits	$1,164 – 2,328
Net Economic Benefits	$ 582 – 1,746
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars; values were discounted using a 4% discount rate. O&M excluded from costs.

Long Bridge

U.S. REGION: **South**
PROJECT TYPE: **Railway**

NET ECONOMIC BENEFIT: **$0.5 – 1.5 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

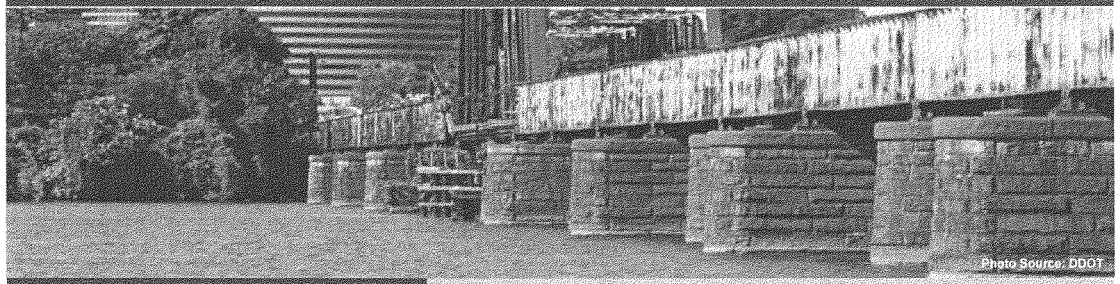


Photo Source: DDOT

PROJECT SPONSORS:

- Virginia Railway Express
- Virginia Department of Transportation
- District Department of Transportation
- CSX
- Amtrak

PROJECT DESCRIPTION

- The Long Bridge is an important element of the District of Columbia transportation infrastructure and a critical component in the national system of railroads. It is the only railroad crossing of the Potomac River east of Harpers Ferry, West Virginia and the only railroad crossing directly connecting the Commonwealth of Virginia and the District.
- Today the bridge carries local, regional, and national freight traffic, along with regional and longer-distance or intercity passenger rail traffic and commuter rail traffic.

CONSIDERATIONS

- The volume of rail traffic on the bridge is growing as more local commuter trains and regional trains are added to the ever-increasing number of freight and intercity passenger trains, pushing the aged bridge structure to the limits of its functional capacity and threatening the District and Northern Virginia with gridlock.

Source: Long Bridge 2014 TIGER Application

Long Bridge

Photos Source: DDOT

PROJECT BENEFITS

- A new four-track Long Bridge would create the bridge capacity needed to accommodate project growth in VRE, Amtrak, and freight traffic and offer significant time savings for these passengers and goods.
- Time savings translate into person hours saved for rail passengers, highway users (if future demand for commuter rail service cannot be accommodated with a new bridge), operating cost savings for both passenger and freight operators, inventory savings for freight shippers, and reduced vehicle miles traveled (VMT) in an already congested Washington, D.C. MSA.

PRIMARY CHALLENGES

- Funding

WASHINGTON, D.C. MSA MARKET SERVED:

Population (Census, 2014 value)	6,034,000
Employment (BLS, 2015 value)	2,581,000
GDP (BEA, 2014 value, $M)	$ 471,584

ECONOMIC BENEFITS AND COSTS

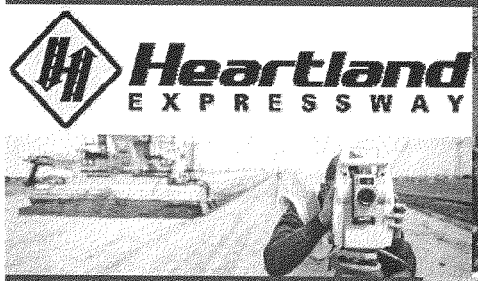
	2015$ (M)
Capital Cost	$ 575
Discounted Capital Cost	$ 511
Discounted Benefits	$ 1,022 – 2,044
Net Economic Benefits	$ 511 – 1,533
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars; values were discounted using 4.5% discount rate. O&M excluded from costs.

Heartland Expressway

U.S. REGION: **Midwest**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$0.4 – 1.2 B**
BENEFIT-COST RATIO: **2.0 – 4.0**



Photos Source: NDOR

PROJECT SPONSORS:

- Nebraska Department of Roads
- Colorado Department of Transportation
- Wyoming Department of Transportation
- South Dakota Department of Transportation

PROJECT DESCRIPTION

- The Heartland Expressway is a key portion of the larger Ports-to-Plains Corridor that extends from Mexico to Canada. Approximately 200 miles of the Heartland Expressway's 498 miles is located within Nebraska's borders.

CONSIDERATIONS

- Fulfillment of the legislative intent of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which calls for the development of High Priority Corridors on the National Highway System
- The lack of north-south highways contributes to increasingly severe traffic congestion, especially in Colorado, and contributes to homeland security issues involving defense mobility.

Source: (1) NDOR

Heartland Expressway

Photos Source: NDOR

PROJECT BENEFITS

- Improves the efficiency of commerce and travel by providing for increased transportation demand resulting from new regional sources of energy development, expanding agricultural markets, and commercial development
- Increases intermodal transportation by improving links between roadway, railway and airport facilities
- Enhances safety through modifications that better enable passenger cars and oversize trucks to share the road
- Saves travel times for existing and diverted corridor users

PRIMARY CHALLENGES

- Funding

NEBRASKA MARKET SERVED:

Population (Census, 2015 value)	1,896,000
Employment (BLS, 2015 value)	1,002,000
GDP (BEA, 2014 value, $M)	$ 111,007

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 568
Discounted Capital Cost	$ 414
Discounted Benefits	$ 828 – 1,656
Net Economic Benefits	$ 414 – 1,242
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars. Values are discounted using a 3% discount rate. O&M excluded from costs.

Corpus Christi Ship Channel

U.S. REGION: **South**
PROJECT TYPE: **Ports-Waterways**

NET ECONOMIC BENEFIT: **$0.3 – 1.0 B**
BENEFIT-COST RATIO: **2.0 – 4.0**

Photos Source: Port Corpus Christi

PROJECT SPONSORS:

- The Port of Corpus Christi Authority
- US Army Corps of Engineers

US Army Corps of Engineers®

PROJECT DESCRIPTION

- Deepen existing ship channel to a depth of 52 feet and widen it to 530 feet to accommodate larger vessels.

CONSIDERATIONS

- More energy companies are trying to reduce costs by using larger cargo vessels, placing more pressure on the nation's 5th largest port to deepen and widen the existing ship channel.
- Periodic dredging of the La Quinta Channel Extension Deepening is needed to maintain the channel to its authorized depth to provide for safe and efficient navigation of commercial vessels.
- A record 8,528 vessels passed through the port in 2014.

Sources: USACE, The Port of Corpus Christi Authority

Corpus Christi Ship Channel

Photo Source: Port Corpus Christi

PROJECT BENEFITS

- Provide channel access to a proposed multi-purpose dock and container handling facility.
- Barge lanes and a deeper channel will increase maritime safety and reduce costly vessel delays, leading to a reduction in transportation costs.
- The ecosystem restoration components will protect and enhance several important habitats. In addition, the improvements include constructing approximately 1,000 acres of shallow water habitat using dredged material.

PRIMARY CHALLENGES

- Congressional reauthorization of the project may be required before construction of the Main Channel and Barge Lanes Elements of the Corpus Christi Ship Channel project can commence. The process for moving forward is in negotiation.
- Available funding (federal plus local) does not currently cover the project cost, extending the project completion date, increasing the total project cost and delaying benefits.

TEXAS MARKET SERVED:

Population (Census, 2015 value)	27,469,000
Employment (BLS, 2015 value)	11,807,000
GDP (BEA, 2014 value, $M)	$ 1,641,044

TX, OK, AR, LA MARKETS SERVED:

Population (Census, 2015 value)	39,029,000
Employment (BLS, 2015 value)	16,669,000
GDP (BEA, 2014 value, $M)	$ 2,195,925

ECONOMIC BENEFITS AND COSTS

	2015$ ($M)
Capital Cost	$ 358
Discounted Capital Cost	$ 328
Discounted Benefits	$ 656 – 1,312
Net Economic Benefits	$ 328 – 984
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate. O&M reduced from costs.

Truckee River

U.S. REGION: **West**
PROJECT TYPE: **Water**

NET ECONOMIC BENEFIT: **$307 – 921 M**
BENEFIT-COST RATIO: **2.0 – 4.0**

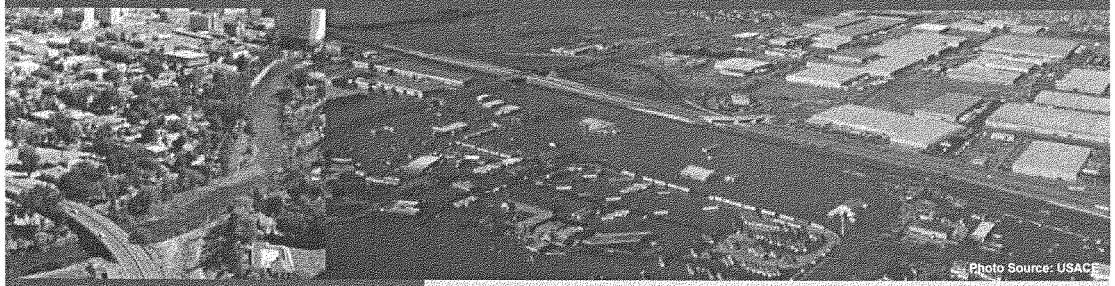


Photo Source: USACE

PROJECT SPONSORS:

- Truckee River Flood Management Authority
- US Army Corps of Engineers

PROJECT DESCRIPTION

- Flood risk management and recreation features along approximately six miles of the Truckee River in Nevada from U.S. Route 395 to the town of Vista, NV.

CONSIDERATIONS

- Flooding from the Truckee River poses a life and safety hazard to downtown Reno and Truckee Meadows.
- The quality and quantity of riparian and related floodplain habitats have diminished along the Truckee River causing adverse effects on the aquatic ecosystem, including special status fish species.
- Passage of spawning fish species from Pyramid Lake is obstructed by various artificial barriers.
- The Truckee River is no longer a stable river system.

Source: USACE

Truckee River

Photo Source: USACE

PROJECT BENEFITS

- Project features are designed to provide "100-year flood protection" in high-value commercial and industrial areas near the Truckee River, including the Reno-Tahoe International Airport.
- Recreation features include a new pedestrian/bike bridge, bike lanes on bridges, pedestrian/bike paths, and new access sites and improvements in downtown Reno.
- Fish and wildlife enhancement features, consisting of riparian plantings, marsh habitat preservation, and fish habitat improvements.

PRIMARY CHALLENGES

- In 2012, the study was re-scoped to assess the feasibility of modifying the Congressionally-authorized project to reduce flood damages in the Truckee Meadows project area while avoiding or minimizing adverse effects.
- Funding.

RENO-SPARKS AREA MSA MARKET SERVED:

Population (Census, 2010 value)	318,000
Employment (BLS, 2011 value)	211,000
GDP (BEA, 2014 value, $M)	$ 20,554

ECONOMIC BENEFITS AND COSTS

	2015$ (M)
Capital Cost	$ 336
Discounted Capital Cost	$ 307
Discounted Benefits	$ 614 – 1,228
Net Economic Benefits	$ 307 – 921
Benefit-Cost Ratio	2.0 – 4.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate; O&M excluded from costs.

Accommodating Autonomous Vehicles

U.S. REGION: **National**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$5.0 – 7.5 T**
BENEFIT-COST RATIO: **7.0 > 10.0**

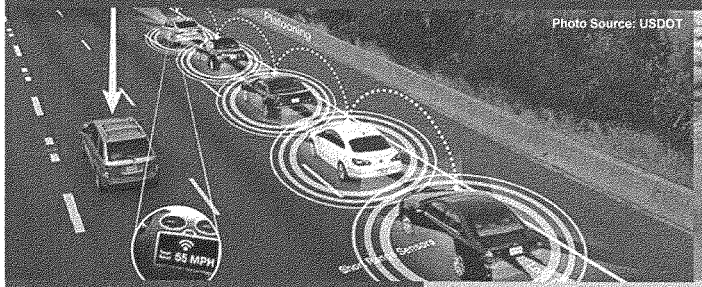


Photo Source: USDOT

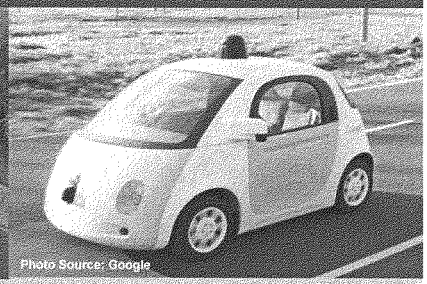


Photo Source: Google

PROJECT SPONSORS:

- Primarily private vehicle manufacturers and owners and technology firms
- Some infrastructure investments from individual state DOTs
- Some federal grants to support technology development
- Federal and state regulatory agencies

PROJECT DESCRIPTION

- Autonomous vehicles represent a breakthrough in surface transportation. They depend on in-vehicle technology including vehicle to vehicle communication (V2V). V2I refers to a variety of ways to share vehicle information with other public and private users.

CONSIDERATIONS

- Several auto manufacturers will have semi-autonomous vehicles (for expressways and major arterials during good weather) available later this year. Fully autonomous cars (all roads) will likely be available before the end of the next decade.
- No set of consistent state (and perhaps federal) safety regulations currently exist.
- More technical development is called for in order to handle poor weather, local roads, V2V communication, and interface with the driver.
- State and local governments have yet to decide how these new vehicles affect investment and operations.

Sources: USDOT, Morgan Stanley

Accommodating Autonomous Vehicles

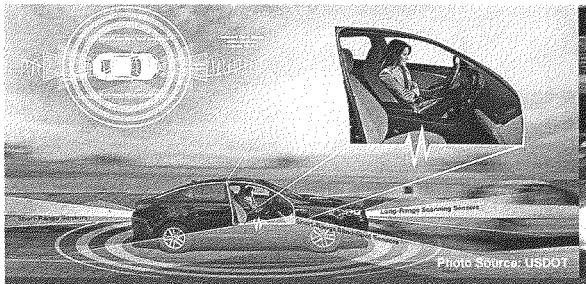


Photo Source: USDOT

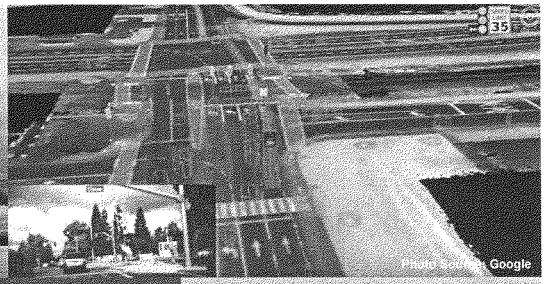


Photo Source: Google

PROJECT BENEFITS

- Autonomous cars bring obvious social benefits—significant reduction in highway fatalities, fewer road crashes, reduced traffic congestion, higher occupant productivity, fuel savings.
- Improved access for people who are mobility impaired whether due to disabilities or age.
- Improved roadway capacity since there will be fewer crashes and autonomous vehicles will allow reduced space between traveling vehicles.
- Potential efficiency gains from freight and transit operations.

PRIMARY CHALLENGES

- Consistent national and/or state regulations regarding safety and technical compatibility while not discouraging innovation.
- Uncertainty over pace of deployment of new vehicles and critical mass needed in order to generate significant safety and capacity benefits.
- Financial impacts on state and local agencies.
- Other effects including changes in transit use, urban form, and VMT.

NATIONAL MARKET SERVED:

Population (Census, 2015 value)		321,419,000
Employment (BLS, 2015 value)		141,958,000
GDP (BEA, 2014 value, $M)	$	17,232,618

ECONOMIC BENEFITS AND COSTS

(Assumes Low Costs and Benefits)		2015$ (1)
Capital Cost	$	1.3
Discounted Capital Cost	$	0.83
Total Discounted Benefits	$	5.8 – 8.3
Net Economic Benefits	$	5.0 – 7.5
Benefit-Cost Ratio		7.0 – 10.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate. CMM excluded from ratio.

Recapitalization of the National Interstate Highway System (IHS)

U.S. REGION: **National**
PROJECT TYPE: **Highway**

NET ECONOMIC BENEFIT: **$1.6 – 3.1 T**
BENEFIT-COST RATIO: **4.0 > 7.0**

Photo Source: Public Domain image attributed to Richmond Times-Dispatch

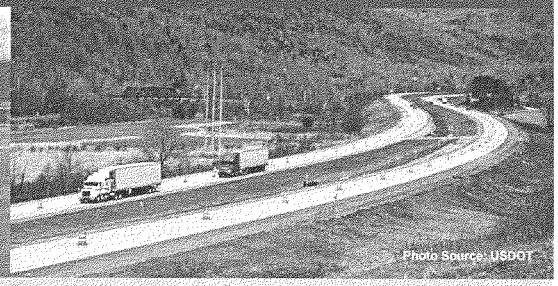


Photo Source: USDOT

PROJECT SPONSORS:

- Individual State DOTs
- Federal Highway Administration

PROJECT DESCRIPTION

- The nation's 46,876 mile IHS has long provided a consistent, national network for freight and personal movement, but most infrastructure is now more than fifty years old. NCHRP developed options to recapitalize the network, including additional capacity where needed. This project follows the "Reduced Service/Lower Investment" scenario that includes one half of the cost-effective lane additions.

CONSIDERATIONS

- Cost-effective and reliable movement of freight remains vital to future economic growth.
- State and federal funds for highways has not kept pace with the growth in demand for travel.
- Some states have been able to increase highway revenues, but their focus has been on maintenance and in-state improvements rather than inter-state routes.
- The recent FAST Act provides no net growth in federal funds.

Sources: NCHRP, FHWA

Recapitalization of the National Interstate Highway System (IHS)

Photos Source: FHWA

PROJECT BENEFITS

- Provides a reliable and safe national road network.
- Encourages business access to national and regional markets.
- Supports access to other parts of the freight network, including ports, airports, and intermodal freight.

PRIMARY CHALLENGES

- Adequate funds are key, given the political reluctance in many states to increase highway user fees.
- Need to find incentives for states to focus on inter-state connections. As with the original Interstate, federal incentives would help.
- Local opposition is likely regarding environmental concerns and different development scenarios.
- Will the growth in autonomous cars and trucks call for a different roadway system? For example, truck pelotons may need truck-only lanes, at least during part of the day.

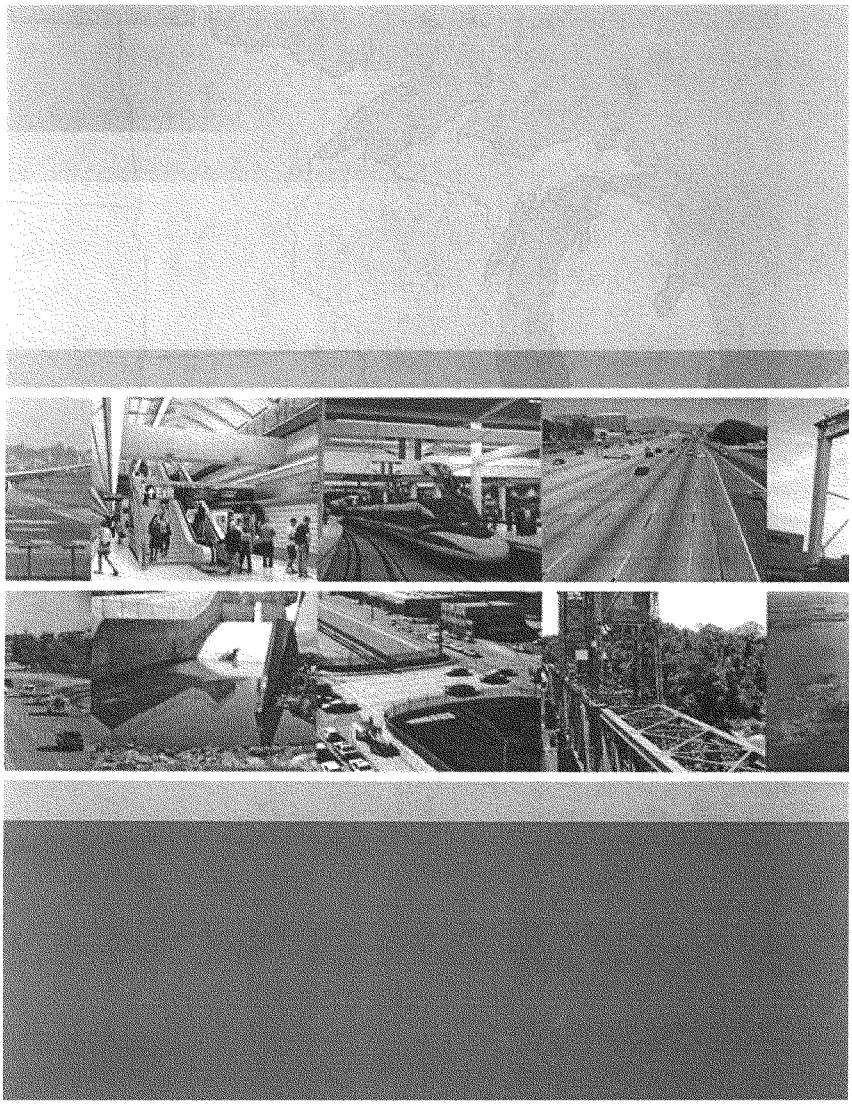
NATIONAL MARKET SERVED:

Population (Census, 2015 value)	321,419,000
Employment (BLS, 2015 value)	141,958,000
GDP (BEA, 2014 value, $M)	$ 17,232,618

ECONOMIC BENEFITS AND COSTS

(Assumes Low Costs and Benefits)	2015$ (T)
Capital Cost	$ 0.79
Discounted Capital Cost	$ 0.52
Total Discounted Benefits	$ 2.1 – 3.6
Net Economic Benefits	$ 1.6 – 3.1
Benefit-Cost Ratio	4.0 – 7.0

Note: All values in 2015 dollars; values were discounted using a 3% discount rate. O&M excluded from costs.



MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MOU") is made and entered into as of this 7th day of May 2012, by and between the City of Warwick ("City") and the Rhode Island Airport Corporation (RIAC) (collectively, "Parties"). This MOU is entered into by the Parties for the purposes of resolving (i) the litigation filed by the City challenging the Record of Decision ("ROD") for the T.F. Green State Airport Environmental Impact Statement that was issued by the Federal Aviation Administration (FAA) on September 23, 2011, and (ii) allowing RIAC to proceed to construct and operate the various elements of the Airport Improvement Program approved in FAA's ROD.

SECTION 1.00 RECITALS

1.01 Theodore Francis Green State Airport ("Airport") is medium hub airport in the New England region. The Airport is owned by the State of Rhode Island and operated by RIAC, who oversees the policy, management, operation and regulation of the Airport. The Chief Executive Officer and the staff of RIAC administer the day-to-day operations of the Airport.

1.02 RIAC has sought to expand the Airport and meet various safety concerns expressed by the FAA at various times. Commencing in 2002, RIAC updated and amended its Master Plan to serve as conceptual framework for future improvements at the Airport. In 2002, RIAC and the FAA undertook the drafting of an Environmental Impact Study to evaluate the potential environmental effects of each alternative being considered for the Airport's Master Plan (as well as additional alternatives in relation to a no action alternative.)

1.03 The City has been concerned about the ongoing and projected impacts of the Airport's operations on traffic, noise, air quality, human health risks and the quality of life in the City in general and the communities surrounding the Airport in particular. During the public review period for the EIS, the City submitted extensive comments on issues including mitigation measures to offset the potentially significant environmental effects of the proposed improvement of the Airport analyzed in the EIS.

1.04 The EIS process confirmed that RIAC's Alternative B4 (the "Preferred Alternative") best met the EIS purpose and need.

1.05 On or about September 23, 2011, the Federal Aviation Administration approved the EIS and issued its Record of Decision, thereby allowing RIAC to apply for federal funding of the Preferred Alternative, the environmental effects of which were studied in the EIS.

1.06 On November 21, 2011, the City filed a Petition for Review challenging the Federal Respondents' Record of Decision approving the EIS under the National Environmental Policy Act, the Clean Air Act, and the Clean Water Act.

2.00 DEFINITIONS

2.01 "Airport EIS" means the Final Environmental Impact Statement for the T.F. Green Airport Improvement Program approved by the FAA in its Record of Decision.

2.02 "Alternative B4" means alternative B4 as described and evaluated in the Airport EIS.

2.03 **"Commencement of construction"** means RIAC has completed all pre-construction engineering and design, has received all necessary licenses, permits and local and national environmental clearances, has engaged all contractors and ordered all essential equipment and supplies as, in each case, can reasonably be considered necessary so that physical construction of the eligible project may begin physical construction of the project has begun.

2.04 "Design Study" mean an engineering design study to a sufficient degree of detail to make cost determination.

2.05 "FAA" means the Federal Aviation Administration.

2.06 "Federal Respondents" mean the Department of Transportation, Ray LaHood, in his capacity of as Secretary of Transportation, the Federal Aviation Administration, and Michael Huerta, in his capacity as Acting Administrator.

2.07 "Intervenor" means the Rhode Island Airport Corporation.

2.08 "Lakeshore Property" means the site identified in Appendix J of the Airport EIS, section J.1.3.2, as may be modified by any subsequent acquisitions by RIAC.

2.09 "Master Plan" means the document approved by RIAC as a conceptual strategic framework for future improvements at the Airport including the T.F. Green Airport Improvement Program.

2.10 "T.F. Green Airport Improvement Program" means the entire program that comprises the approval by the FAA in its ROD, and subsequent implementation of Alternative B4, including the initial approval of all entitlements and other actions in conjunction with the approval of the T.F. Green Airport Improvement Program. The T. F. Green Airport Improvement Program includes subsequent approvals of all entitlements and other actions for any of the specific project components and activities that implement Alternative B4.

2.11 "NEPA" means the National Environmental Policy Act, 42 U.S.C. § 4321 *et seq.*, and the regulations promulgated thereunder by the Council on Environmental Quality, 40 C.F.R. Parts 1500 – 1508.

2.12 "Party" or **"Parties"** means, according to context, the City and/or RIAC.

2.13 "Petitioner" or **"City"** means the City of Warwick, a municipal corporation of Rhode Island and host community for the Theodore Francis Green State Airport.

2.14 "RIAC" means the Rhode Island Airport Corporation, a quasi-public corporation and subsidiary to the Economic Development Corporation and public instrumentality of the State of Rhode Island organized pursuant to Chapter 64 of Title 42 of the General Laws of Rhode Island.

2.15 "Record of Decision" or "ROD" mean the FAA's record of decision for the T.F. Green Airport Improvement Program, dated September 23, 2011, as well as all documents supporting or relied on for the FAA's record of decision approving the T.F. Green Airport Improvement Program, and all agency actions undertaken in reviewing the ROD.

STIPULATED MOU PROVISIONS

NOW, THEREFORE, in consideration of the mutual covenants, promises and undertakings set forth in this MOU and other consideration, the receipt and adequacy of which the Parties acknowledge, the Parties stipulate and agree as follows:

SECTION 3.00 MOU OVERVIEW

3.01 No Admission of Liability or noncompliance. This MOU is entered into by the Parties without any admission of liability or noncompliance with federal or state law by any Party.

3.02 Recitals True and Correct. The above recitals are true and correct and are incorporated as a part of this MOU.

3.03 Mutual Consideration. The commitment by the City to abide by the terms of this MOU is consideration for RIAC's commitment to abide by the terms of this MOU. RIAC's commitment to abide by the terms of this MOU is consideration for the commitment by the City to abide by the terms of this MOU.

3.04 No City Expenditure Required. Under no circumstances may any of RIAC's obligations under this MOU require any expenditure from the City's General Fund or any other City-controlled source of funds to construct or operate the Airport Improvement Program. This provision specifically also does not apply to section 7.03.04.01.

3.05 Regulation of the Airport. The Parties acknowledge that the operation of the Airport is regulated by state and federal legislation and regulations. The Parties intend that this MOU complies with all applicable state and federal legal requirements, including requirements imposed by the FAA and other regulatory agencies having jurisdiction over any aspect of the construction and operation of the Airport Improvement Program.

3.06 Condition Precedent to Enforcement Against RIAC. The terms of this MOU are not enforceable against RIAC unless and until RIAC commences the construction of the runway extension of Runway 5/23 to the south.

SECTION 4.00 CITY'S AGREEMENT REGARDING THE DISMISSAL OF THE PENDING ACTION

4.01 Dismissal of the Pending Action. Within ten (10) business days of the execution of this MOU the parties will execute appropriate documentation to cause the City's Petition for Review challenging the FAA's Record of Decision approving the Airport EIS and the T.F. Green State Airport Improvement Program filed in the United States Court of Appeals for the District of Columbia Circuit, Case No. 1-1448 (the "Petition") to be dismissed with prejudice and in the interim will take no steps to advance the City's Petition or take any other action to preclude RIAC from implementing the T.F. Green Airport Improvement Program.

4.02 Release of Claims/Covenant Not to Bring Any Released Claims. Except for the enforcement of the terms of this MOU, the City agrees that this MOU resolves all of the claims, of whatever nature or kind, that it asserted or could have asserted in the Petition or any other challenge to prevent RIAC from completing the T.F. Green Airport Improvement Program (except for the City's role in the wetland permitting process) ("Claims") and it further agrees that this MOU serves to release all Claims and that the City covenants not to bring any future suit, claim or proceeding related to the Claims.

SECTION 5.00 THE LAND ACQUISITION PROGRAM

5.01 RIAC agrees to acquire or provide sound insulation to the properties indicated on the color-coded Maps attached as Exhibits 1, 2 and 3, which indicate the following:

5.01.01 **Blue** indicates property to be acquired as a result of construction. These properties must be acquired as part of the T.F. Green Airport Improvement Program's construction program. ("Mandatory Acquisitions")

5.01.02 **Red** indicates property that will be located in the Runway Protection Zone (RPZ). ("RPZ Acquisitions")

5.01.03 **Purple** indicated property that will be offered to be acquired in two stages as a result of being within what has been designated by the Airport EIS as a high-noise area, that is, within the 70 DNL noise contour. ("Noise Acquisitions")

5.01.04 **Orange** indicates property that will be offered sound insulation as part of RIAC's future sound insulation program. ("Sound Insulation Property")

5.02 Mandatory Acquisition.

5.02.01 Property within the Mandatory Acquisition area will be acquired by RIAC, either through direct negotiations with the property owners or, if not successful, using appropriate governmental mandatory acquisition procedures available to RIAC under law.

5.02.02 Upon approval of the RIAC financing plan, and in any case no later than September 30, 2012, RIAC will provide the City and the Mandatory Acquisition property owners a date certain by which RIAC shall acquire all Mandatory Acquisition property. The acquisition date, in any case, shall be not later than the commencement of construction of the extended Runway 5/23.

5.02.03 If the RIAC financing plan is not approved, RIAC will meet with the City to decide on a new acquisition disclosure date.

5.03 RPZ Acquisitions.

5.03.01 Property owners within the RPZ Acquisition area will have the option to be acquired by RIAC.

5.03.02 Upon approval of the RIAC financing plan, but in no case no later than September 30, 2012, RIAC will provide the City and the RPZ property owners a date certain by which RIAC shall offer to acquire all RPZ property. The acquisition offer date, in any case, shall be not later than the opening of the extended Runway 5/23 for commercial air traffic.

5.03.03 If the RIAC financing plan is not approved, RIAC will meet with the City to decide on a new acquisition offer disclosure date.

5.04 Noise Property.

5.04.01 Property owners within the Noise Property Area, indicated in Purple on Exhibits 1, 2 and 3, will have the option to be acquired by RIAC.

5.04.02 RIAC commits to make the acquisition offers in the Noise Property Area, indicated in Purple on Exhibits 1, 2 and 3, regardless of when the noise impacts are experienced by property owners.

5.04.03 Timing of the Acquisitions

5.04.03.01 Property indicated on Exhibits 1, 2 and 3 with Purple cross-hatching will be offered to be acquired no later than end of 2015. These are properties that the Airport EIS indicates will be impacted by higher than 70 DNL noise levels by 2015.

5.04.03.02 Property indicated on Exhibits 1, 2 and 3 in Purple without cross-hatching will be offered to be acquired no later than end of 2020. These are properties that the Airport EIS indicates will be impacted by noise levels higher than 70 DNL by 2020 and 2025.

5.05 Sound Insulation Property.

5.05.01 Property owners with property located in the 65+ DNL contour, as indicated on Exhibits 1, 2 and 3 in Orange, will be eligible to participate in RIAC's Residential Sound

Insulation Program provided that the subject property has not previously received sound insulation pursuant to a 14 CFR Part 150 Noise Compatibility Program.

5.05.02 Property indicated on Exhibits 1, 2 and 3 with Orange cross-hatching will be offered sound insulation when impacted to a level higher than 65 DNL (as shown on noise contours calculated on Annual Airport Noise Emissions.) These are properties that the EIS indicates will be impacted by higher than 65 DNL noise levels by 2015.

5.05.03 Property indicated on Exhibits 1, 2 and 3 in Orange without cross-hatching will be offered sound insulation when impacted to a level higher than 65 DNL (as shown on noise contours calculated on Annual Airport Noise Emissions.) These are properties that the Airport EIS has identified as being impacted by noise levels in excess of 65 DNL by 2020 and 2025.

5.06 Re-use of All Acquired Property.

5.06.01 After the RPZ and Noise Properties have been acquired, the City will work with RIAC to timely rezone all acquired Properties from residential to commercial where appropriate, based on the land use of the surrounding area.

5.06.02 After the RPZ and Noise Properties have been rezoned, RIAC will dispose of such Properties in a reasonably timely manner, and only in the event that RIAC has determined that such properties are not required for an airport purpose.

SECTION 6.00 THE RELOCATION OF MAIN AVENUE.

6.01 Main Avenue. The design and configuration of the relocated Main Avenue shall be in full and complete compliance with Rhode Island department of Transportation (RIDOT) standards.

6.02 RIAC will not seek any waivers or relief from the then applicable RIDOT standards with respect to the relocation of Main Avenue.

6.03 Acquisition of Main Avenue Property. As a result of the relocation of Main Avenue, additional property may have to be acquired by RIAC. Within 60 days of RIDOT's approval of the right-of-way for the relocated Main Avenue, RIAC will provide the City and the Main Avenue property owners a date certain by which RIAC shall offer to acquire such Main Avenue properties. RIAC will offer to acquire the full lots of any residential property that overlaps to any degree with the new right-of-way for the relocated Main Avenue (the "Main Avenue Property"); provided, however, that RIDOT would have been required to purchase some level of property interest in the underlying lot.

6.04 Airport Road Waterline RIAC will relocate and replace that portion of the water main that will be under the Runway 16's runway safety area.

6.05 Re-use of Main Avenue Property.

6.05.01 After the Main Avenue Property has been acquired, the City will work with RIAC to rezone the Main Avenue Property from residential to commercial where appropriate, based on the land use of the surrounding area.

6.05.02 After the Main Avenue Property has been rezoned, RIAC will dispose of such Main Avenue Properties in a reasonably timely manner, and only in the event that RIAC has determined that such properties are not required for an airport purpose. . To the extent reasonably practical, RIAC will attempt to return such Main Avenue Property to the tax rolls of the City.

SECTION 7.00 WINSLOW PARK BALL FIELDS.

7.01 RIAC agrees that it will terminate the Winslow Park Ball Fields lease with the City and shall, at its sole expense, relocate, redesign, permit and reconstruct the Winslow Field Recreational Complex ("Winslow Field") at Community College of Rhode Island property or an alternative site identified by the City. Such reconstruction of Winslow Field shall include, but not be limited to:

7.01.01 Design and construction of a six (6) field softball complex which shall include four (4) regulation size softball fields and two (2) instructional fields, all of which shall at a minimum meet those facilities being replaced, the layout and design of which shall be subject to the reasonable, good faith and expeditious approval by the City and CCRI.

7.01.02 Design and construction of a new club house for the softball association which shall include at a minimum, a concession area, men and women restrooms, equipment storage facilities and a meeting room for the softball association, said facility shall at a minimum meet that which is being replaced, location and design shall be subject to the reasonable, good faith and expeditious approval by the City and CCRI.

7.01.03 Design and construction of one standard soccer field and two smaller soccer fields that are the same dimensions as the existing fields and shall at a minimum meet those facilities being replaced, the location and design of which shall be subject to the reasonable, good faith and expeditious approval by the City and CCRI.

7.01.04 Design and construction of parking areas which shall at a minimum meet the number of parking spaces currently existing at Winslow Park. Design and location of the parking areas shall be subject to the reasonable, good faith, and expeditious approval by the City and CCRI.

7.01.05 Provide that all new recreational facilities shall be reasonably functional and playable prior to the elimination of the existing Winslow Fields. Once constructed, the City and CCRI shall be solely responsible for the facilities and land.

7.01.06 Apply for and receive all required state and federal permits and approvals prior to initiating construction activities associated with relocation of the existing Winslow Fields. The City shall with due diligence and in a timely manner provide all local required permits.

7.02 Alternative Siting. If the City determines that is not feasible to relocate the Winslow Fields to CCRI, the City will notify RIAC in writing and then have 120 days to identify a new location for the Winslow Fields that is acceptable to the City. In no event, however, shall an alternative site be identified in substitution for the CCRI site later than September 1, 2012.

7.02.01 Upon agreement with the City, RIAC will fund, except as provided in 7.02.02 and subject to the 15% differential provision set forth in Section 7.03, the relocation of the Winslow Park Ball Fields to that location.

7.02.02 Any engineering design study for a site other than CCRI or Lakeshore will be financed by the City. However, if the City identifies an alternative site within forty-five (45) days of the date of this Agreement, RIAC will pay for the engineering design study for such alternative site in lieu of the engineering design study for the CCRI site.

7.02.03 If the City fails to identify an alternative site and/or if the City selects alternative 7.03.04.02 below, RIAC will relocate Winslow Fields to the Lakeshore Property at RIAC's sole cost, and in accordance with the provisions set-out in 7.01 above.

7.03 Funding of Relocation.

7.03.01 Subject to Section 7.02.02 above, RIAC will perform at its own expense an engineering design study to a sufficient degree of detail to make cost determinations ("Design Studies") of both the CCRI location and the Lakeshore location.

7.03.02 The projected cost of the relocation of Winslow Field must include all costs of construction such as traffic design, signalization and turning lanes at and on Airport Road, as well as fencing between the ball fields and the abutting residential neighborhood.

7.03.03 As a result of the Design Studies, if the projected cost of the CCRI location or the alternative site is equal to or no more than 15% more than the projected cost of the Lakeshore location, then RIAC will solely fund the relocation of the Winslow Fields to CCRI location or alternative site.

7.03.04 If, as a result of the Design Studies the projected cost of the CCRI location or the alternative site is more than 15% above the projected cost of the Lakeshore location, then the City will have the option to:

7.03.04.01 Secure a commitment for the additional funding to fund relocating Winslow Fields to the CCRI location or the alternative site. Such additional funding would be over and above RIAC's commitment to provide funding for the relocation in the amount of the projected cost of the Lakeshore location, plus 15% of such projected cost. OR

7.03.04.02 Allow RIAC to relocate Winslow Fields to the Lakeshore location at its sole cost.

7.04 The City shall advise RIAC in writing within 30 days of its receipt of the Design Studies its choice of field locations. If the City fails to make such an election, RIAC shall make this determination without further input for the City.

7.05 RIAC shall not terminate the lease at Winslow Fields until the replacement facilities are fully operational.

7.06 If the Lakeshore location is not used for the relocated Winslow Fields, RIAC will maintain a 200 foot buffer between Airport owned property and the closest remaining privately owned residential property in the Lakeshore neighborhood.

7.07 The City and RIAC acknowledge that the CCRI location and the alternative site have not been subjected to federal environmental review as may be required by law for all projects involving the expenditure of federal monies. The City and RIAC acknowledge that this review must be completed and further agree that the cost of mitigation related to any associated findings shall be included in 15% cost differential contemplated above in Section 7.03.03 and 7.03.04.

SECTION 8.00 HISTORICAL CEMETARIES

8.01 Historical Cemetery #26.

8.01.01 Monuments Historical Cemetery #26 that exceed the height restrictions of the Object Free Zone (OFZ) will be laid down flat and encased in an appropriate transparent protective material paid for by RIAC.

8.01.02 The monuments must be laid in such a manner that all sides upon which there is writing are legible; provided, however, if any writing is obscured once the monument is laid down, a bronze plaque paid for by RIAC memorializing the unseen engravings will be placed next to said monument.

8.01.03 The encasement must be designed to protect the monument from damaged caused by vibrations sustained from being laid flat.

8.01.04 RIAC is financially responsible for repairs and/or replacement of any encasement.

8.01.05 The Warwick Historical Cemeteries Commission and the Warwick City Planner will have final approval of how the monuments are laid down.

8.01.06 Families of the deceased, volunteers, and visitors will continue to have reasonable access to the Historic Cemetery.

8.02 Historical Cemetery #77. Should Cemetery #77 be disturbed by the T.F. Green Airport Improvement Program, then RIAC will fund a full PAL investigation to investigate the extent of the Cemetery prior to construction of the relocated Main Avenue. As per PAL protocols, the extent of the cemetery will be defined by the absence of unmarked grave shafts.

SECTION 9.00 AIR QUALITY.

9.01 RIAC agrees to continue air quality testing required under Rhode Island law, RIGL § 1-7-1, et seq. "The Permanent Air Quality Monitoring Act," for two years after the statutory period ends in 2015, that is through 2017.

9.02 RIAC agrees to provide the City with the data in the format that it is received from RIAC's consultants of all air quality testing done in accordance with the Permanent Air Quality Monitoring Act within 60 days of its compilation.

SECTION 10.00 WATER QUALITY.

10.01 The City shall designate an individual or group of individuals as "Water Quality Liaison."

10.02 The Water Quality Liaison may accompany RIAC, its contractors and consultants ("Agents") engaged in taking water samples based on the RIPDES regulatory testing requirements. Prior to accompanying RIAC during a sampling event the Water Quality Liaison must meet security requirements for access to the airfield.

10.03 Access. In accompanying RIAC or its Agents, the Water Quality Liaison shall be provided with reasonable notice and escorted access to sites both on the Airport and off the Airport, consistent with water quality sampling and testing.

> **10.03.01** In exchange for access, Water Quality Liaison will release RIAC and the City from liability for any injuries sustained while exercising the Water Quality Liaison's access under the MOU.
>
> **10.03.02 Notice.** RIAC or its Agents will provide the Water Quality Liaison with reasonable notice of sampling events. Because sample collection takes place on short notice due to the unpredictability of precipitation events, less than one hour notice is deemed to be unreasonable. RIAC and its Agents are under no obligation to wait for the arrival of the Water Quality Liaison to commence their sampling. Notice will be provided to the Water Quality Liaison by email.

10.04 RIAC agrees to provide the City with the results of all water quality testing under the RIPDES permit in the same format as it is received from its consultants. The City will ensure that all such data is available to the public

10.05 RIAC shall provide Five Thousand Dollars and Zero Cents ($5,000.00) annually for seven (7) years to the University of Rhode Island Watershed Watch to train and equip Warwick volunteers to perform water quality monitoring on waterways in the City of Warwick or in the Greenwich Bay Watershed. RIAC will enter a separate agreement with the University of Rhode Island Watershed Watch to ensure that the use of the foregoing money results in tangible and specific benefit to the Airport, such as training URI volunteers to independently verify water testing of contiguous waterways/watersheds that may be impacted by the Airport.

10.06 RIAC agrees that should RIDEM lower its standards for water quality testing in the 2011 Draft RIPDES permit ("RIPDES Permit"), it will maintain the higher standard for two years after the effective date of the lower standard, provided that such higher standard does not violate law.

10.07 In accordance with Section 10.06, above, RIAC commits to continue to carry out its water quality testing program that it is currently being conducted pursuant to its RIPDES Permit and as identified in Exhibit 4.

10.08 The City Council supports and RIAC shall construct the $25 Million glycol collection and treatment facility as outlined in the currently proposed RIPDES permit which shall be constructed by December 31, 2015, unless such date is extended by RIDEM.

SECTION 11.00 COMMUNITY OUTREACH PROVISIONS

11.01 Signage. RIAC will install signs at its own expense, where appropriate, stating "Welcome to Warwick, Rhode Island" inside the terminal, inside the parking garage and on the train platform. The RIAC Director of Marketing will work with the City's Director of Tourism, Culture, and Economic Development to establish and execute a plan.

11.02 Promotional Materials. RIAC agrees to promote the City of Warwick as their host community in all appropriate marketing literature and/or their website. Local hotels, restaurants and businesses will be regularly highlighted with published materials. The RIAC Director of Marketing will work with the City's Director of Tourism, Culture and Economic Development to establish and execute a plan.

12.03 Community Bulletin Boards. RIAC will donate to the City and erect one Community Airport Bulletin Board (at a one time cost not to exceed $1,000.00) at a site provided by the City for the purpose of providing the community with information about the Airport. It will be the responsibility of the residents, community or neighborhood groups to maintain the bulletin board and provide communication. RIAC shall not have any further obligations, financial or otherwise, with respect to the bulletin board.

SECTION 12.00 ENFORCEMENT OF THIS MOU

12.01 Dispute Resolution
Should a dispute arising out of or related to the MOU occur, the aggrieved Party must provide written notice of the dispute to the other Party identifying with sufficient detail the nature and extent of the dispute. The party receiving the notice shall be provided with a least a 30-day period in which to cure the dispute. After the 30-day period has expired either Party may request mediation or mediation and arbitration as set forth below.

12.02 Mediation

12.02.01 Any dispute arising out of or related to the MOU shall, be subject to mediation as a condition precedent to arbitration initiated by either Party.

12.02.02 The Parties shall endeavor to resolve their dispute by mediation which, unless the Parties mutually agree otherwise, shall be in accordance with the Commercial Mediation Rules of the American Arbitration Association then in effect. Notice of a request for mediation shall be filed in writing with the other Party to the MOU and with the American Arbitration Association. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of the arbitration proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the Parties.

12.02.03 The Parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in Rhode Island, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

12.03 Arbitration

12.03.01 Any disputes arising out of or related to the MOU shall be subject to arbitration. Prior to arbitration, the parties shall endeavor to resolve disputes by mediation in accordance with the foregoing provisions of 12.02.

12.03.02 Disputes not resolved by mediation shall be decided by arbitration which, unless the Parties mutually agree otherwise, shall be in accordance with the Commercial Arbitration Rules of the American Arbitration Association ("Rules") then in effect. The demand for arbitration shall be filed in writing with the other Party to the MOU and with the American Arbitration Association. Each Party shall appoint one arbitrator in accordance with the Rules. The two arbitrators so selected shall select a neutral arbitrator in accordance with the Rules. The Parties shall be solely responsible for the cost and expense of their respective legal representation and their respective appointed arbitrators. The Parties shall share the neutral arbitrator's fee and any filing fees equally. The arbitration shall be held in the State of Rhode Island. Decisions rendered in the arbitration proceedings shall be final and binding except to the extent they are vacated in accordance with Rhode Island General Laws § 10-3-12 .

12.03.03 A demand for arbitration shall be made within 90 days after the written notice has been received pursuant to 12.01, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such dispute would be barred by the applicable statute of limitations.

SECTION 13.00 MISCELLANEOUS

13.01 Notices. All notices and other communications required or permitted under this MOU will be in writing and will be deemed to have been duly given on the date of delivery when delivered personally or when transmitted by facsimile or e-mail to the Parties as specified below, or three days following the date of deposit in the United States mail. In the case of a notice or communication by facsimile or e-mail, the notice of communication will be sent to the number or e-mail address listed below, and a written copy will be mailed or personally delivered to the address below within three

days of the transmittal of the facsimile or e-mail. All notices or communications sent by United States mail will be sent postage prepaid by certified first class mail, return receipt requested to the address specified below.

If to RIAC:

Rhode Island Airport Corporation

Attn: President and CEO

2000 Post Road

Warwick, RI 02886

With a copy to:

Rhode Island Airport Corporation

Attn: General Counsel

2000 Post Road

Warwick, RI 02886

If to the City:

City of Warwick City Council

Attn: City Council President

Warwick City Hall

3275 Post Road

Warwick, Rhode Island 02886

With a copy to:

City of Warwick City Council Solicitor

Attn: Mr. John Harrington

Warwick City Hall

13.11 Headings Not Limiting. Section and subsection headings contained in this MOU are included for convenience only and will not be deemed to govern, limit, modify or in any manner affect the scope, meaning or intent of the provisions of any section or subsection in this MOU.

13.12 Entire MOU. This MOU represents the entire agreement of the Parties with respect to the subject matter of the MOU. No prior written or oral statements, proposals or agreements will alter any term or provision of this MOU.

13.13 Authority of Signatories. Each Party represents and warrants that it has taken all legally required actions to authorize its representative to execute this MOU and that the individual executing this MOU on that Party's behalf has the authority to sign on behalf of said Party.

IN WITNESS WHEREOF, the Parties here cause this MOU to be duly executed by their respective signatures.

Dated: May 14, 2012

RHODE ISLAND AIRPORT CORPORATION

By: Kurt A Pullen

Title: PRES & CEO

Dated: 5/9/12

THE CITY OF WARWICK

By: _____

Hon. Scott Avedisian, Mayor

Dated: May 8, 2012

By: _____

Hon. Bruce Place, City Council President