

# **Commission Briefing Paper 4K-02**

## **Evaluation of Alternative Approaches to Improve the Efficiency of Existing Processes and Reduce the Amount of Time Required to Implement Projects**

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### **Introduction**

This paper is part of a series of briefing papers to be prepared for the National Surface Transportation Policy and Revenue Study commission authorized in section 1909 of SAFETEA-LU. The papers are intended to synthesize the state-of-the-practice consensus on the issues that are relevant to the Commission's charge outlined in Section 1909, and will serve as background material in developing the analyses to be presented in the final report of the Commission.

This paper on Module IV, Task K-02 presents information on various approaches to improving the efficiency of existing processes and reducing the amount of time required to implement projects.

### **Background and Key Findings**

- A number of factors affect the efficiency and the amount of time it takes to develop and deliver a project. These include the number of phases a project goes through as it is developed and implemented. It is also a result of the wide variety of people and agencies involved and regulatory requirements that have to be met.
- Fiscal constraint principles help States and MPOs focus resources on a prioritized list of funded projects for advancement into project development and avoid the creation of a wish list of projects unlikely to be completed due to financial limitations.
- The project development process can be streamlined through the establishment of negotiated timelines, early identification of issues, early coordination with the public, early coordination with environmental resources agencies and permitting agencies, early identification of resource limitations and concurrent environmental reviews.
- Breaking down the stove pipes between processes, such as between the planning and environmental reviews and between the planning and operations can minimize duplicative work.
- Through the use of Context Sensitive Solutions (CSS) and Flexibility in Highway Design Principles, a project can be designed to be safe and complementary to a community without causing delays or disruptions to the project development process.

### **Key Factors Affecting Project Development Timelines**

A number of factors affect the efficiency and the amount of time it takes to develop and deliver a project. These include:

- The project development and delivery process is multifaceted, difficult, and complex, in that many processes and regulatory requirements must be met for each of several phases that are

normally undertaken, including: planning, environment/preliminary engineering, design, right-of-way, and construction before a project is completed and opened to traffic.

- Transportation projects vary considerably and have unique characteristics depending on their size, location, complexity, and potential impacts to the human and natural environment.
- Many requirements are placed on the project development and implementation by Titles 23 and 49, the National Environmental Protection Act (NEPA) and other laws.
- Some States and MPOs are overcommitted in their transportation plans and programs, including more projects than they can actually handle based on available funds. Overextending limited financial resources and staff makes it more difficult to complete projects.
- There is a high level of scrutiny, involvement, and interest in the project development and delivery process by the public, special interest and environmental groups, local communities, stakeholders, and elected officials.
- Projects in the development stage can be subject to cycles of starts and stops depending on the availability of resources, political climate, sponsoring agency's interests and priorities, and the quality of project management. All of these things can change and the project priorities change with it, causing stops and starts, particularly in the NEPA and planning phases of a project.
- Duplication of work done in the project development process can add to the time needed to complete project development. For example, work done in the planning process is sometimes repeated in the NEPA process. This can be for several reasons including stovepipes that often exist between the planning and NEPA functions within a State DOT, uncertainty as to the legality of using previously completed planning work in the NEPA process, and lack of coordination.
- Issues can arise in the NEPA process such as disagreements or concerns raised by environmental resource and permitting agencies due to a lack of early and on going coordination with environmental and resource agencies.
- Some communities, particularly those in urban areas, want design exceptions from AASHTO design to make the projects more compatible with their communities. Because of the potential safety and mobility issues associated with design exceptions, they have to be reviewed and approved for use.
- Constraints on available funding, cost escalation that greatly exceeds the general rate of inflation, and the use of innovative contracting and the use of financing mechanisms have made the project development process even more complicated, particularly for larger projects.
- Federal agencies, environmental resource agencies, the public and project sponsors are trying to meet and balance many goals when developing and implementing projects including congestion relief, enhancing safety, and mitigating environmental and community impacts.

Section 6002 of SAFETEA-LU recognizes the need to improve the efficiency of existing processes and reduce the time required to deliver projects, including the environmental process. Informal study and analysis of a sampling of projects has been undertaken to determine if there are key areas where streamlining could be most effective within the environmental process. These studies indicate that there are no specific element(s) that can be identified within the environmental process that cause more delays or problems than other elements of the environmental process

## **Overview of Strategies to Improve Existing Process and Reduce the Time Required to Implement Projects**

Because of many phases a project undergoes (planning, NEPA, ROW, design, construction), the considerable process requirements that must be followed for each phase, and laws and regulations that have to be met, efforts have been undertaken to improve the efficiency of the project development process and to reduce the amount of time it takes to deliver projects has taken multiple forms. These efforts are described below:

### **FHWA's Environmental Vital Few Goal (Streamlining)**

FHWA's Environmental Vital Few Goal, as well as FHWA's Performance Plan, calls for several measures to improve the timeliness of the Federal-Aid environmental process. Under this goal, FHWA has established timeframes for Environmental Assessments (EAs) and Environmental Impact Statements (EISs) and set a goal of meeting the schedules for 90% of those projects by September 30, 2007. This goal includes decreasing the median time it takes to complete an EIS from 54 months to 36 months by September 30, 2007 and decreasing the median time to complete an EA from 18 months to 12 months also by September 30, 2007. To meet this goal, FHWA is setting negotiated environmental timeframes, documenting environmental project timeframes, and implementing concurrent review timelines with the States, MPOs, and environmental resource and permitting agencies. The timelines are intended to create a sense of accountability. All agencies have input into setting the timeline. FHWA is working with project sponsors to streamline the environmental process and help meet these goals by encouraging early identification of issues, promoting early participation of environmental resource and permitting agencies, and making a stronger effort to recognize resource limitations upfront.

### **Linking the Transportation Planning and NEPA Processes**

FHWA/FTA developed and released major new guidance on this subject in February 2005 for the States and MPOs and FHWA/FTA field offices to use during transportation planning and project development. The guidance is intended to help States, MPOs, and transit operators avoid situations where unexpected issues arise late in the project development process that could stop or delay a project. The guidance provides technical, legal, and administrative frameworks for States and MPOs for establishing early and ongoing coordination with resource agencies and the public during planning and project development. This guidance also provides legal guidance to States and MPOs on methods to streamline project delivery through avoiding the commonly occurring problem of duplicating previously completed planning work in the NEPA process. The result is a more streamlined project development process and quicker delivery of projects.

### **Section 6002 Environmental Streamlining Provisions**

FHWA/FTA have developed guidance for implementation of the Section 6002 Environmental Streamlining Provisions for use by the State DOTs, field offices, and project sponsors.

### **Linking Transportation Planning and Operations**

The FHWA/FTA has a long standing effort at working with the States, MPOs, and transit agencies to encourage them to better link transportation operations and planning. This has been undertaken through the development and implementation of training, web seminars, publications, demonstration grants, and through the formation of workgroups and committees that include AMPO, AASHTO, and TRB. Numerous benefits to improving the delivery of projects have

occurred as result of this effort, some examples that were highlighted in a recent report to the Secretary include: a more streamlined project evaluation and selection process; elected officials who understand the importance of including operations and ITS projects in the transportation plan and program; improved funding opportunities for operations and ITS projects; better understanding of the costs and benefits of operations and ITS projects; coordinated planning for safety and security; and a reduction in the congestion impacts of work zones and road, bridge, and tunnel closures. Other benefits include cross-jurisdictional coordination of operations projects such as signal timing and incident management, savings from equipment and resource sharing, and the use of operations data in transportation planning.

### **The Special Experimental Program (SEP)**

FHWA has established the SEP program to allow FHWA to identify, for trial evaluation, new approaches to project delivery. For example, SEP-15 currently allows FHWA to identify, for trial evaluation, new public-private partnership approaches to project delivery. It is anticipated that these new approaches will allow the efficient delivery of transportation projects without impairing FHWA's ability to carry out its stewardship responsibilities to protect both the environment and American taxpayers. SEP-15 addresses, but is not limited to, five major components of project delivery: (1) contracting, (2) compliance with environmental requirements, 3. right-of-way acquisition, (4) project finance, and (5) elements of the transportation planning process. Projects approved under this program may include suggested changes to the FHWA's traditional project approval procedures and may require some modifications in the implementation of FHWA policy. Deviations from current title 23, U.S.C., requirements and generally applicable FHWA regulations also may be involved. This program is designed to allow innovative approaches to project delivery to be tested in an efficient manner by allowing for experimental deviations from FHWA's administrative and procedural requirements.

### **Context Sensitive Solutions (CSS)**

CSS is a collaborative, interdisciplinary, approach that involves all stakeholders in developing a transportation facility that complements its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. Application of CSS principles may save money and reduce project delays, resulting in significant benefits to transportation agencies. Beyond its value as a public involvement strategy to foster improved community participation, CSS can help identify community needs and potential problems (and solutions) ahead of the project development/National Environmental Policy Act (NEPA) stage. The Florida DOT's Efficient Transportation Decision-Making Processes (ETDM) process, for example, follows CSS principles through its links to land use, transportation, and environmental resource planning. It facilitates early and interactive involvement to produce better environmental outcomes. As a result, FDOT is improving context sensitivity and the quality of decisions and environmental investments and avoiding conflicts that may occur later in the project development process that could cause delays.

### **Financial Constraint Guidance**

FHWA/FTA have developed and issued guidance on fiscal constraint for the States, MPOs, and field offices to use in developing transportation plans and programs. The fiscal constraint guidance provides a means for States and MPOs to prioritize their project decisions and focus on advancing those projects for which funding is reasonable expected to be available. Through the

application of fiscal constraint principles to transportation plans and programming documents, States and MPOs can avoid developing and advancing a lengthy wish list of projects that can't possibly be completed due to funding constraints and instead focus on identifying only those projects that are most likely to proceed because of the reasonable availability of funds. The fiscal constraint requirements are also intended to make sure that the costs and adequate revenue are identified to operate and maintain the existing transportation system. In non-attainment and maintenance areas, only projects that have "available and committed" funding may be identified in the first two years of the federally funded transportation program.

### **Flexibility in Highway Design**

Many local governments and communities like to deviate from the standard highway design requirements (AASHTO Green book) to make the facilities better fit into their communities. Design exceptions have to be reviewed by the State DOT and in some cases by the FHWA because of the implications they may have for safety and other factors. In 1997, the FHWA released its "Flexibility in Highway Design" guide. This guide does not create new standards. Rather it builds on the flexibility in current laws and regulations to explore the opportunities to use flexible design as a tool to help sustain important community interest without compromising safety. The guide stresses the need to breaking down barriers that sometimes make it difficult for highway designers to be aware of local concerns of interested organizations and citizens. Using the principles outlined in this guide, FHWA is working with State and local transportation partners to share ideas for proactive, community-oriented designs for transportation facilities and is encouraging designers to become partners with transportation specialists, landscape architects, environmental specialists, and others who can bring their unique expertise to the important task of transportation decision making and preserving the character of local communities. The guide is intended to provide a framework for designing highways that incorporate community values and are safe, efficient, effective mechanisms for the movement of people and goods.

### **Major Projects and Cost Estimating Assistance**

There have been significant issues with accurate cost estimates on major projects across the country. Cost escalation above the rate of inflation for steel, concrete, and asphalt as well as other cost items as well as scope creep, delays, and poor cost estimating have resulted in many major projects coming in over budget and over the time initially allotted for delivery. FHWA has helped develop guidance and training on the subject of major projects to help States develop and advance major projects in a systematic way and to help them avoid cost overruns and other problems that may arise later during project implementation. Efforts are underway to improve and coordinate cost estimates at all phases of project development from the planning estimate used for the transportation plan and TIP, to the preliminary engineering estimate done for the environmental document, to the engineer's estimate used to compare bids.

### **Innovative Finance**

Adjusted for inflation, the traditional revenue sources for transportation, including the State and Federal gasoline taxes, have been in decline for many years. This has caused a funding shortfall and the need to establish additional, less traditional sources of funding in many States. In an era of stagnant revenue growth, FHWA has developed and sponsored training, peer exchanges, conferences, workshops, publications, web sites, and technical assistance on a number of innovative finance techniques to assist States, transit agencies, and local governments in the

availability and use of innovative finance. Many projects across the Nation have been advanced faster than otherwise possible through the use of these tools. Examples of specific innovative finance techniques FHWA is providing assistance with include TIFIA, State Infrastructure Banks (SIBs), Public Private Partnerships (PPPs), Garvee Bonds, and Advanced Construction (AC).

### **Right of Way (ROW)**

The acquisition of ROW is generally restricted to occur after the NEPA process has been completed. This can cause delays because the ROW acquisition process can be lengthy. FHWA is looking at ways to allow ROW acquisition prior to the completion of the NEPA process that won't bias the outcome of the environmental process. These include protective buying, hardship acquisitions, and certain projects approved as experimental under Special Experimental Program #15.

### **Project Management**

FHWA/FTA field offices are working with the State DOTs, MPOs, and transit agencies to encourage them to develop a timeline of key activities and milestones necessary to undertake and complete the project development process for individual projects prior to beginning work on project development activities. Project sponsors are encouraged to develop these timelines in consultation with their FHWA/FTA field office, environmental resource agencies, and other key parties in order to insure that adequate time assigned, and adequate notice is given to undertake and coordinate key activities. This timeline is key to tracking how well the project is progressing through the project development process. It can be used to identify when there are delays and the causes and impacts of those delays to the project schedule.

### **Recommended Approaches to Improve the Efficiency of Existing Processes**

Given the complexity of the highway project development and implementation process and the increasing emphasis on public involvement, agency coordination, and community impacts, and the numerous laws and regulations to be complied with, the following recommendations are made to help simplify and expedite the process of delivering projects:

- Ensure that fiscal constraint provisions are being followed in the development of metropolitan transportation plans and TIPs and the Statewide STIP so that States and MPO's focus on projects which can reasonably be expected to be implemented and not waste time on those that can't.
- Standardize negotiated project development timelines to encourage better accountability and timeliness for project development and delivery. Progress should be monitored against the project timeline to identify any problems or shortfalls.
- Improve and standardize project cost estimating procedures used by the States for all projects.
- Include risk management principles in project timelines and in project cost estimating procedures.
- Track the time necessary to complete the NEPA process for all individual projects with the goal of streamlining the NEPA process where ever possible.
- Make streamlining the environmental process a way of doing business. Streamlining should include conducting concurrent reviews by agencies involved in the NEPA review process,

early identification of issues, early participation of environmental resource and permitting agencies, and a stronger effort to recognize resource limitations upfront.

- Actively involve State DOT leadership in project management for individual projects.
- Project sponsors apply CSS and Flexibility in Highway Design principles to all projects where it is appropriate to do so to make them compatible with the human and natural environment and to avoid conflicts that could delay the project.
- Expand the use of the Special Experimental Program or similar mechanisms to look at ways of allowing right of way acquisition and final design prior to NEPA completion.
- Expand the role of the private sector in funding, constructing, operating, and maintaining highways through Public Private Partnerships and other means.
- Use innovative contracting provisions such as incentive/disincentive clauses, lane rental, and substantial late penalties as standard contract features to encourage faster construction of projects by contractors.

Given past history as a baseline, the project development and implementation process will very likely continue to get more complicated with the advent of larger projects, additional regulatory requirements, and increasingly innovative financing arrangements, making it increasingly important that these recommendations be given consideration.

#### **CONSOLIDATED COMMENTS FROM MEMBERS OF THE BLUE RIBBON PANEL OF TRANSPORTATION EXPERTS - PAPER 4K-02**

One reviewer commented as follows:

1. Excellent paper
2. In most cases it would be desirable to reduce the time required for project approval to no more than two years.