

Innovative Strategies for Managing Complex Projects

Management tool leads to better decisions that address all aspects of planning of a complex project earlier in project life

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

Project management has long focused on three elements—cost, schedule, and technical (scope, design, quality, and integrated delivery), but 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. This new guide developed by the second Strategic Highway Research Program (SHRP2) **provides practical tools and techniques to optimize innovation, minimize schedule and budget risks, and build better projects.**

Next Generation Guide for Managing Complex Projects

The Solution

The guidebook, *Project Management Strategies for Complex Projects*, expands the three-dimensional analysis typically used by departments of transportation and 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.**

The complex management product is a methodology that takes a project through a deliberative process that begins with an overview of complexity mapping and then follows five distinct steps for addressing the five dimensions. The steps are: 1) define critical project success factors, 2) assemble project team, 3) select project arrangements, 4) prepare early cost model and finance plan, and 5) develop project action plans.

Five-Dimensional Project Management Approach for Complex Projects

FOCUS AREA:
Renewal (R10)

Solutions scalable and adaptable to projects of all sizes of projects and nature.

Save Money

- Earlier and more efficient coordination reduces costs and schedule overruns.
- Proactive management strategies reduce cost overruns.



Save Time

- Strategic planning increases the likelihood of delivering a project on time.
- Costs are saved through better management of schedules.

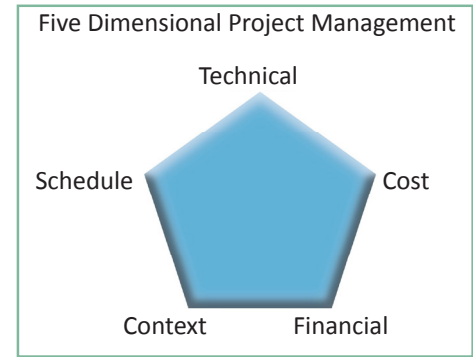


The guidebook also contains 18 case studies, forms, and other application tools that will assist transportation agencies in using the product. The companion training program will assist state and local transportation agency staff in obtaining the skill-sets necessary to follow the process.

The Benefits

This method represents an evolution in current project management practices. This 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.** It changes the context for projects from linear to dynamic by encouraging innovation and relational partnering and emphasizing that each complex project has its own distinct set of performance goals.

The complex management product is very amenable to “self-implementation” after project managers or facilitators have been trained in the methodology. This product is scalable and adaptable to projects of all sizes and nature. 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 utilizing the Guide for Process of Managing Risk on Rapid Renewal Projects (R09) at the appropriate point in the project development process, since the two products are complementary in nature.



What other DOTs have used these tools?

Managing Complex Projects has been used by several departments of transportation across the country, they include: Alaska, Arizona, Georgia, Iowa, Massachusetts, Michigan, Montana, New Hampshire, New Mexico, North Carolina, Washington and Wisconsin.

How can you learn more?

The report, *Guidebook: Project Management Strategies for Complex Projects*, is available at http://onlinepubs.trb.org/onlinepubs/shrp2/SHRP2_S2-R10-RW-1.PDF. For information, contact Carlos Figueroa at FHWA, carlos.figueroa@dot.gov, or Keith Platte, kplatte@aaashto.org. Updates on current implementation efforts can be found at www.fhwa.dot.gov/GoSHRP2 or <http://SHRP2.transportation.org>.

About SHRP2 Implementation



The second Strategic Highway Research Program is a national partnership of key transportation organizations: the Federal Highway Administration, the American Association of State Highway and Transportation Officials, and the Transportation Research Board. Together, these partners conduct research and deploy products that will help the transportation community enhance the productivity, boost the efficiency, increase the safety, and improve the reliability of the Nation's highway system.

Strategic Highway Research Program

U.S. Department of Transportation | Federal Highway Administration
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