

## A Strategic View of SHRP 2 Capacity Research Products

Two concepts are fundamental to SHRP 2:

- Even complex problems will yield to research on many fronts, and
- Full benefits of the research will only be realized when the products are applied in strategic groups.

While SHRP 2 research has four focus areas, the findings will not sort themselves into such tidy categories. The outcomes of the research and their applications will cross the traditional boundaries of function and discipline. This document matches expected products of the Capacity focus area and related Reliability and Renewal research to specific activities of state departments of transportation (DOTs), metropolitan planning organizations (MPOs), federal and state resource agencies such as the Environmental Protection Agency, U.S. Army Corps of Engineers, Fish & Wildlife Services, federal and state departments of natural resources, National Oceanographic and Atmospheric Administration, and other interested groups.

This packaging reflects the communities of transportation and environmental professionals and stakeholders interested in and affected by decisions related to increasing highway capacity to achieve society's mobility, environmental, economic, and social goals.

It also highlights the depth of the premier product of SHRP 2 Capacity research, the Collaborative Decision-Making Framework, which will integrate the results of 10 projects (marked with an asterisk), creating a robust framework to help people make decisions that stick.

Each grouping in this document includes:

- ~ The project number, which can be cross-referenced against the SHRP 2 Product Chart available online at [www.TRB.org/SHRP2](http://www.TRB.org/SHRP2)
- ~ The total research investment by activity
- ~ Identified communities of interest.



## Making Decisions

Project Number	Product	Investment (\$M)
C01	A web-based tool for reaching collaborative decisions when planning to increase highway capacity. This product, currently referred to as the Collaborative Decision-Making Framework will integrate the findings of other SHRP 2 research, indicated by asterisks.	\$4.25
C02	*Performance measurement framework for highway capacity decisions	\$0.825
C12	*Guidelines for accommodating public/private partnerships and nontraditional procurement processes in planning and environmental review	\$0.30
C19	*Case studies of expedited decision making	\$0.30
C22	Decision makers' guide to collaborative decision making	\$0.20
C15	*Guidelines for integrating freight considerations into collaborative decision making	\$0.30
L05	*Handbook on incorporating reliability performance measures into transportation planning and programming	\$1.50
Capacity Investment:		\$6.175
Reliability Investment:		\$1.50
Total:		\$7.675

**Identified communities:** state DOTs, MPOs, FHWA, cities, counties, NGOs, resource agencies, the public, freight shippers, receivers, and carriers, transportation professional associations and committees

\*These projects will be integrated into the Collaborative Decision-Making Framework

## Estimating Travel Behavior and Demand

Project Number	Product	Investment (\$M)
C04	New method for determining driver responses to congestion and pricing	\$1.00
C10A	Dynamic, integrated travel demand model sensitive to network feedback, with a sample data set and open source model and network software	\$1.40
C10B	Dynamic, integrated travel demand model with: mode choice capability, sensitivity to network feedback, sample data set and an open source model, highway and transit network software	\$2.60
C16	Establishing thresholds and conditions for effective smart growth choices related to travel demand	\$0.425
C20	Strategic plan for improving freight demand models and data	\$0.55
L04	Guide for incorporating travel time reliability into planning and simulation models	\$1.25
Capacity Investment:		\$3.635
Reliability Investment:		\$1.25
Total:		\$4.885

**Identified communities:** state DOTs, MPOs, public transit agencies, cities, counties, FHWA, FTA, the public, transportation professional associations and committees, freight shippers, receivers, and carriers, consultants

## Gauging the Economic Impact of Highways

Project Number	Product	Investment (\$M)
C03	*Handbook and web-based tool for estimating the likely economic impacts of new highway capacity; includes transit-oriented development and intermodal facilities	\$2.15
C11	Improved tools for measuring economic impact	\$0.60
Capacity Investment:		\$2.76

**Identified communities:** state DOTs, MPOs, transit agencies, cities, counties, FHWA, economic development agencies, shippers and carriers, consultants, the public, elected officials, transportation professional associations and committees,

## Protecting the Environment: wetlands, endangered species, greenhouse gases

Project Number	Product	Investment (\$M)
C02	*Performance measures for evaluating environmental impact	\$0.825
C06A	*Business model and tools for an ecological approach to mitigation. Symposium	\$0.70
C06B	*Template for ecological assessment, ecosystem services credit system	\$0.80
C09	*Handbook for incorporating greenhouse gas emissions into transportation decision making	\$0.80
Capacity Investment:		\$3.125

**Identified communities:** state DOTs, MPOs, state and federal resource agencies, environmental NGOs, FHWA, the public, transportation professional associations and committees, elected officials, consultants

## Moving Freight

Project Number	Product	Investment (\$M)
C15	*Guide for integrating freight into highway decision making	\$0.30
C20	Strategic plan for improving freight demand modeling and data	\$0.55
Capacity Investment:		\$0.85

**Identified communities:** state DOTs, MPOs, cities, counties, resource agencies, FHWA, the public, transportation professional associations and committees, freight shippers, receivers, and carriers, consultants

## Serving Community Goals

Project Number	Product	Investment (\$M)
C01	*Web-based tools for collaborating on highway capacity decisions	\$4.25
C02	*Measures of highway impacts on communities	\$0.825
C08	*Strategies for linking community visioning to transportation decision making and environmental protection	\$0.80
C16	Thresholds and conditions for effective smart growth policies related to travel demand	\$0.425

Capacity Investment: \$6.30

**Identified communities:** state DOTs, MPOs, public transit agencies, cities, counties, NGOs, resource agencies, FHWA, FTA, the public, freight shippers, receivers, and carriers, transportation professional associations and committees

## Operating Highways Efficiently

Project Number	Product	Investment (\$M)
C05	Guide and tools for analyzing the effect of operations, technology, and design on highway capacity	\$1.00
L02	Guidebook and data requirements for establishing programs to monitor travel time reliability	\$1.80
L03	Procedures for analyzing the impact of congestion mitigation strategies	\$1.75
L11	Alternative operating strategies to improve travel time reliability	\$1.80
R11	Strategies for managing renewal construction at corridor and network levels to minimize disruption	\$1.50

Capacity Investment: \$1.00  
Reliability Investment: \$4.55  
Renewal Investment: \$1.50  
Total: \$7.05

**Identified communities:** state DOT operations managers, traffic operation center managers, traffic engineers, work zone designers, ITS program managers, consultants

## Testing New Procedures

Project Number	Opportunities	Investment (\$M)
C18	Several states and MPOs will have the opportunity to pilot test the Collaborative Decision-Making Framework in cooperation with research teams.	\$1.25
C21	Several states will have the opportunity to pilot test the ecological approach to mitigating environmental effects of highway projects to test its acceptance by state and federal resource agencies.	\$2.5

Capacity Investment: \$2.5

**Identified communities:** all participants in transportation decision making and environmental review