Capacity Research Program
Collaborative Decision-making Framework

SHRP 2
April 24, 2008
The Overall SHRP 2 Capacity Goal

To develop approaches and tools for systematically integrating environmental, economic, and community requirements into the analysis, planning, and design of new highway capacity.
Underlying Principles Of SHRP 2 Capacity Research

• By taking a systems approach to collaborative decision making, we can deliver better projects and reduce the risk of delays and the associated cost increases
• The collaborative decision-making framework will systematically incorporate principles in ISTEA, TEA-21, and SAFETEA-LU
• Successful practices will be easier to replicate
• Framework focuses on decision points; each state reaches those points in its own way
• Ensure that the right people are at the table at the right time with the right information
The Capacity Research Program

• 17 Projects
• $18 million
• Four Themes/Products
  – Collaborative Decision Making Framework
  – Surface Environmental Protection
  – Modeling partnership
  – Economic Impacts
The Collaborative Decision-Making Framework

• 9 Projects, $7.825 mil
  – Collaborative Framework and Integration (C01&C07)
  – Systems-based Performance measures (C02)
  – Community visioning and impacts (C08)
  – Greenhouses gases (C09)
  – Effect of PPPs on decision-making and planning (C12)
  – Full Fiscal Impact of Highways (C13)
  – Multi-Agency Change Management (C14)
  – Trucks and Freight (C15)

• This is a re-casting of the way decisions are reached. Revolutionary in its implications.

• Will ultimately have a searchable, web presence

• Audience: DOTs, Transportation Commissions, MPOs, Public.
Framework Description

• Framework Definition
  – Series of key decision points properly sequenced and detailed to support collaborative decisions for capacity projects

• Key decision points:
  – Steps in the decision making process where general work activities require approval from higher levels of authority or where consensus needs to be reached among many decision makers before the project can advance
Description: Core Processes

Subprocesses (examples)
- Air Quality Conformity
- Financial Constraint

Influencing Processes (examples)
- Conservation Planning

Key decision points take place along this process

SHRP2
STRATEGIC HIGHWAY RESEARCH PROGRAM

KDP
TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES
Streamlining

- There are many key decision points as shown in the next slide. They are being identified through a series of 6 workshops with State DOT, MPO, and federal representatives.
- Opportunities to speed up the process will be identified: early and effective consultation, doing KDPs in parallel when possible, not redoing steps, and handing off information from one step to the other.
- SHRP 2 must work within current laws and regulations
Linkages

- Explicit KDP Linkages between:
  - Visioning and long range planning (LRP)
  - LRP and Corridor Planning
  - LRP and Programming
  - LRP and NEPA
  - Corridor Planning and Programming
  - Corridor Planning and NEPA
  - NEPA and Permitting

- Recognized importance of linking:
  - Solution screening between phases
  - Project identification between LRP, Corridor Planning and Programming
Design Goals

• Establish tiered decision making approach to capacity improvements which encourages binding decisions at the earliest possible point even when these decisions are only partial or qualified due to timing or level of information available to support them.

• Establish a decision making approach which is built on early and on-going involvement of formal decision makers and individuals in positions of authority who have the potential to veto or significantly impact the timely and cost effective delivery of transportation improvements.

• Establish a decision making approach which identifies participant roles and responsibilities including the scope and extent of decision making responsibility at each key decision point.

• Establish collaborative decision making practices.
Design Goals

• Encourage a decision making approach which evaluates transportation needs within broader community and natural contexts.

• Integrate land planning and development policy.

• Integrate capital improvement planning.

• Address sustainability issues to the greatest extent possible.

• Integrate protection and enhancement of the human and natural environment.

• Support community goals and visions.
Framework Content

For every KDP in the final Collaborative Decision Making Framework:

• Linkages to other KDPs/other processes
• Decisions made at this step
• Roles and Responsibilities of the decision-makers
• Stakeholder/project champion roles
• Supportive data, tools, and technology
• Linkages to CO2 Performance Measurement Framework
• Related influencing and sub-processes
• Primary Products of this step
• Associated Best Practices
An Example of Linkages and Opportunities for Improvement
Surface Environmental Protection

• Ecological Integration of Conservation, Highway Planning, and Environmental Permitting: $1.5 million (C06A&B)
  – Wetlands
  – Endangered Species
  – Habitats
  – Water Quality
  – Multi-purpose credits system

• Audience -- DOTS, Resource Agencies, Public, NGOs,
Advanced Modeling and Networks Partnership

• 3 Projects $5.5 mil
• Partnerships with an MPO or State to Operationalize and test an advanced demand model with a time-sensitive network
• Embed SHRP 2 products C04 on behavioral response to congestion and pricing and C05 on sustainable throughput increases that can be achieved with corridor management
• Audience – modelers, analysts, decision makers
Economic Impacts of Transportation Investments

- C03 - 50 + case studies in a typology and case-based reasoning framework. Web-based analytical product
- C11 - Integrate case-based and analytical approaches
- Audience – non-economists, decision makers
Opportunities for State Participation

• C01 – Workshops (now) and Table top exercises (fall)
• C02 – FYI, Performance measures framework out this spring
• C03 – Suggestions for economic impact case studies: now
• C05 – Need good arterial flow data: now
### EXHIBIT 1: CAPACITY PROJECTS

<table>
<thead>
<tr>
<th>Title</th>
<th>Budget millions</th>
<th>RFP</th>
<th>Ann. Funds</th>
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</thead>
<tbody>
<tr>
<td><strong>2006 Funding</strong></td>
<td></td>
<td></td>
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<tr>
<td>C01 A Framework for Collaborative Decision Making on Additions to</td>
<td>2.6</td>
<td>A</td>
<td></td>
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<tr>
<td>Highway Capacity (Includes concepts of watershed and habitat</td>
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<tr>
<td>preservation and environmental stewardship)</td>
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<tr>
<td>C02 Systems-Based Performance Measurement Framework for Highway</td>
<td>$0.825</td>
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<td>Capacity Decision Making.</td>
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<tr>
<td><strong>2007 Funding</strong></td>
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<tr>
<td>C03 Interactions between Transportation Capacity, Economic Systems,</td>
<td>$1.75</td>
<td>J</td>
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<tr>
<td>and Land Use merged with Integrating Economic Considerations in</td>
<td></td>
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<tr>
<td>Project Development</td>
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<tr>
<td>C04 Improving Our Understanding of Highway Users and the Factors</td>
<td>$1.0</td>
<td>M</td>
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<tr>
<td>Affecting Travel Demand (Emphasis on pricing and congestion)</td>
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<tr>
<td>C05 Understanding the Contribution of Operations, Technology, and</td>
<td>$1.0</td>
<td>J</td>
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<tr>
<td>Design to Meeting Highway Capacity Needs</td>
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## 2009 CAPACITY PROJECTS

<table>
<thead>
<tr>
<th></th>
<th>Project Description</th>
<th>2009 Funding</th>
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<tbody>
<tr>
<td>C10</td>
<td>Partnership to Develop an Integrated, Advanced Travel Demand Model and a Fine-grained, Time-Sensitive Network.</td>
<td>$3.5 M</td>
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<tr>
<td>C11</td>
<td>Development of Improved Economic Analysis Tools Based on Recommendations from project C03 (2)</td>
<td>$1.0 M</td>
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<tr>
<td>C12</td>
<td>The Effect of Public-Private Partnerships and Non-Traditional Procurement Processes on Highway Planning, Environmental Review, and Collaborative Decision Making</td>
<td>$0.3 M</td>
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<tr>
<td>C13</td>
<td>Integrating Full Cost Analysis and Fiscal Impact Analysis into Collaborative Decision Making</td>
<td>$0.4 M</td>
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## 2010 CAPACITY PROJECTS

<table>
<thead>
<tr>
<th>Project Code</th>
<th>Project Description</th>
<th>2010 Funding</th>
<th>Total</th>
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<tbody>
<tr>
<td>C14</td>
<td>Developing A Multiagency Change Management Framework</td>
<td>$0.4 M</td>
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<td>C15</td>
<td>Integrating Freight Considerations into Collaborative Decision Making for Additions to Highway Capacity</td>
<td>$0.3 M</td>
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<td>C16</td>
<td>The Effect of Smart Growth Policies on Travel Demand</td>
<td>$0.425 M</td>
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<td>C17</td>
<td>Sustaining Public Support for Transportation Investments</td>
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<td></td>
<td><strong>Total</strong></td>
<td><strong>$18.00</strong></td>
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For More Information

www.trb.org

Go to SHRP 2 Capacity
Capacity Research Plan
Projects data base (RFPs and Status)