SHRP2 SOLUTIONS
TOOLS FOR THE ROAD AHEAD

# Project Management Strategies for Complex Projects (R10)

***A more comprehensive, innovative approach to managing complex projects***

## Challenge

Complex highway projects come in a variety of sizes and use various financing mechanisms and delivery methods. Work on such projects often involves navigating complex logistics, new construction methods, controversial stakeholder issues, and restrictive regulations. Each of these components requires careful planning and execution. Similarly, underestimating cost, schedule, or disruption can negatively affect budgets, increase delays, and undermine public confidence.

Project management has long focused on three elements—cost, schedule, and technical requirements (scope, design, quality, and integrated delivery). However, complex projects, particularly those in the rapid renewal area, need something more robust to be successful.

Moving beyond traditional approaches requires stronger partnerships among transportation agencies, contractors, consulting engineers, and external stakeholders. Better strategic planning and execution must occur from startup through construction. The Guidebook for Project Management Strategies for Complex Projects provides practical tools and techniques to optimize innovation, minimize schedule and budget risks, and build better projects.

## Solution

Project Management Strategies for Complex Projects (R10), expands the three-dimensional analysis typically used by departments of transportation. It creates a model that facilitates project management in five areas: cost, schedule, technical, financial, and context. Methods for assessing complexity factors will help managers make rational resource allocations and guide planning and implementation.

### Methodology

The complex management product is a methodology that takes a project through a deliberative process that begins with an overview of complexity mapping. This process then follows five distinct steps for addressing the five dimensions.

The steps are:

- Define critical project success factors
- Assemble project team
- Select project arrangements
- Prepare early cost model and finance plan
- Develop project action plans

### Application Tools

The guidebook also contains the following:

- 18 case studies including 15 in the United States and 3 international
- Forms to conduct exercises to apply the 5 methods and 13 project management tools recommended in the product

### *Save Lives*

***Innovative management practices efficiently address complex issues, speeding project completion and reducing the amount of time workers and drivers are exposed to work zone hazards.***

### *Save Money*

***Economic challenges are carefully considered during the planning and development process. Innovative financing approaches ensure that project funding is available and complex projects are completed on time and within budget.***

### *Save Time*

***Environmental and economic challenges can significantly delay projects. Sound decision-making and project management strategies ensure successful and timely completion.***

RENEWAL

**One of four SHRP2 focus areas, Renewal products help transportation organizations rapidly build and restore highway infrastructure that lasts longer while minimizing user disruption and delay.**

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**Visit: www.fhwa.dot.gov/GoSHRP2**
**Learn more about products, case studies, and implementation assistance.**

- Other application tools that will assist transportation agencies in using the product

The companion training program will assist State and local transportation agency staff in obtaining the skill sets necessary to follow the process.

## Benefits

This deliberative process addresses and enables a systematic management approach that speeds decision making, addresses complex issues, and expedites government approvals for rapid renewal projects.

R10:

- Provides a five-dimensional project management (5DPM) approach to account for external factors.
- Considers projects to be iterative rather than linear.
- Schedules projects to create value; encourages innovation, hybrid contracting, and relational partnering.
- Emphasizes that each complex project has its own set of performance goals.

This method represents an evolution in current project management practices. The R10 product can be applied to highway projects of varying sizes and types to help project managers proactively identify, plan for, and manage their projects to reduce the schedule and cost impacts. The context for projects changes from linear to dynamic by encouraging innovation and relational partnering; emphasizing that each complex project has its own distinct set of performance goals.

The complex management methodology can be "self-implemented" after project managers or facilitators have been trained. It will also guide managers through a process to fully integrate project teams across the entire life cycle, a foundation of project success. Projects using this approach may also consider using the guidebook for Managing Risk in Rapid Renewal Projects (R09) at the appropriate point in the project development process, since the two products are complementary.

## The Implementation Assistance Program

Implementation assistance is available to help State departments of transportation (DOTs), metropolitan planning organizations (MPOs), and other interested organizations deploy SHRP2 Solutions. A range of opportunities is available to raise awareness of SHRP2 Solutions and to encourage early adoption of these products. Application periods are offered approximately twice per year. Each product selected for implementation assistance has the potential to deliver more efficient, cost-effective programs to meet the complex challenges facing transportation today.

## How can you learn more?

Visit: www.fhwa.dot.gov/GoSHRP2

- Additional product information
- Information about how this product is being used in the field
- Contact information for peers who are familiar with this product
- Links to research reports

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**About SHRP2 Implementation**

The second Strategic Highway Research Program (SHRP2) is a partnership of the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), and the Transportation Research Board (TRB). TRB completed the research, and now FHWA and AASHTO are jointly implementing the resulting SHRP2 Solutions that will help the transportation community enhance productivity, boost efficiency, increase safety, and improve the reliability of the Nation's highway system.