



A Framework for Collaborative Decision Making



**Steve Andrle and Neil Pedersen
Transportation Research Board**

What is SHRP2?

Save lives. Save money. Save time.



- \$218 million, federally funded research program to address critical transportation challenges:

- Making highways safer
- Fixing deteriorating infrastructure
- Reducing congestion



- Collaborative effort of AASHTO, FHWA, and TRB



- Aims to advance innovative ways to plan, renew, operate, and improve safety on the Nation's highways

SHRP 2 Focus Areas



- **Capacity:** Systematizing collaborative decision making to achieve better, faster project decisions
- **Safety:** Fielding the largest-ever naturalistic driving study to reduce crashes and save lives through understanding driver behavior
- **Renewal:** Making rapid, innovative construction possible for “ordinary” projects
- **Reliability:** Providing management and technical tools to reduce congestion through operations

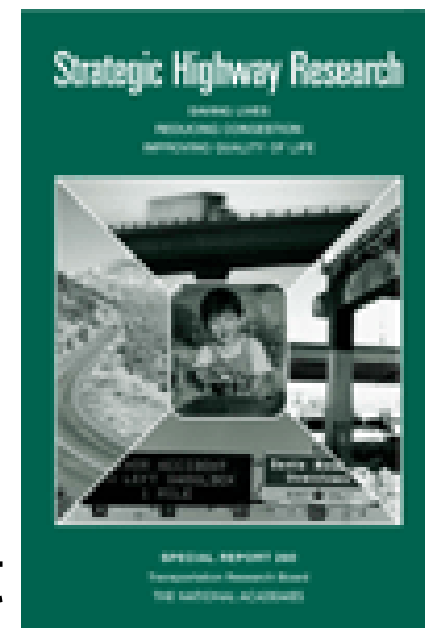
Who will benefit?

- Motorists
- State/local transportation agencies
- Metropolitan Planning Organizations
- Highway designers, suppliers, and construction contractors
- Freight industry
- Environmental agencies
- Communities and businesses
- Emergency medical services
- Railroads



Capacity Program Background

- Charge from Congress:
“Develop approaches and tools for systematically integrating environmental, economic, and community requirements into the analysis, planning, and design of new highway capacity.”
- Highway expansion projects were too often being delayed or were not able to obtain the necessary approvals in the planning and environmental review process.



Anticipated Outcomes and Value Added From Capacity Research

- Get the right people at the table at the right time with the right information
- Make decisions that “stick”
- Avoid costly and time-consuming do-loops
- Serve environmental, community, and economic needs more closely
- Expedite delivery of new capacity





SHRP 2 C01 Research

Janet D'Ignazio
ICF International

C01 Research: Collaborative Decision Making Framework



Charge from Congress:

“Develop approaches and tools for systematically integrating environmental, economic, and community requirements into the analysis, planning, and design of new highway capacity.”

Research Approach

- Compile lessons learned from case studies of successful delivery of 23 large and complex capacity expansion projects from across the United States
- Validate and expand research by engaging experienced professionals in multi-agency workshops (state DOTs, MPOs, FHWA, federal resource agencies)

Result: Systematic and collaborative approach designed by practitioners for practitioners



Case Studies

- 4 Comprehensive
 - Entire decision making process starting with long range or corridor plan through NEPA and permitting
- 11 Phase focused
 - 7 Long range or corridor planning studies
 - 4 NEPA/permitting
- 8 Solutions screening focused
 - Decision making related to selection of preferred option from those considered
 - Visioning, planning, NEPA

US 285: Using CSS Approaches to Highway Capacity



Problem

- Widening an aging rural highway connecting Denver to mountains
- Historic and natural resources and scenic beauty
- Frequent congestion and double accident rate for similar facilities

Approach

- Commitment to environmental stewardship
- Engagement of agencies, communities and influential NGOs into collaborative decision making process
- Corridor based feasibility study explicitly linked to NEPA
- Early identification of environmental and community issues
- In-field problem solving with representatives from all key partners
- Merger of multiple regulatory processes
- Broad and inclusive value engineering process

US 285: Using CSS Approaches to Highway Capacity



Outcomes

- Strong support from all groups to widened 14 mile corridor from 2 to 4 lanes including adding access control
- Footprint and design maximized avoiding impacts and maintained scenic aspects
- Efficiency gained by the continuity and minimization of time gaps in the planning and project development processes
- Consensus on safety driven “break-out” project that was advanced in NEPA under CE
- Measureable cost savings of \$59 million

“The mergers and ultimate CSS process was a definite beneficial trade-off. Time and money was saved in the NEPA process, significantly less environmental impact was achieved, [and]...CDOT got major points with the public and emerged with very favorable reputation.”

I-710: Community Driven Plan for Freight Corridor



Things were not going well. The report being delivered on progress made was accurate and supportive, but no one was buying it. Sixty or seventy public involvement sessions, and he had never seen the people in this room before. The policy makers were obviously anxious; feeling unprepared for what was going to happen next. A year and a half of study activity was about to go up in flames.

I-710 Lessons Learned



- Strong technical analysis and thorough public involvement process does not guarantee smooth decision making
- Decision makers willingness to reassess and redirect decision making process is powerful tool to maintaining momentum
- Willingness to collaborate with stakeholders within the context of the actual decision making process makes a significant difference

Problems Identified



1. Projects were often delayed due to key decision makers
 - becoming involved late in the process,
 - not agreeing with decisions made earlier in the process,
 - forcing decisions to be revisited.
2. Failure to agree on the decision making process and criteria (performance measures) to be used resulted in delays and challenges to decisions
3. Alternatives added late in the process due to failure to identify full range of alternatives earlier caused delays
4. The complex planning and project development process is time consuming and affords many opportunities for missteps

Problems Identified

5. Conflicts resulting from poor integration of transportation plans with
 - land use plans,
 - environmental plans,
 - economic development plans, and
 - community plans
6. Key segments of the public became involved late in the process, forcing previous decisions to be revisited



Problems Identified

7. Conflicting goals between transportation and environmental resource agencies resulted in intractable disagreements and failure to get approvals
8. The price for failure to work together has been endless
 - redo loops
 - lawsuits
 - delays
 - cost escalation



Conclusions of C01 Research



1. The transportation planning and project development process as practiced and as defined in federal statutes and regulations is an elaborate and complex process that involves a series of decision points
2. Many of the key decisions that enable a project to be approved should be made before the NEPA process begins
3. Collaborative decision-making is a key to success, supported by an effective strategy for enhancing the environment, improving economic vitality, and achieving community goals
4. Decisions need to be agreed to by key decision makers at each point in the process and not revisited

Success Factors Identified from Research

1. Collaborate with agency partners and the public
2. Use performance measures and evaluation criteria
3. Structure decision making/use a formal process
4. Integrate transportation decision making with land use and environmental issues
5. Link phases of the transportation decision-making process
6. Manage risks



Direction of the Technical Coordinating Committee



To create a systematic approach to support practitioners we need to:

- Document the decision points in a process that follows the steps used in successful capacity expansion projects
- Embed methods to integrate transportation, environmental, community, and economic planning into decision points
- Organize information on lessons learned from case studies of successful projects around the decision points in the process
- Make information easily accessible to professionals in the field

Decision Guide



- Created the Decision Guide as framework for collaboration in transportation long range and project planning
- Organizes research on collaborative practices and supports in four phases of decision making
 - Long Range Planning
 - Programming (TIP and STIP)
 - Corridor Planning
 - Environmental Review/Permitting

The Decision Guide

LONG RANGE TRANSPORTATION PLANNING



LRP-1 Approve Scope of LRTP Process	LRP-2 Approve Vision and Goals	LRP-3 Approve Evaluation Criteria, Methods and Measures	LRP-4 Approve Transportation Deficiencies	LRP-5 Approve Financial Assumptions	LRP-6 Approve Strategies	LRP-7 Approve Plan Scenarios	LRP-8 Adopt Preferred Plan Scenario	LRP-9 Adopt Finding of Conformity by MPO
LRP-10 Adopt LRTP by MPO	LRP-11 Approve Conformity Analysis							

PROGRAMMING



PRO-1 Approve Revenue Sources	PRO-2 Approve Methodology for Identifying Project Costs and Criteria for Allocating Revenue	PRO-3 Approve Project List drawn from Adopted Plan Scenario	PRO-4 Approve Project Prioritization	PRO-5 Reach Consensus on Draft TIP	PRO-6 Adopt TIP by MPO	PRO-7 Approve TIP by Governor and Incorporate into Draft STIP	PRO-8 Reach Consensus on Draft STIP	PRO-9 Approve STIP with Respect to Conformity and Fiscal Constraint
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CORRIDOR PLANNING



COR-1 Approve Scope of Corridor Planning Process	COR-2 Approve Problem Statements and Opportunities	COR-3 Approve Goals for the Corridor	COR-4 Reach Consensus on Scope of Environmental Review & Analysis	COR-5 Approve Evaluation Criteria, Methods and Measures	COR-6 Approve Range of Solutions Sets	COR-7 Adopt Preferred Solution Set	COR-8 Approve Evaluation Criteria, Methods & Measures for Prioritization of Projects	COR-9 Adopt Priorities for Implementation
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ENVIRONMENTAL REVIEW / NEPA MERGED WITH PERMITTING



ENV-1 Reach Consensus on Scope of Environmental Review	ENV-2 Approve Notice of Intent	ENV-3 Approve Purpose and Need / Reach Consensus on Project Purpose	ENV-4 Reach Consensus on Study Area	ENV-5 Approve Evaluation Criteria, Methods and Measures	ENV-6 Approve Full Range of Alternatives	ENV-7 Approve Alternatives to be Carried Forward	ENV-8 Approve Draft EIS with Conceptual Mitigation	ENV-9 Approve Resource Agency Public Notice
ENV-10 Approve Preferred Alternative / LEDPA	ENV-11 Approve Final Jurisdictional Determination	ENV-12 Reach Consensus on Avoidance and Minimization for the LEDPA	ENV-13 Approve Final EIS	ENV-14 Approve the ROD	ENV-15 Render Permit Decision and Approve Avoidance and Minimization			

Key decision information

- Key policy questions or issues decision makers should consider
- Integration with other planning processes (e.g. land use, conservation)
- Outcomes or products from this decision making step
- Roles and responsibilities of the formal decision makers (state DOTs, MPOs, FHWA and federal resource agencies)
- Stakeholder or project champion roles and relationships
- Supporting data, tools and technology
- Links to relevant case studies and supporting resources (e.g. FHWA and AASHTO Center for Environmental Excellence websites)

Dissemination Challenge



Challenge to make this wealth of information accessible to users:

- There are many paths for projects to follow
- Significant benefit from linking the underlying case studies, library of resources, and external sources to specific key decisions
- Opportunity to link other Capacity Program research related to transportation decision making by mapping it to the Decision Guide

Solution was to create beta test version of an interactive, web-based tool

- *Transportation for Communities – Advancing Projects Through Partnerships (TCAPP)*

Assessment tools



- TCAPP includes three assessment tools
 - Collaborating with partners
 - Collaborating with stakeholders
 - Expediting project delivery
- Designed to help practitioners pinpoint problems and issues affecting project delivery
- Limited number of short answer questions to provide quick feedback

Partnership and Stakeholder Collaboration Assessments

- **Partner collaboration assessment categories**
 - Process steps
 - Data and information availability
 - Organizational supports
 - Tools and technology
 - Decision making authority
 - Participant stability
 - Role clarity
 - Shared goals
 - Sense of ownership
- **Stakeholder collaboration assessment categories**
 - Stakeholder communication
 - Stakeholder understanding
 - Stakeholder commitment

Expediting project delivery assessment

Significant barriers to project delivery

- Conflicting resource values
- Ineffective internal communication
- Ineffective Section 106 consensus
- Lengthy review/revision cycles
- Inefficient public engagement and support
- Issue arising lack cause project change
- Negative or critical coverage from the media
- Stakeholder controversy and opposition
- Relocation process delays construction
- Unusually large and complex project or program
- Avoiding policy decisions through continual analysis
- Difficulty in getting agreement on impacts/mitigation
- Inability to maintain agreement
- Focus on a single issue
- Issues arising late in process
- Lack of dedicated staff

Assessment Approach



For each of these categories the assessment:

- Provides statements to rank from “strongly agree” to “strongly disagree”
- Uses answers to provide “effectiveness score” (strong, average, weak)
- Describes potential risks to project delivery
- Suggests strategies to mitigate risks

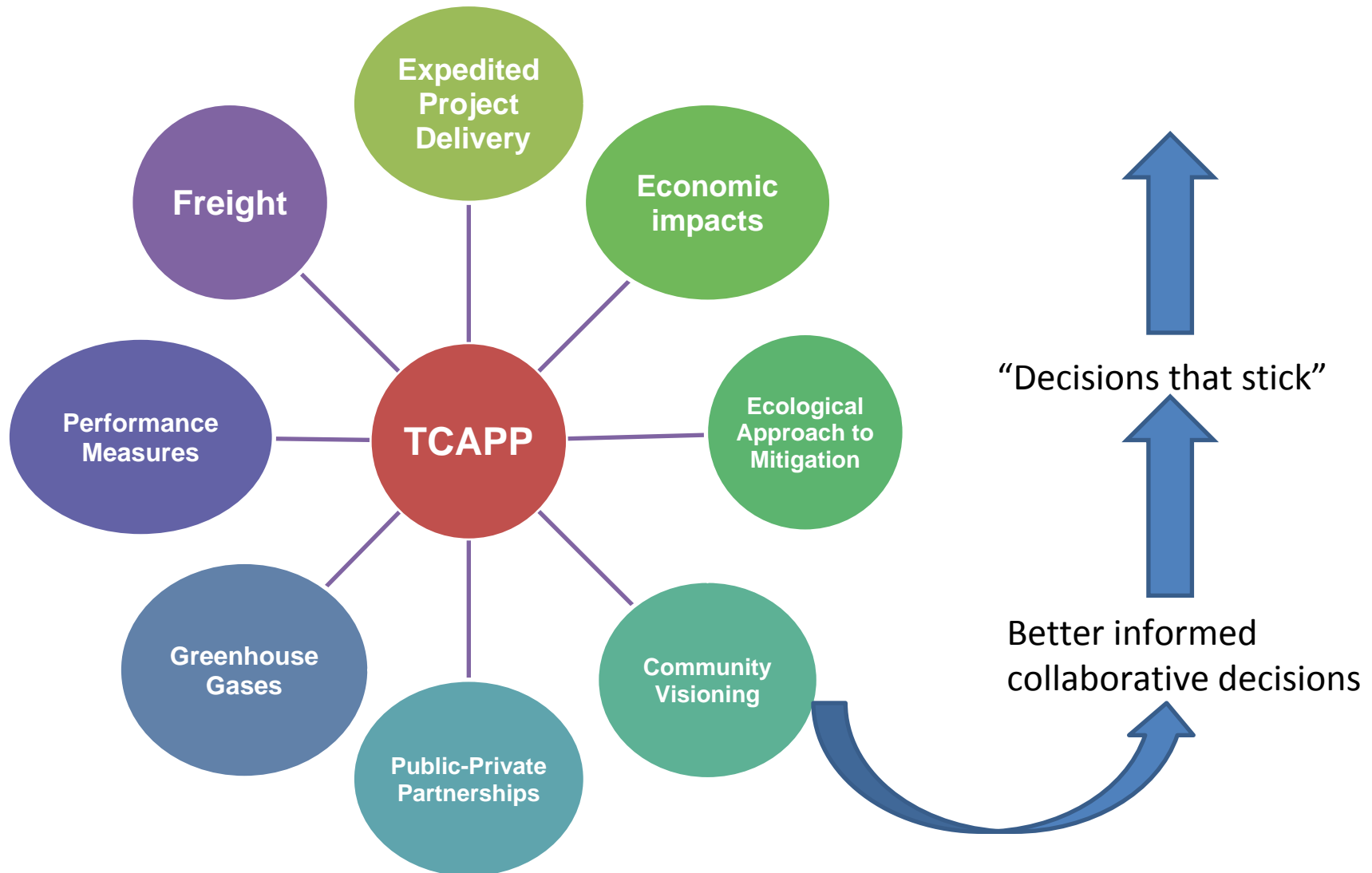
Related Capacity Program Research



Unifying themes of topics covered in TCAPP:

- Address or inform elements of transportation planning
- Require collaboration with entities outside the state DOT or MPO
- Many are relatively new planning topics or topics that are changing fast
- Each product is organized by the key decisions outlined in the Decision Guide

TCAPP: Tool for research dissemination





Pilot Testing of TCAPP

Steve Andrle

SHRP2 Capacity Program

TCAPP Pilot Tests



- Eight competitively-selected pilot tests
 - A public agency partner was required.
- Four pilots ran from September 2010 to August 2012.
 - Agencies were instructed to test both the content of TCAPP and the functionality of the web site
 - Very early review so content was changing as pilots provided comments
- Additional four pilots ran from April 2013 to July 2014
 - Agencies were instructed to focus primarily on the usefulness of the content.
 - Some changes were made to TCAPP in this period, but it was a more mature product than in the first set of pilots

Round 1 TCAPP Pilot Tests



- Washington State DOT
 - Corridor alternatives study, new toll freeway, SR 505
- Puget Sound Regional Council
 - Revised project selection methodology
- Minnesota DOT
 - A complete streets plan for Grand Rapids
- Peak's Peak Area Council of Governments
 - Environmental component of long range plan update

Round 2 TCAPP Pilot Tests



- Thomas Jefferson Planning District Commission (Charlottesville) and Virginia DOT
 - Long range, performance-based planning with enhanced public involvement
- Metro Regional Government, Portland, Oregon
 - Inter-jurisdictional corridor study: Sustainable Decisions (238th/242nd/Hogan Corridor)
- South Carolina, DOT
 - Coordination (environmental) on Small Projects: Hoopstick Creek Bridge
- Policy consensus Institute and Oregon DOT
 - Community of Practice for Greenhouse Gas Scenario Planning

Components tested

- **Self assessment of collaboration:** Gauge the strength of partner and stakeholder collaboration
- **Stakeholder portal:** Establish the definition, roles, and responsibilities of stakeholders
 - Almost all of pilots discovered that it was more difficult than expected to define roles and responsibilities of stakeholders
- **Decision Guide:** Determine its usefulness as a framework for real-world projects
- **Applications:** Determine the usefulness of special topics – frequently encountered planning and environmental review situations
- **Library:** applicability of case studies, reports, and linked sites.
- **Integrated Ecological Framework:** early collaboration with environmental agencies

Rebranding



- In 2013 AASHTO sponsored four regional workshops to assess the value of TCAPP as a tool for practitioners resulting in rebranding TCAPP to **PlanWorks**.
- The new name is used in the following presentation on a pilot test of TCAPP
- The Federal Highway Administration and AASHTO will describe the evaluation later in this webinar.



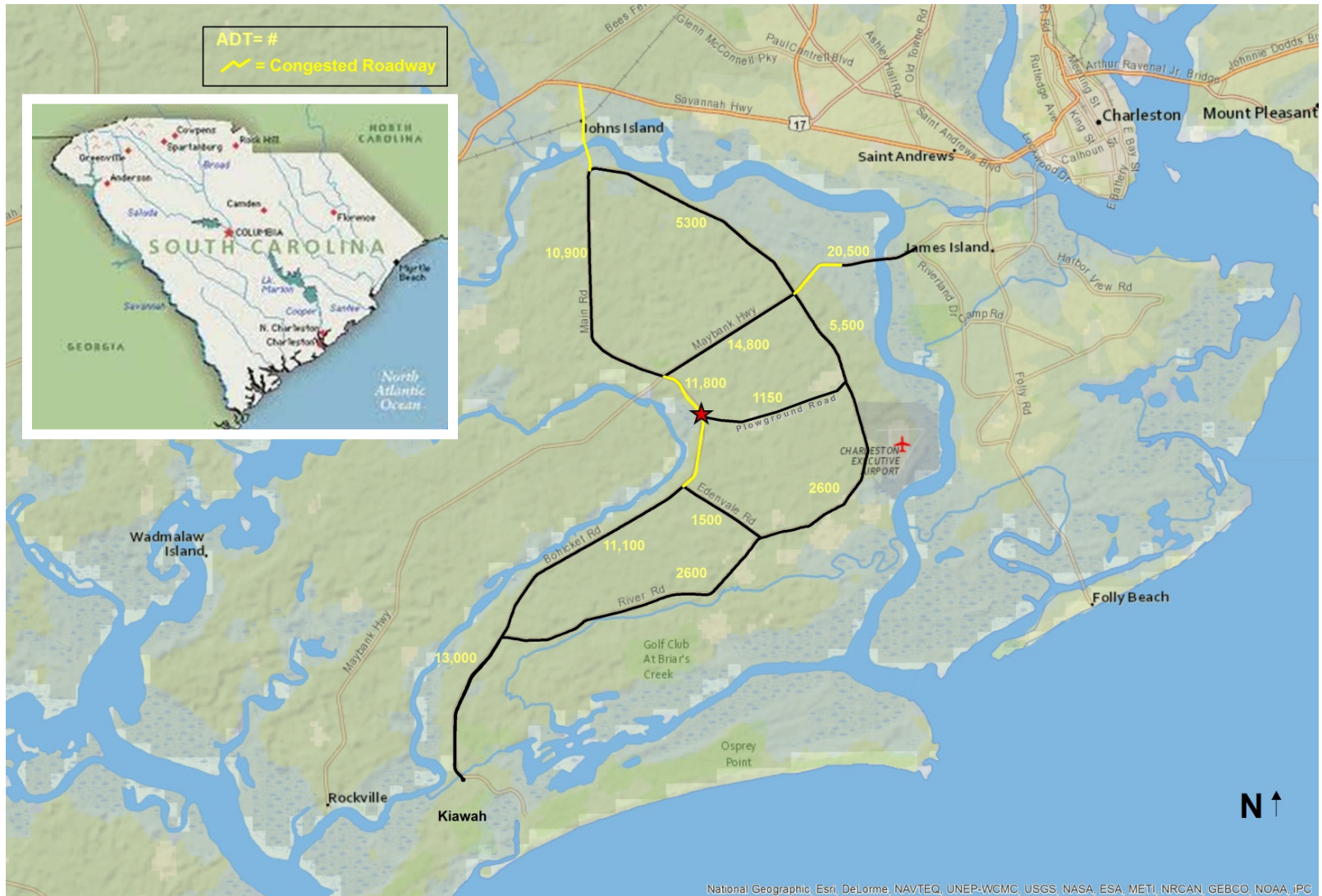
USING PLANWORKS TO IMPROVE AGENCY COORDINATION FOR SMALL PROJECTS :

Hoopstick Creek Bridge Replacement
Johns Island, South Carolina

Will McGoldrick, SCDOT

Project Location:

Hoopstick Creek Bridge Replacement



Pilot Project: Hoopstick Creek Bridge Replacement



Pilot Project: Hoopstick Creek Bridge Replacement



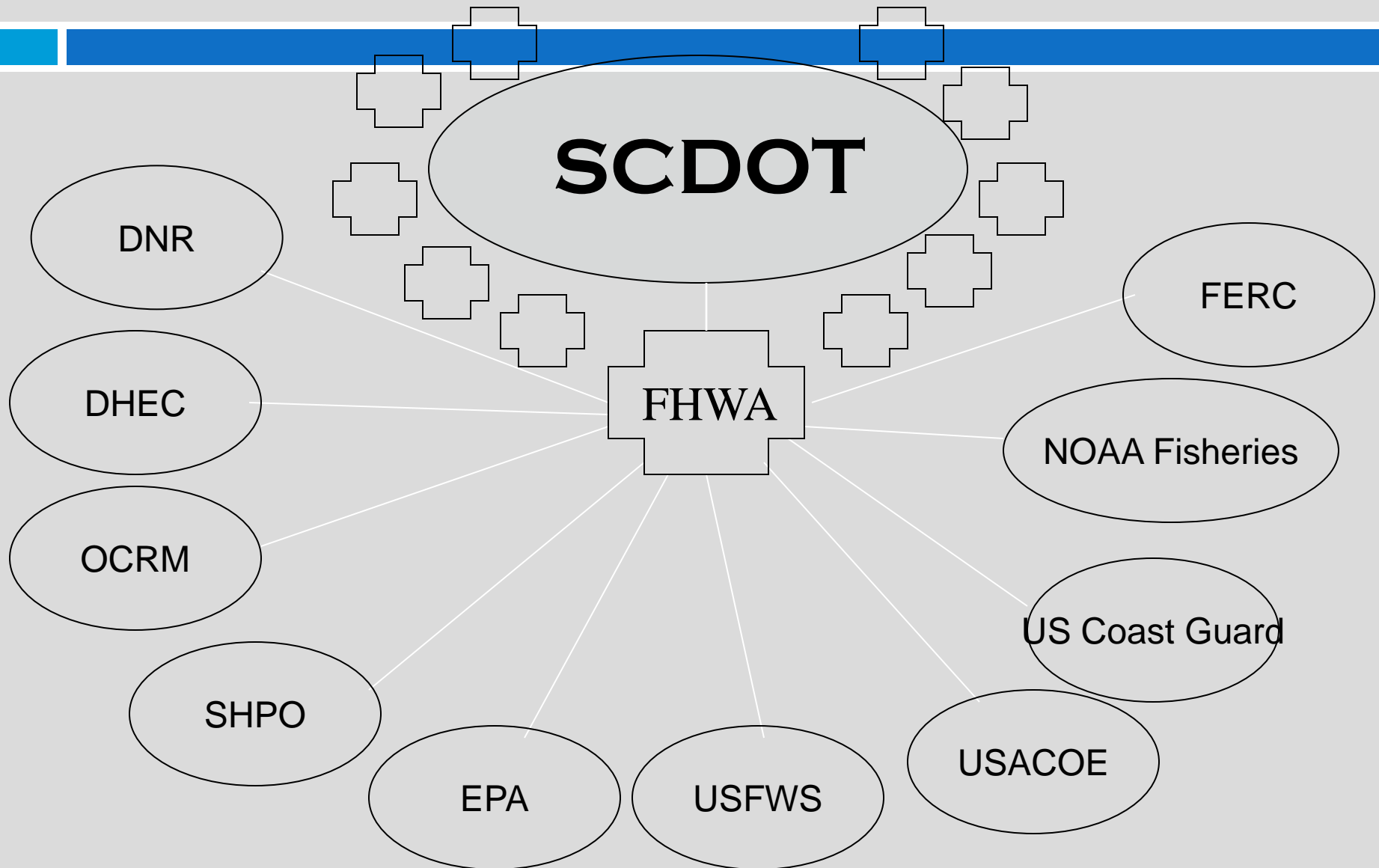
Pilot Project: Hoopstick Creek Bridge Replacement



Pilot Project: Hoopstick Creek Bridge Replacement

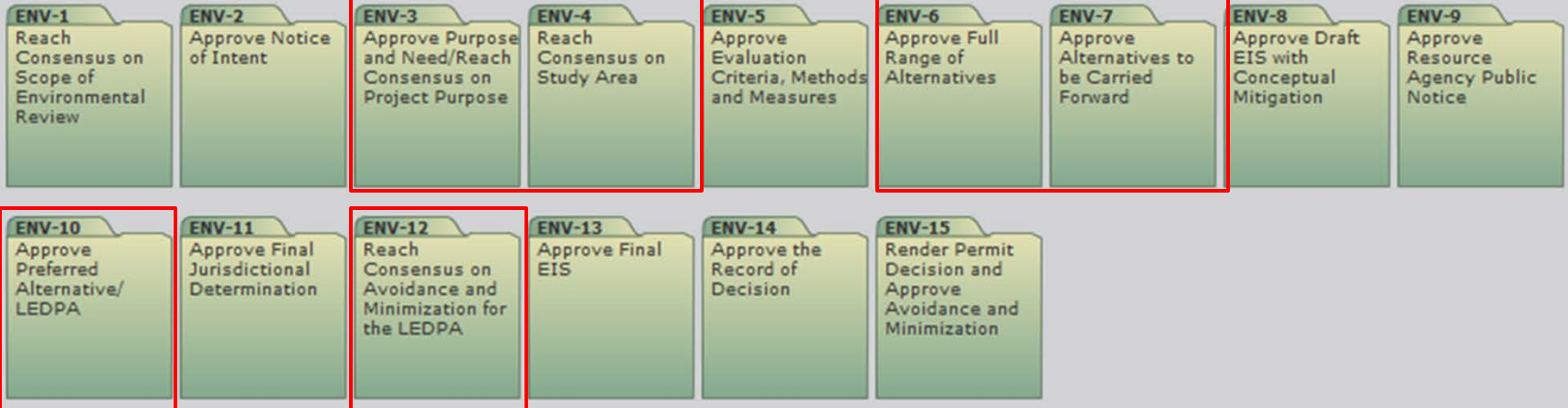


Partners & Stakeholders

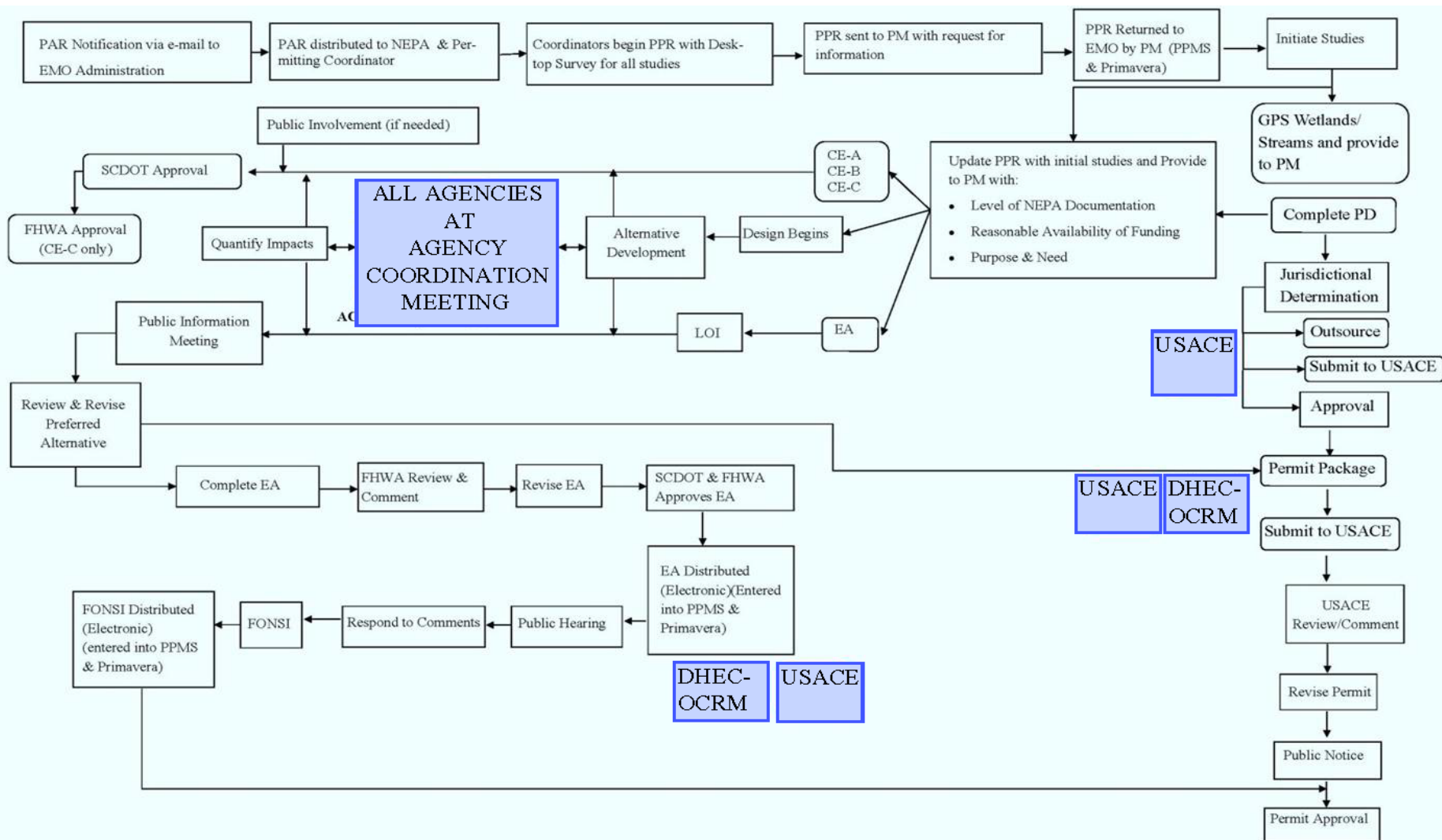


Approach

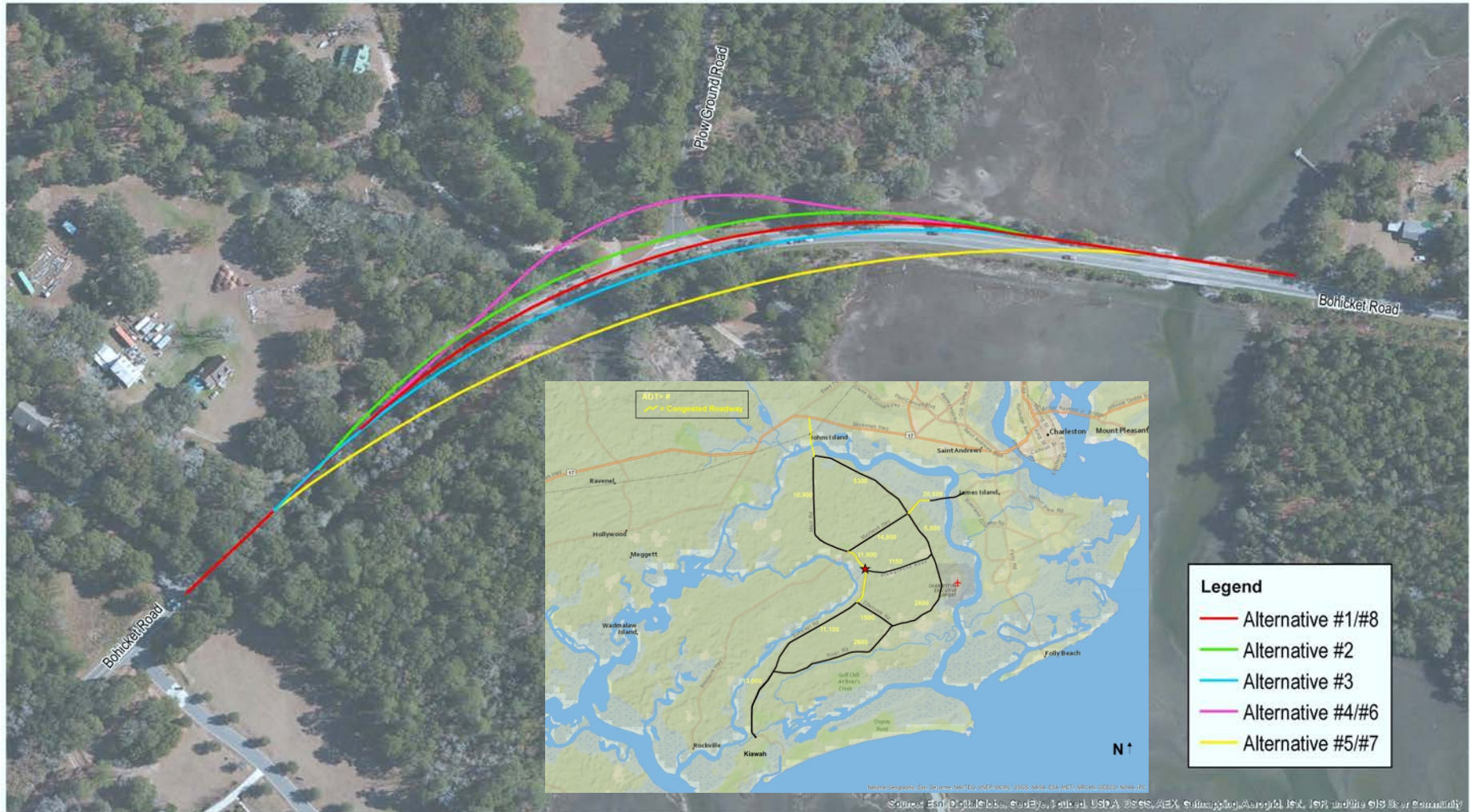
ENVIRONMENTAL REVIEW/NEPA MERGED WITH PERMITTING



Outcomes: EMO Permitting & NEPA Flow Chart Revised



ENV-6: Hoopstick Creek Bridge Replacement Alternatives



Feedback

What are the biggest obstacles to interagency coordination during the environmental/NEPA process?

Time for submittals

Need to have a representative from each agency at meetings

Cannot complete consultation until final plan is presented (conflicts to DOT/FHWA process)

Communicating what each agency needs

Having enough information to provide comments on

Lack of communication

Agency concerns and comments not always incorporated into project designs

Not receiving constructive comments from agencies during early coordination

Not being engaged with resource agencies early in the project development process

Summary

- Project Process...
- Roles...
- Participation...

COMMUNICATION



PlanWorks

Better Planning, Better products

Matt Hardy

Program Director for Planning and Policy

AASHTO

Gary Jensen

Research Implementation Team Leader

FHWA Office of Human Environment

- AASHTO Assessment
- PlanWorks Branding
- Expert Task Group
- IT Development
- Next Steps for Implementation

AASHTO Assessment



- Four regional workshops in 2013
 - 37 State DOTs
 - 21 MPOs
- Key findings:
 - Need for improved navigation/design
 - Need for long-term maintenance with continued user input
 - Need to rebrand

Rebranding



- Branding Criteria:
 - Short & Simple
 - Understandable
 - Inspiring
 - Visual
- Market Research:
 - Select new name/tag line
 - Select new logo
 - Select color palette

Rebranding



- **Reasoning:**
 - Simple and succinct
 - Cannot be turned into an acronym
 - Meets branding criteria

IT Status



- Approved by FHWA for hosting
- FHWA has funded the conversion and improvement of PlanWorks
- FHWA's IT contractor has dedicated resources working on this effort
- PlanWorks design underway

FHWA Expert Task Group

The logo graphic for the FHWA Expert Task Group, featuring several parallel white diagonal lines on a blue background that converge towards the top right corner.

- Forum assembled to provide individual advice
- Timely input on the development and implementation
- Provide technical and user expertise
- Guide future enhancements of PlanWorks

PlanWorks Implementation



- Knowledge Transfer Activities
- Implementation Planning Workshop(s)
- Implementation Assistance Program

For Additional Information

Email: goSHRP2@dot.gov

SHRP2 Research:
www.TRB.org/SHRP2

SHRP2 at FHWA:
<http://www.fhwa.dot.gov/goshrp2/>

SHRP2 at AASHTO:
<http://SHRP2.transportation.org>

TCAPP Beta Test Site
www.transportationforcommunities.com





Thank you