



Capacity Solutions Retrospective Workshop

Park City, Utah

May 20 – 21, 2019



U.S. Department of Transportation
Federal Highway Administration

AMERICAN ASSOCIATION
OF STATE HIGHWAY AND
TRANSPORTATION OFFICIALS

AASHIO

Workshop Agenda – May 20, 2019

Time	Topic
8:00 am	Welcome and Introductions
8:30 am	SHRP2 Overview
9:00 am	Product Panels
10:30 am	<i>BREAK</i>
11:00 am	Product Panel Continued
12:30 pm	Working Lunch
2:00 pm	Small Group Discussions
2:20 pm	Report Out
2:40 pm	<i>BREAK</i>
3:00 pm	Small Group Discussions
4:00 pm	Report Out
4:30 pm	Day One Wrap Up
5:00 pm	Adjourn and Dinner with Colleagues



SHRP2 Overview

- Matt Hardy, AASHTO
- Brian Gardner, FHWA



Focus Areas



Safety: fostering safer driving through analysis of driver, roadway, and vehicle factors in crashes, near crashes, and ordinary driving



Reliability: reducing congestion and creating more predictable travel times through better operations

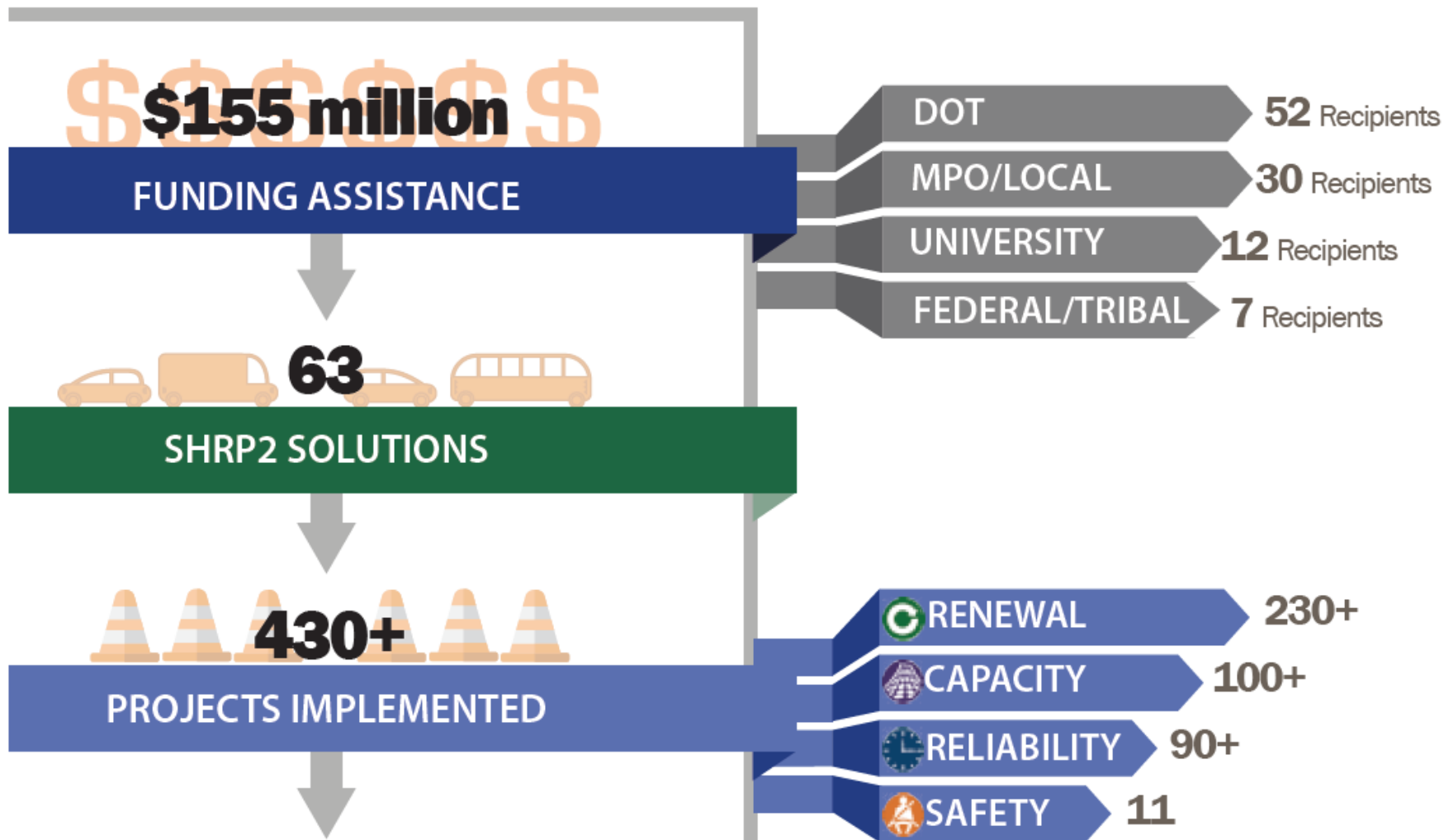


Capacity: planning and designing a highway system that offers minimum disruption and meets the environmental and economic needs of the community



Renewal: rapid maintenance and repair of the deteriorating infrastructure using already-available resources, innovations, and technologies

SHRP2 Implementation: INNOVATE . IMPLEMENT. IMPROVE.



SHRP2 Implementation: INNOVATE . IMPLEMENT. IMPROVE.



RESULTS
Save lives, money, and time

- Bridges being built more quickly
- Smoother traffic flows and less congestion
- Reduced construction costs
- Safer roadways
- Smarter environmental reviews

SHRP2 Capacity Products Background

- PlanWorks and Planning Process Bundle
- EconWorks
- TravelWorks Advanced Travel Analysis
- Eco-Logical
- Expedited Project Delivery
- Freight Demand Modeling and Data Improvement

Goals of Implementation Research

Three Goals for National SHRP2 Implementation:

- Provide opportunities thru funding and technical assistance to implement the research products.
- Expose, educate, and train if necessary, both decision makers and implementors on each product.
- Measure benefits on multiple levels.

Results of Implementation Projects

- SHRP2 funding was focused on many needs that would otherwise not have been addressed due to lack of resources.
- SHRP2 Capacity IAPs created a buzz that drew stakeholders to the table and provided a forum for implementation.
- SHRP2 Capacity products measured results but also exposed areas needing further development and more data collection.

EconWorks Pooled Fund Study Solicitation Open!

<https://www.pooledfund.org/Details/Solicitation/1500>

- ▶ **Equipped Planners**– Better understanding of economic impacts of transportation projects.
- ▶ **Smarter Decisions**– Tools to make more comprehensive and realistic assessments of economic development impacts of transportation projects.
- ▶ **Greater Economic Vitality** – Tools to help gauge potential increases in jobs and output by providing estimates of economic benefits in areas of travel time reliability, access to labor and goods markets, and intermodal connectivity.
- ▶ **Useful Case Studies**– Compare and contrast similar projects at various stages nationwide to assess potential outcomes..

Listen, Think, React, Share!

- **What Worked?**
- **What Still Needs Work?**
- **Did The Needle Move?**
- **What Direction Should We Head?**



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Product Panels

- EconWorks
- TravelWorks
- C20/Freight





C03/C11 EconWorks

SME – Glen Weisbrod, EDR Group

Testimonial – Coco Briseno, CALTRANS



EconWorks Concept

State DOTs need:

- Access to information to help planners incorporate economic analysis into project decision-making
- Case studies that prove the economic return on investment
- Tools to help show the wider benefits of proposed investments

USER BENEFITS



NON-USER BENEFITS



COMMUNITY BENEFITS



WIDER ECONOMIC BENEFITS



ECONOMIC IMPACTS



EconWorks Products

Product	Purpose
Case Study Tools	Early Stage Policy + Planning Enable planners to quickly see the range of economic development impacts that occur from different types of projects in different settings
Wider Economic Benefit Tools	Enhanced Programming + Prioritization Enable analysts to apply “wider benefit” measures for proposed projects (<i>accessibility, reliability, connectivity</i>)

EconWorks Case Studies: Overview

History

- Started as SHRP2 Project C03: TPICS (60 highway projects), now expanded to 132 highway, transit + multimodal projects

Product

- “Ex-post analysis“ for evidence-based decision making
- Identify range of economic impacts from capacity projects

Use

- Support “early stage” planning + collaborative decisions by incorporating economic vitality + land use factors
- Validation of predictive economic impact models

Case Study Search: A National Database



Showing pre/post change in economic and land use resulting from different types of projects and settings

Case Study Search

Key Words:

105 Results Found

[VIEW ALL CASES](#)

Filters:

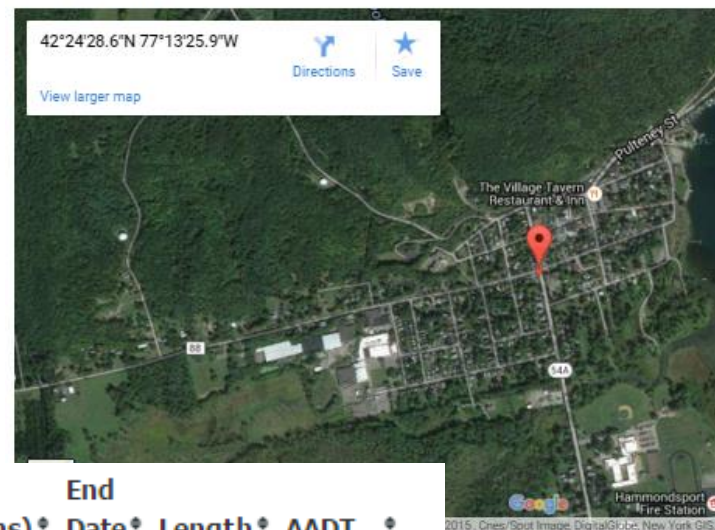
Project Details

Project Type ▼

Motivation ▼

Project	Type	BEA Region	Cost (Millions)	End Date	Length	AADT
Hammondsport	Access Road	New England/Mid-Atlantic	\$1.61	2001	1.000	2,117
Interstate 68	Limited Access Road	New England/Mid-Atlantic	\$1,708.26	1991	76.000	52,575
Yass Bypass	Bypass	International	\$127.65	1995	11.190	6,000
Interstate 29	Limited Access Road	Great Lakes/Plains	\$604.31	1973	161.000	79,000

Case Location:



Case Study Search: a Sketch Planning Tool

(learn from actual cases)

Project: Hammondsport

PRINT CASE STUDY

Description:

The Hammondsport Industrial Access Road involved resurfacing of three adjoining streets on the village's industrial western flank, running a total length of about a mile.

Characteristics and Setting:

States: NY
 City: Hammondsport
 Average Annual Daily Traffic: 2,117
 Project Type: Access Road
 Planned Cost (YOE \$): 1,300,000
 Constr. Start Date: 1998
 Initial Study Date: N/A
 Region: New England/Mid-Atlantic

Pre/Post Conditions:

Select a region to display the conditions for that region:

LOCAL

COUNTY(IES)

STATE

Measure	Pre-Project	Post-Project	Change	% Change
Personal Income Per Capita	35,971	37,131	1,160.20	3.23%
Economic Distress	1	1	-0.20	-14.81%
Number of Jobs	41,195	45,322	4,126.70	10.02%
Business Sales (in \$M's)	7,613	7,860	247.06	3.25%
Tax Revenue (in \$M's)	N/A	N/A	N/A	N/A
Population	98,907	98,236	-671.00	-0.68%
Property Value (median house value)	96,841	74,972	-21,869.70	-22.58%
Density (ppl/sq mi)				

Impacts:

Measure	Direct	Indirect	Total
Jobs	25	12	37
Income (in \$M's)	1,394,480	669,060	2,063,540
Output (in \$M's)	3,814,090	1,829,960	5,644,050

Assess My Project : Estimating Potential Impact Ranges

Project Type

- Access Road
- Limited Access Road
- Bypass
- Connector
- Beltway
- Bridge
- Interchange
- Widening
- Intermodal Freight
- Intermodal Passenger

Region

- New England/Mid-Atlantic
- International
- Great Lakes/Plains
- Southwest
- Southeast
- Rocky Mountain/Far West

Urban/Class Level

- Rural
- Mixed
- Metro

Economic Distress

- Distressed
- Non-Distressed

Length of Project
Required

Miles

GET RESULTS

Estimated Project Cost: **\$234 million**
 Estimated Average Annual Daily Traffic: **39,725**

	Jobs	Wages (mil.)	Output (mil.)
Direct Impacts	2,257 - 3,762	\$106 - \$176	\$336 - \$560
Supplier and Wage Impacts	1,296 - 2,160	\$61 - \$102	\$191 - \$318
Total Impacts	3,553 - 5,922	\$167 - \$278	\$527 - \$878

Wider Economic Benefit Tools: Overview

History

- Started as SHRP2 Project C11 wider benefit spreadsheets, expanded to EconWorks web tools

Product

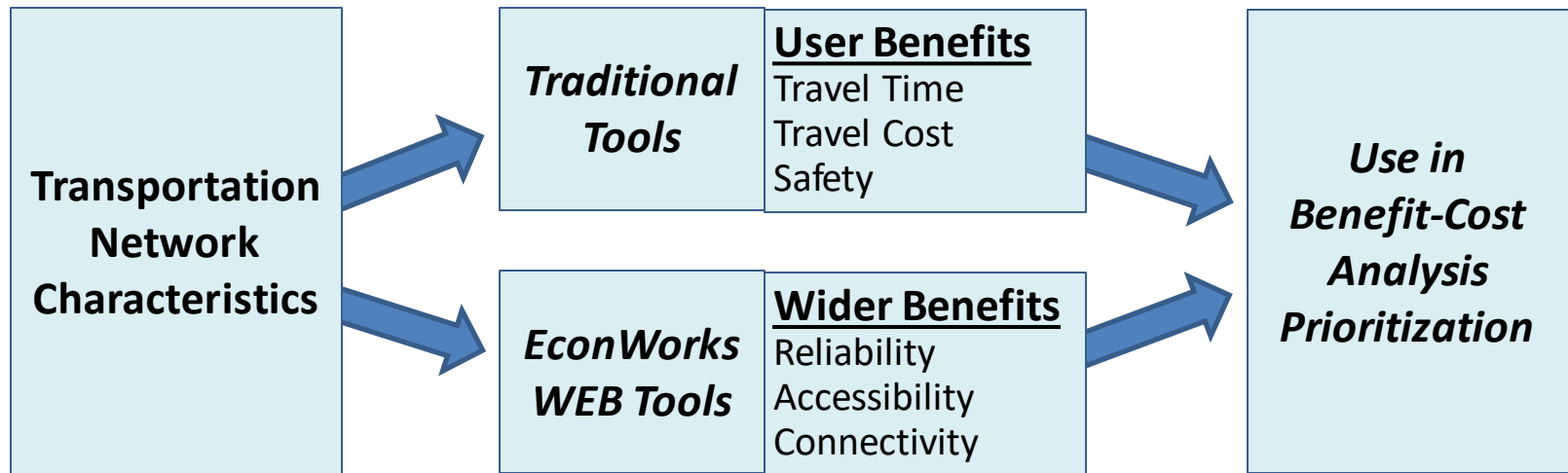
- Open-source tools that use zonal transportation data to calculate expected changes in accessibility, reliability + connectivity
- Apply productivity parameters from readily available research/data

Use

- Move beyond traditional benefit categories (i.e. safety, travel time, vehicle operating costs) to capture additional productivity effects
- Expand factors used in prioritization and benefit cost analysis

Wider Economic Benefit Tools: Outcomes

Predicting changes in transportation factors that affect economic productivity



Wider Economic Benefit Tools: Key Factors

Wider Benefit Tool	Key Driver of Impact
Reliability	<ul style="list-style-type: none">• Changing V/C Ratios (Based on lanes, capacity, and volume data inputs)• Changing incident frequency and duration (Based on planner estimates from ITS projects)
Market Access <i>(for jobs + deliveries)</i>	<ul style="list-style-type: none">• Change in zone-to-zone travel times (based on a significant change in the regional transportation network)
Intermodal Connectivity <i>(to airports, marine ports, rail terminals)</i>	<ul style="list-style-type: none">• Changes in access time to terminals• In special cases: changes in activity levels at terminals

EconWorks Training Webinars

Live 2017 and Viewable on Website

- February 2 (Application): **Introduction to EconWorks Case Studies:** Indiana DOT
- April 20 (Training): **EconWorks Products:** What they are and how they can be used
- May 18 (Application): **EconWorks Case Studies:** Presentation from Utah DOT
- June 15 (Training): **EconWorks Economic Impact Analysis Tools:** Using Case Studies
- August 17 (Training): **EconWorks WEB Tools** -- Market Access
- Sept. 28 (Application): **MPO Perspective:** Southeastern Regional Planning & Economic Development District and Delaware Valley Regional Planning Commission
- October 19 (Training): **EconWorks WEB Tools** -- Reliability and Connectivity
- December 14 (Training): **Using EconWorks for educating the public, decision makers and stakeholders**

Case Study Development Training Program

Module 1 - Introduction

Module 2 - Economic Development Concepts

Module 3 - Overview of EconWorks

Module 4 - EconWorks Basics

Module 5 - Case Study Data Needs And Sources

Module 6 - Web Based Search

Module 7 - Using Aerial Photographs For Economic Impact Assessment

Module 8 - Conducting Case Study Interviews

Module 9 - Using Site Visits To Clarify Project Impacts

Module 10 - Estimating Impacts And Costs For Case Study Entry

Module 11 - Developing A Case Study Narrative

Module 12 - Challenges In Conducting Case Studies

Module 13 - Case Submission & Course Conclusion

Economic Analysis Training Video

Menu Notes Resources

Welcome to EconWorks

Welcome to Economic Analysis Training

Economic Analysis Training Overview

Common Questions

What is Economic Analysis?

What can Economic Analysis do for me?

Three Key Questions

How does Economic Analysis fit into the Planning Process?

Module One: Economic Analysis in Transportation Planning

Module Two: Tools and Processes

Module Three: Communicating Results



Welcome to Economic Analysis Training

Before you begin, please type your first and last name in the space provided.

Type Your First and Last Name

Begin

Implementation Assistance Program

C03 Case Study Tools: Examples of Use (on website)

- Illinois DOT C03
- Indiana DOT C03
- Rhode Island DOT C03
- Utah DOT C03

C11 Wider Benefit Tools : Examples of Use (on website)

- Indiana C11
- Caltrans C11
- Connecticut C11
- Rhode Island DOT C11
- Virginia DOT C11

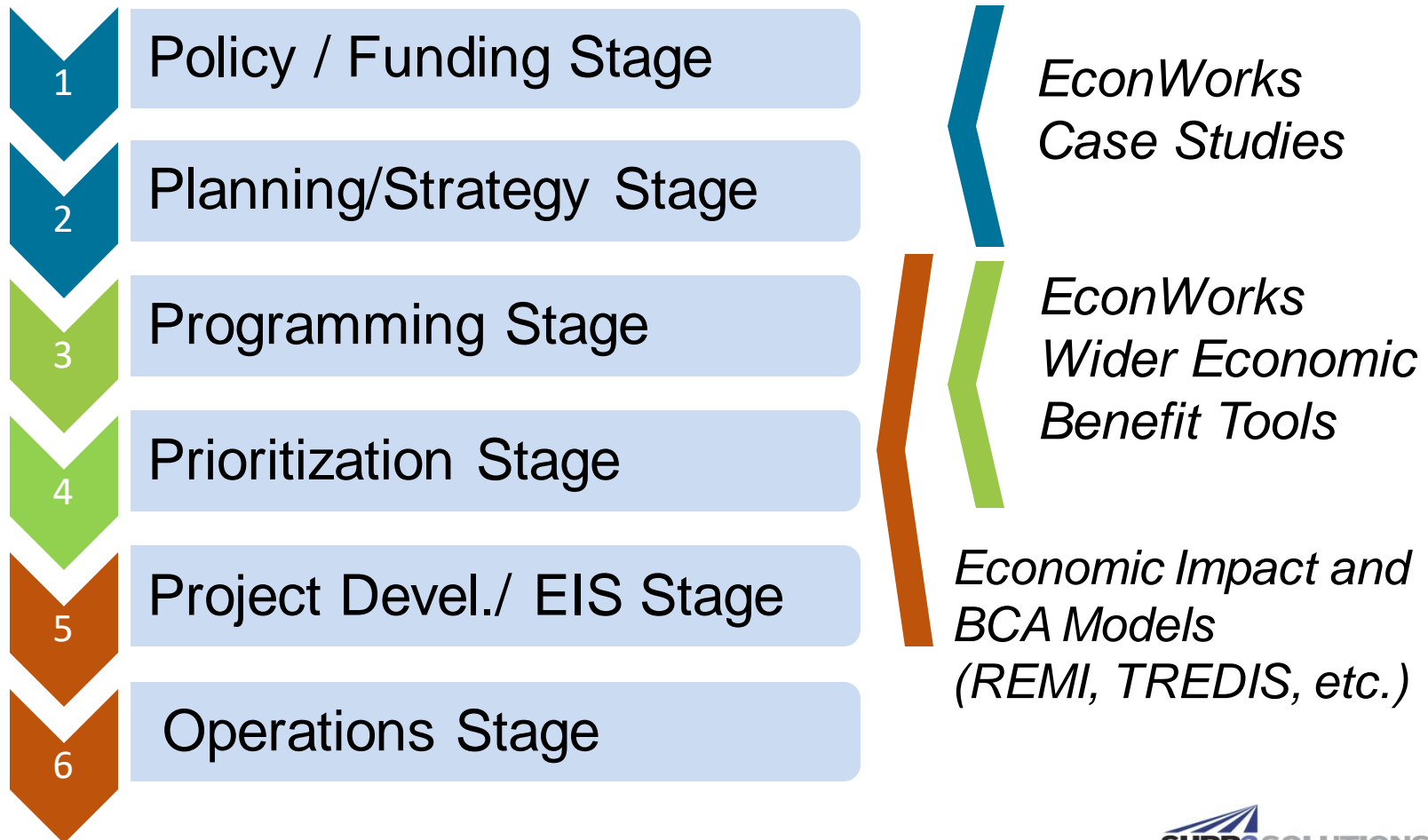
Lessons Learned: Case Study Tools

1. The “Case Study Search” tool can help planners anticipate the likely range of impacts. It can also enhance public discussion using real examples to focus on issues, expectations and complementary needs. *...this use of the database needs to be more widely promoted*
2. Ex post cases can validate the results of predictive analysis studies, especially if transportation changes are also considered *...this could be a valuable future use*
3. The “Assess My Project” tool cannot cover many situations due to limited cases and it also lacks data on how transport performance changes drive outcomes. Thus it cannot replace predictive impact models. *...this distinction should be reinforced.*
4. The database is not yet large enough when 132 cases are spread among 13 project types, 6 regions and 4 spatial settings. *...it will benefit from additional effort to build more cases.*

Lessons Learned: Wider Benefit Tools

1. The WEB Tools can supplement existing impact and benefit analysis tools by covering factors that they leave off. But they do NOT capture traditional travel (time/cost) or economic (spending/ cost) factors, so they are not replacements for existing impact tools.
...this distinction is commonly appreciated
2. They do NOT work for all possible types of projects or situations (e.g., intercity access factors, non-congestion reliability factors or intermodal interchanges, as well as safety or reconstruction projects).
...expectations and applicable situations should be reinforced
3. They CAN generate stand alone performance metrics or supplement rating, impact or benefit analysis systems. However, the broader systems provide more complete \$ impact numbers. *...users can benefit from guidance + clarity on assumptions, limitations and appropriate use*

Education: Role of EconWorks Tools



Future Needs

1. **The Case Study database** is a tremendous resource, but it needs continued care + feeding with new cases added, to keep it relevant as projects and situations evolve.
2. Use of the Case Studies can be substantially enhanced with more effort to fill in data on pre/post changes in travel volumes and speeds.
3. **The Wider Economic Benefit tools** can be very useful as they enable agencies to measure broader transportation factors and consider them in project prioritization and selection processes.
4. Use of these tools can be substantially enhanced with continued effort to refine how they can be most appropriately used to enhance broader economic analysis and modeling processes (avoiding double counting while filling in gaps).



<https://planningtools.transportation.org/>

Glen Weisbrod

EDR Group / EBP

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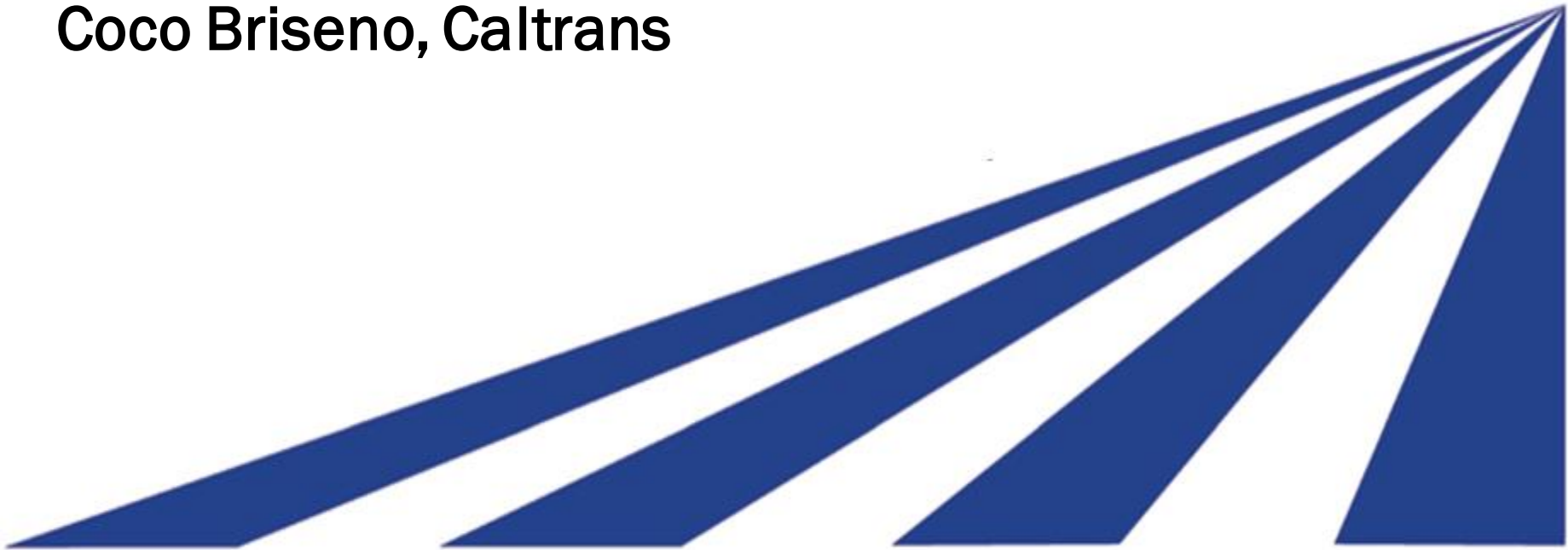
gweisbrod@edrgroup.com





EconWorks Testimonial

Coco Briseno, Caltrans



Caltrans - Use of C11 Tools

- **Caltrans awarded \$125k to test C11 tools in 2014**
 - Reliability
 - Connectivity
 - Market Access
 - Accounting
- **Intent of effort**
 - Assess handful of projects listed in the 2014 California Freight Mobility Plan (CFMP)
 - Limited data on CFMP projects
 - Scope modified to assess 2006 Transportation Corridor Improvement Fund projects

Caltrans - Use of C11 Tools

- Reliability Tool Findings

- Pros
 - Tool was easy to use
 - Data readily available to run the tool
 - Results can be incorporated within Cal-B/C
- Cons
 - Incident frequency and duration data not available
 - Assumptions were made
 - Limited project analysis capabilities
 - Only assesses reliability based on highway type
- Outcome
 - Results can complement Cal-B/C
 - Supplements Cal-B/C results for federal grant applications

Caltrans - Use of C11 Tools

- **Connectivity Tool Findings**
 - Pros
 - Easy to select and assess intermodal facilities
 - Cons
 - Freight facility data is static
 - Unknown how freight volumes are assigned
 - Unitless connectivity score
 - Outcome
 - Tool cannot be used
 - Unable to determine what weighted connectivity score represents

Caltrans - Use of C11 Tools

- Market Access Tool Findings

- Pros
 - Concept and results helpful for project evaluation purposes
- Cons
 - Data collection is cumbersome
 - Regional zone activity values
 - Travel demand model skim data
 - Employment and labor force
- Outcome
 - Tool is difficult to use
 - Easier to use a subscription based economic impact model
 - data collection is too intensive

Caltrans - Use of C11 Tools

- Accounting Tool Findings

- Pros
 - Concept helpful in aggregating each tool's results and reporting them in monetary terms
- Cons
 - Connectivity's "weighted score" could not be used
 - Some cells hardcoded where formulas should appear
- Outcome
 - Tool cannot be used
 - Inability to enter outcomes from other tools

Caltrans - Use of C11 Tools

- Conclusion

- Reliability tool complements Cal-B/C
 - Cal-B/C results are more robust when including reliability
 - Benefit-cost ratio for a project can increase by tenths of a point
- Connectivity results need to be transparent
 - Intermodal facility assumptions need to be viewable
 - Explanation of “weighted score” calculation is needed
- Market Access data requirement cumbersome
 - Other economic impact models require less data inputs
- Accounting tool incomplete
 - Some cells were hardcoded where formulas were needed

Caltrans - Use of C11 Tools

- **Amendment Effort**
 - Remaining funds used to create Cal-B/C reliability beta model
 - Model uses a portion of C11 methodology
- **Recommendations**
 - Consolidate C11 with other reliability methodologies
 - Unlock connectivity tool to be transparent and allow users to adjust facility assumptions
 - Decrease data requirements to run market access tool
 - Ensure accounting tool can use other tool outcomes and that it is running correctly
 - Continue to establish peer-to-peer review requirements

PlanWorks - Caltrans Pilot

- As part of a SHRP2 Grant, Caltrans piloted PlanWorks to assist in developing the Caltrans Corridor Planning Guide Book.
- Through using PlanWorks the Guidebook focuses on a comprehensive planning approach through desired protocols and procedures to identify and implement multimodal transportation needs. It is a process document that leads to not just a product, but a partnership and performance-based project recommendations
- Caltrans looked beyond the PlanWorks Decision Guide to provide example of analysis methodologies, corridor-level performance measures, and project prioritization methods.

PlanWorks to Develop Guidebook

CALTRANS CORRIDOR PLANNING GUIDEBOOK



COR-1: Approve Scope
COR-2: Approve Problem Statements
COR-3: Approve Goals
COR-4: Reach Consensus on Analysis Scope
COR-5: Approve Evaluation Criteria, Methods and Measures

COR-6: Approve Range of Solutions
COR-7: Adopt Preferred Solutions
COR-8: Approve Prioritization Approach
COR-9: Adopt Priorities for Implementation



TravelWorks Advanced Travel Analysis Tools (C04, C05, C10, C16)

SME – Maren Outwater, RSG

Testimonial – Tara Weidner, ODOT



TravelWorks Advanced Travel Analysis Tools



TravelWorks

Advanced Travel Analysis Tools address today's transportation planning and modeling challenges.

Quickly compare the broad impacts of various land use, investment and policy scenarios on travel demand using a [Rapid Policy Analysis Tool \(RPAT\)](#)

Improve the sensitivity of my travel demand model to [congestion, travel time reliability and pricing](#)

Understand how operational improvement strategies affect [highway capacity](#)

Build an activity-based model integrated with dynamic traffic/transit assignment ([Integrated Dynamic Travel Model](#))



	URBAN CORE	CLOSE-IN COMMUNITY	SUBURBAN	RURAL
Residential	✓	✓	✓	
Commercial	✓	✓	✓	
Mixed-Use	✓	✓	✓	
Transit-Oriented Development	✓	✓	✓	
Rural/Greenfield				✓

A snapshot of the Rapid Policy Assessment Tool



SHRP2 C04 Highway Congestion, Reliability and Pricing

REPORT S2-C04-RW-1

Improving Our Understanding of How Highway Congestion and Pricing Affect Travel Demand

SHRP2 CAPACITY RESEARCH

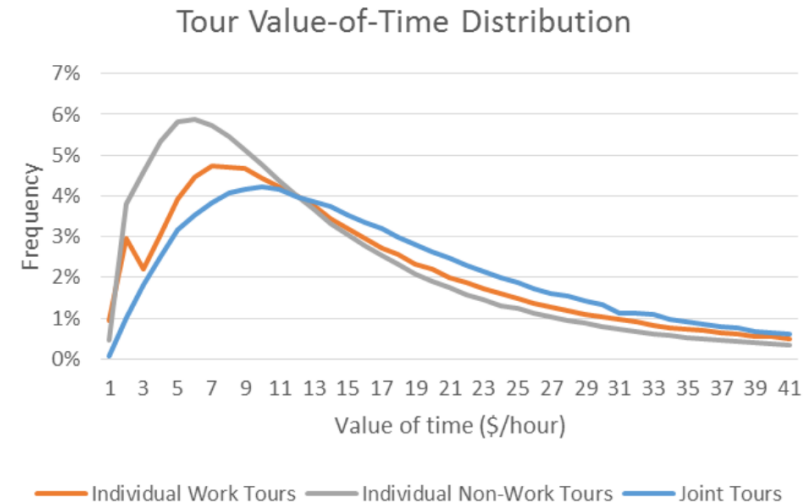
**SHRP2**
STRATEGIC HIGHWAY RESEARCH PROGRAM
Accelerating solutions for highway safety, renewal, reliability, and capacity

- Practical guidance for incorporating mathematical specifications into various travel demand models
- 3 levels of guidance
 - Level 1. Behavior foundations
 - Level 2. Advanced operational modeling (activity or tour-based)
 - Level 3. Opportunities for prevailing practice (aggregate trip-based)

Guidance on behavioral sensitivity to highway congestion and pricing

SANDAG Application

- Willingness to pay
- Value of time
- Value of reliability
- Auto occupancy or group travel
- Negative toll bias
- User segmentation factors
- Avoiding simplistic approaches to forecasting
- Data limitations and GPS-based data collection methods



SHRP2 C05 Highway Capacity Needs

REPORT S2-C05-RW-1

Understanding
the Contributions
of Operations,
Technology, and Design
to Meeting Highway
Capacity Needs

SHRP2 CAPACITY RESEARCH

 **SHRP 2**
STRATEGIC HIGHWAY RESEARCH PROGRAM
Accelerating solutions for highway safety, renewal, reliability, and capacity

TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

- Guidance on quantifying capacity benefits of operations, design and technology improvements at the network level
- Dynamic traffic assignment (DTA) modeling tools were identified as the best way to evaluate network performance under time-varying demand and supply conditions

Network Operations Modeling Approach

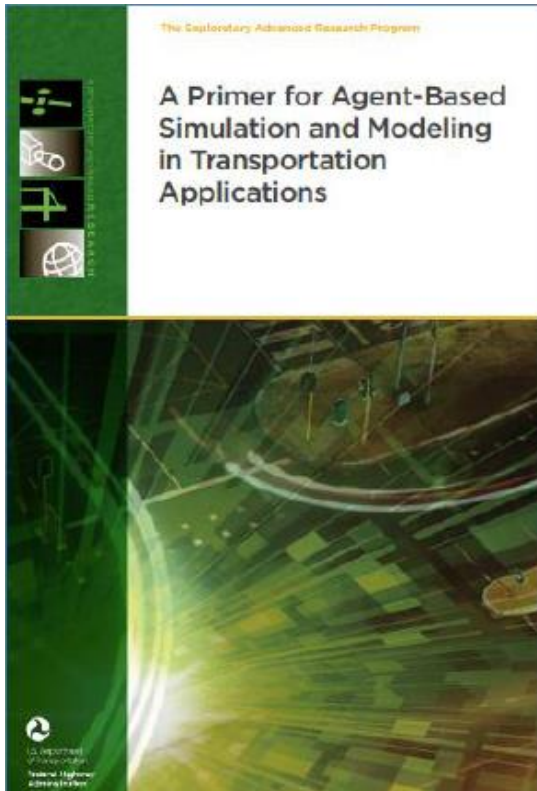
- DTA models are preferred to evaluate operational strategies
- Dynasmart-P was enhanced and used as a test engine (not available for general use)

Table ES.1. Non-Lane-Widening Strategies to Improve Capacity

Freeway	Arterial	Both
HOV lanes	Signal retiming	Narrow lanes
Ramp metering	Signal coordination	Reversible lanes
Ramp closures	Adaptive signals	Variable lanes
Congestion pricing	Queue management	Truck-only lanes
Pricing by distance	Raised medians	Truck restrictions
HOT lanes	Access points	Pretrip information
Weaving section improvements	Right and left turn channelization	In-vehicle information
Frontage road	Alternate left turn treatments	VMS/DMS
Interchange modifications		

Note: HOV = high-occupancy vehicle; HOT = high-occupancy toll; VMS = variable message sign; DMS = dynamic message sign.

SHRP2 C10 Integrated Dynamic Travel Model



- Improves urban-scale modeling and network procedures to address operations or spot improvements that affect travel time choice, route choice, mode choice, reliability, or emissions
- Links travel behavior choices, such as departure time or route, with congested network conditions to better reflect real-world dynamics in the model

Operational Supply and Demand Models

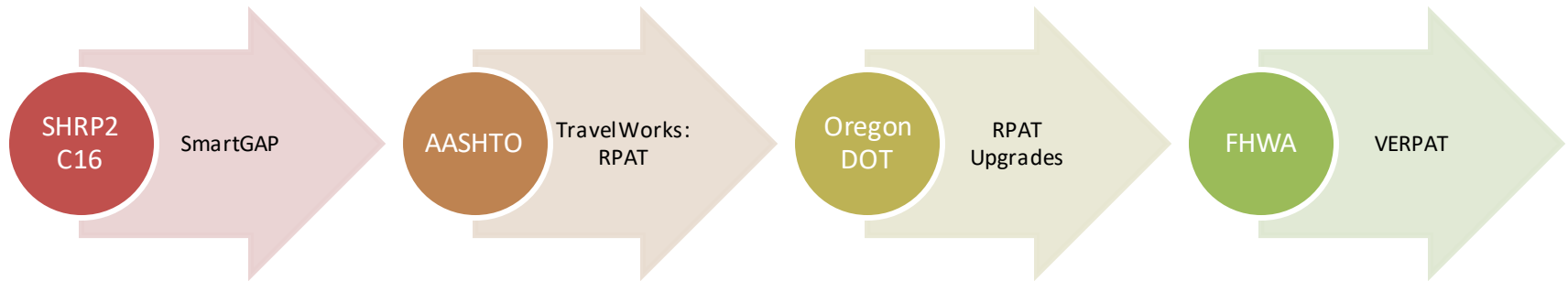
- 2015 research by MWCOCG indicated that 16 of 23 peer MPOs are using ABM; only 2 use DTA models
- 2 initial pilot tests (Jacksonville and Sacramento)
- 4 additional pilot tests (Atlanta, Ohio, Maryland, San Francisco)
- Results are applied research but not yet demonstrated in a relevant environment



- Training and outreach have shared the research broadly
- Models provide more sensitivity to policy variables

SHRP2 C16 Rapid Policy Assessment

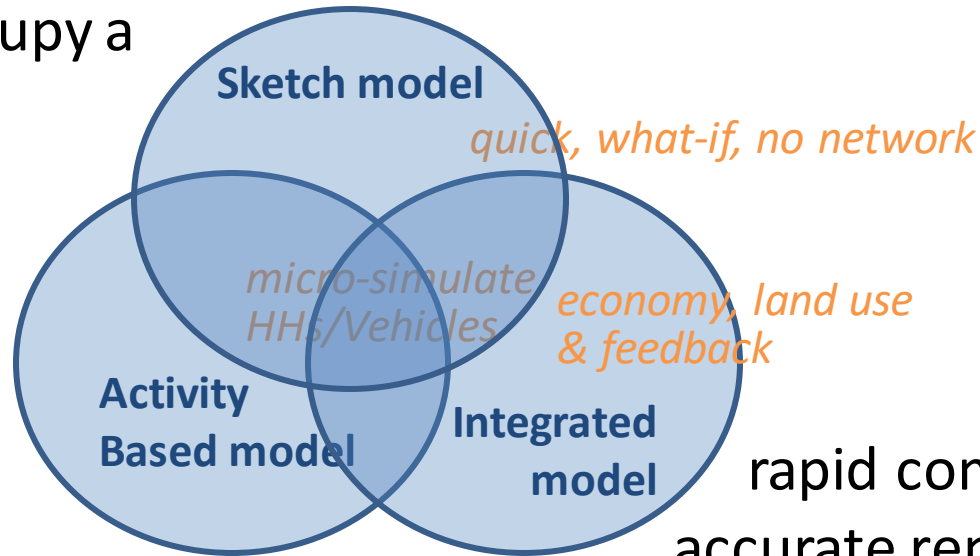
- Integrated transportation investment decision-making with land development and growth management (smart growth strategies)



- Robust planning tool that provides quick answers to support scenario planning
- Saves time and cost to provide insight on transportation policies


Strategic Planning Tool

VisionEval Tools occupy a niche between...



...balancing rapid computation & accurate representation

Exploratory tool for assessing risk/uncertainty in scenario planning visioning
Use more detailed traditional tools to implement vision



Pooled Fund
FHWA-Volpe

<u>DOTs</u>	<u>MPOs</u>
▪ OR	▪ Ohio
▪ MD	▪ NC
▪ WA	▪ CA
	▪ Las Vegas
	▪ Atlanta
	▪ Houston

Visioneval.org

RPAT Scenario Analysis Dashboard

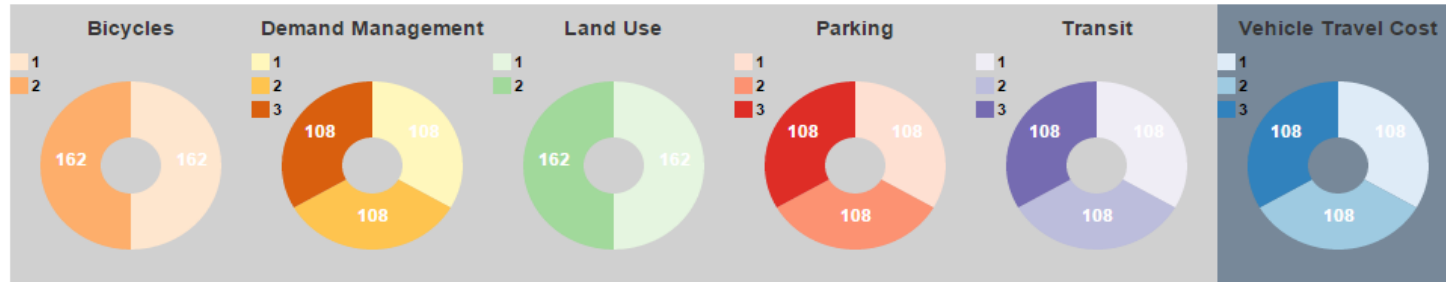
Demo RPAT Scenario Viewer

About

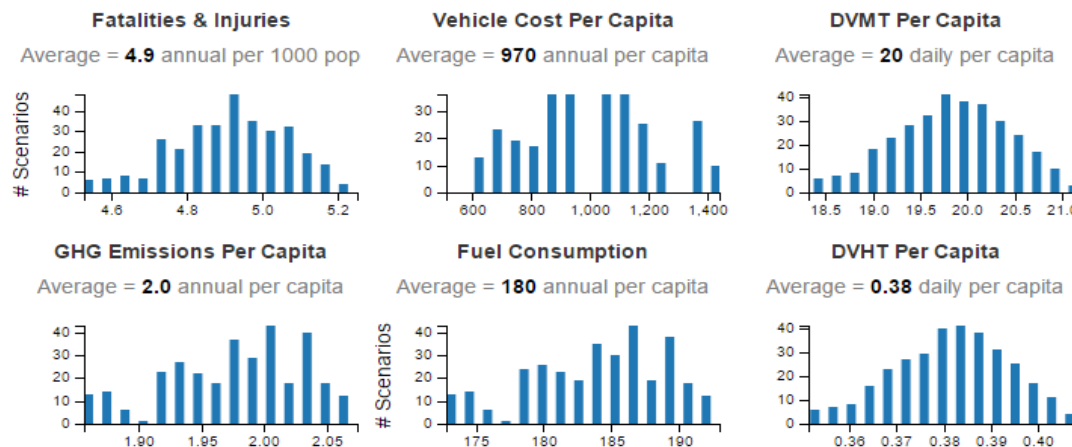
Quick Start

Detailed Instructions

Scenario Input Levels | [Clear All Selections](#)



Model Outputs: 324 scenarios selected out of 324 scenarios | [Clear All Selections](#)





TravelWorks Testimonial

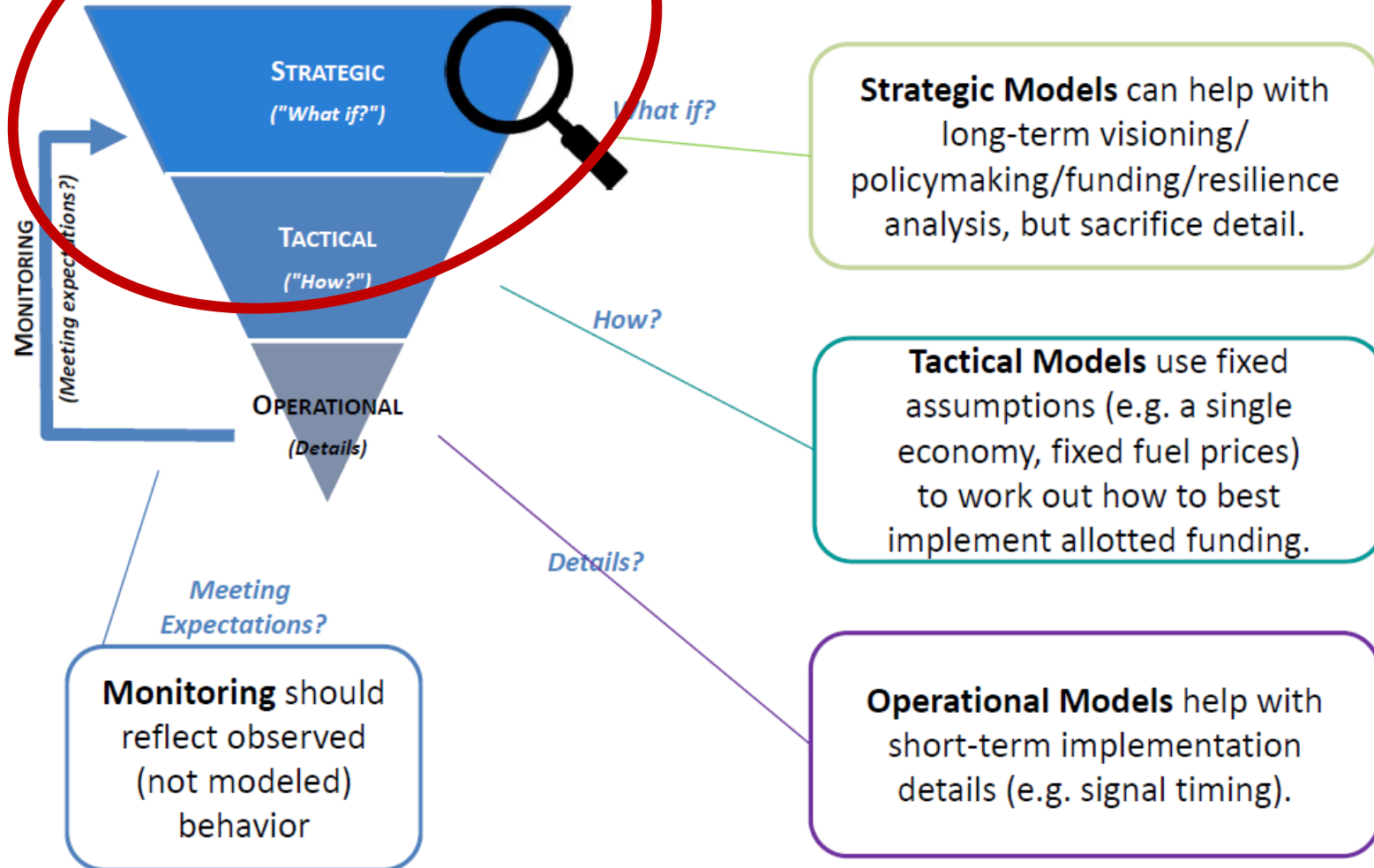
RPAT and VisionEval

Tara Weidner, Oregon DOT

Transportation Planning Analysis Unit



Oregon DOT Analysis Toolkit



Conversations & Partnerships

Bring something of value to the table

-- **a robust analytical framework**

- Supports policy conversations
- Scenario Planning collaboration
- Facilitates decision making



State & Local Partnerships:

- DLCDD (Land Use, GHG strategies)
- DEQ, DOE, PUC (Electric Vehicle goals, Clean Fuels)
- Transit Agencies (GHG strategies, test Alt fuels/electric/CNG)
- Local Agencies – Long Range Transportation Plans

2050 Visioning Process

Statewide Transportation Strategy

Urban -46%

- ⊖ UGB expansion
- ⌚ Transit service (4x pop. growth)
- ⌚ TDM (65% PDX hh & 40% of employers)
- ⌚ Parking pricing (+30% pay to park)
- ➔ 30% mode shift (for trips of <6 mi.)

Tech -45%

- ➔ 30% mode shift (for trips of <6 mi.)
- ⌚ PHEV & EV (+30%)
- ⌚ Renewable energy
- ⬇ Fuel carbon intensity (-20%)
- ⬇ Light truck ownership (-29%-36%)

System Optimization -49%

- ⌚ Transit service (4x pop. growth)
- ⌚ Max System Ops & Mgmt.
- ⌚ Fuel efficiency priority (80% hh)
- ⌚ Carsharing rates up: high density (1/2,500), medium density (1/5,000)
- ⌚ TDM (65% PDX hh & 45% employers; more telecom.)
- ⌚ Speed smoothing
- ➔ 30% mode shift (for trips of <6 mi.)

Pricing -43%

- ⌚ 100% PAYD insurance
- ⌚ Parking pricing (+30% pay to park)
- ⌚ Pay for all external costs (+\$.06 per mi)
- ⌚ Congestion pricing (\$.20/mi)

Combo -63%

Includes all assumptions

Enhanced Combo -69%

- ➔ 40% mode shift from SOV trips of <6 mi (was 30%)
- ⌚ More pay for parking and at higher cost
- ⬇ Ave. vehicle age 7.8 yrs (was 10 yrs)
- ⌚ Increase in PHEV and EV (43%)
- ⌚ Increase in TDM
- ⌚ Commercial services vehicles are all electric or natural gas

Enhanced + Price -74%

- ⌚ \$.15 per mile VMT Tax in addition to other taxes (~\$.06 per mile)

Enhanced + Tech -75%

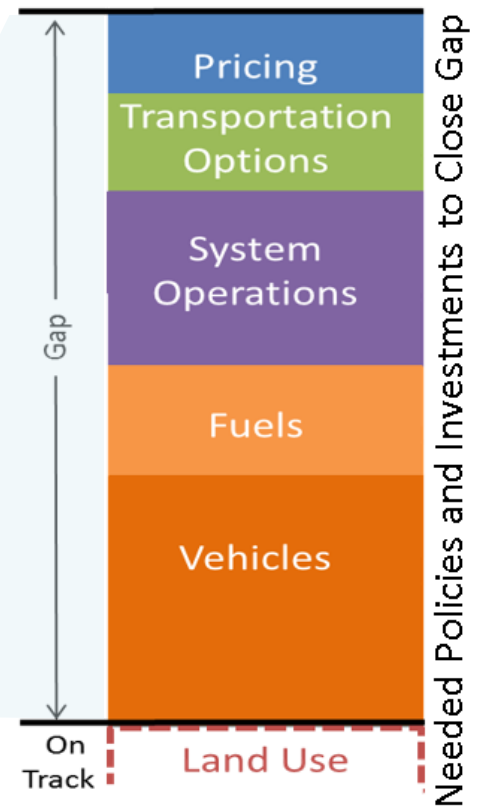
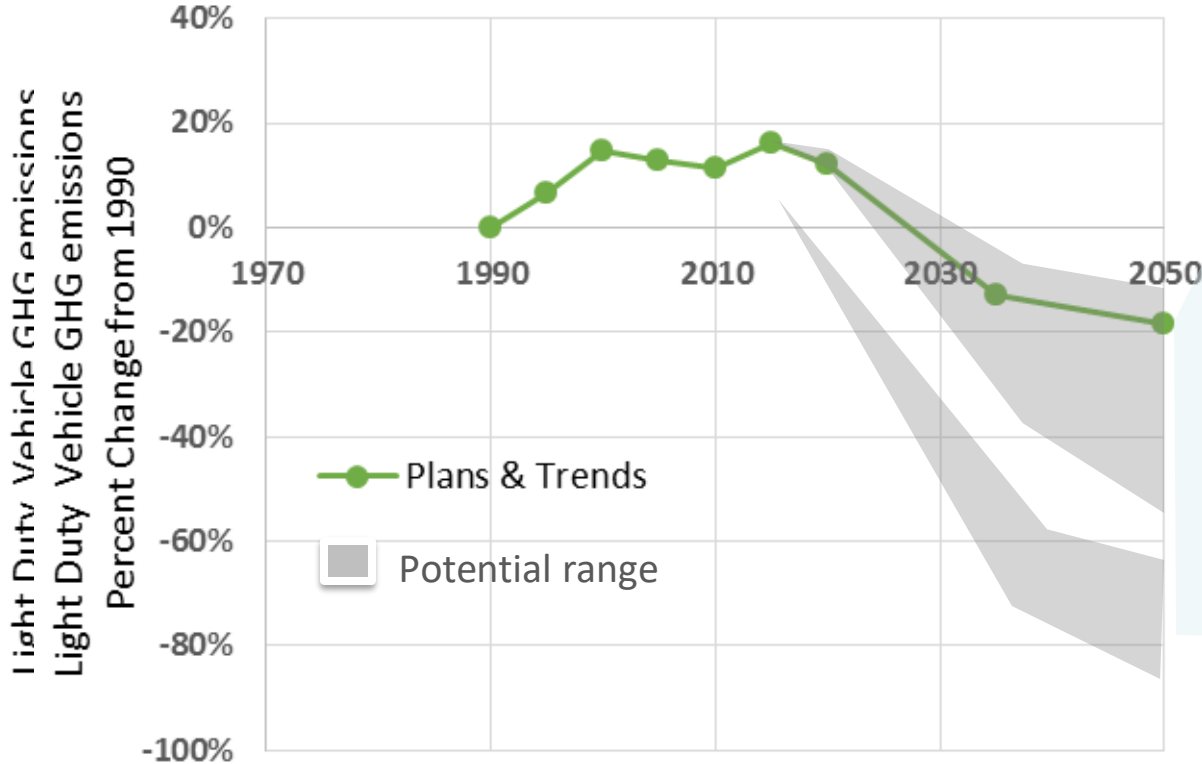
- ⌚ Cleaner power generation
- ⌚ Increase PHEV & EV (53%)
- ⌚ EVs have longer range (cars = 300 mi)

2018 STS-Monitoring Report

5-year review

Projected GHG Emissions

Light Duty Vehicle CO₂e Percent Change from 1990

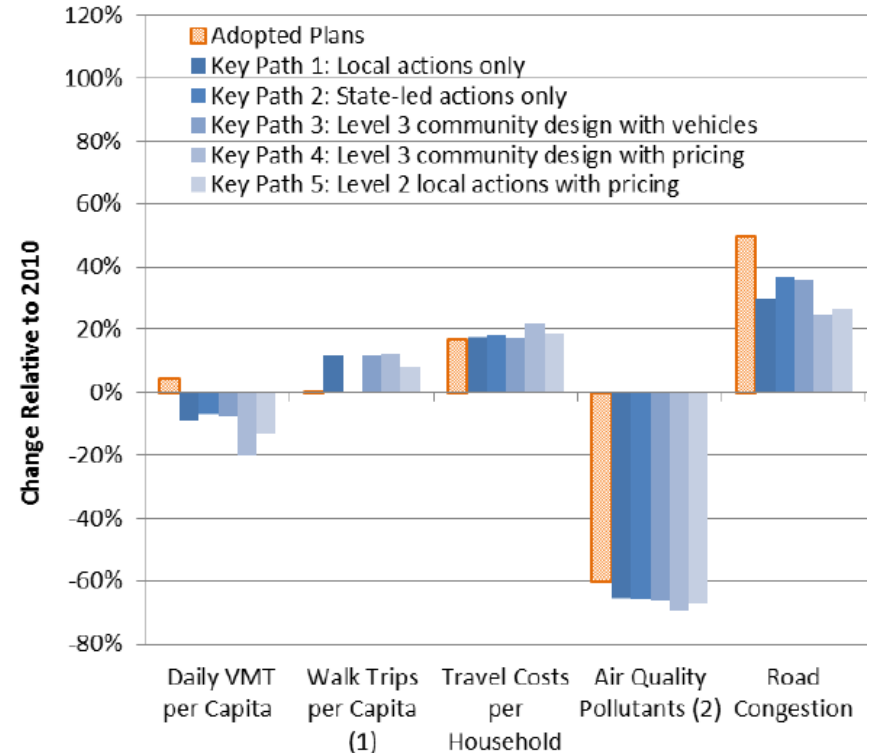
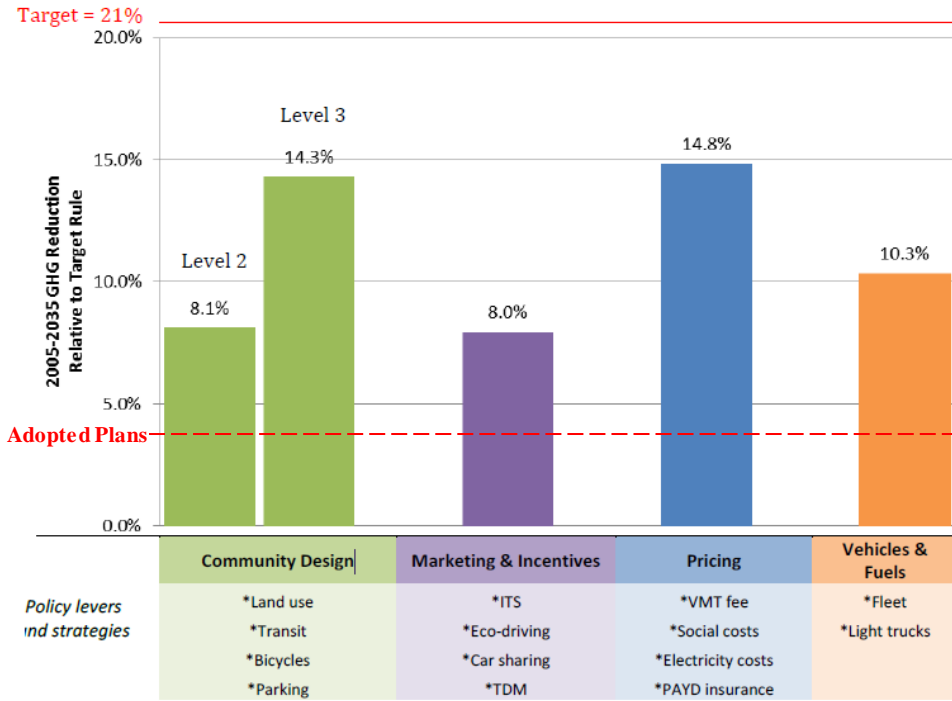


MPO Strategic Assessment

RSPM Inputs:

Regional Context	Local Actions		Collaborative Actions	
	Community Design	Marketing & Incentives	Vehicles & Fuels	Pricing
<ul style="list-style-type: none"> • Demographics • Income Growth • Fuel Price 	<ul style="list-style-type: none"> • Future Housing (Single- & Multi-Family) • Parking Fees • Transit Service • Biking 	<ul style="list-style-type: none"> • TDM (home & work-based) • Car Sharing • Education on Driving Efficiency • Intelligent Transportation Systems 	<ul style="list-style-type: none"> • Vehicle Fuel Economy (mpg) • Fuels • Commercial Fleets 	<ul style="list-style-type: none"> • Pay-As-You-Drive Insurance • Gas Taxes • Road User Fee

Corvallis Area MPO Results:



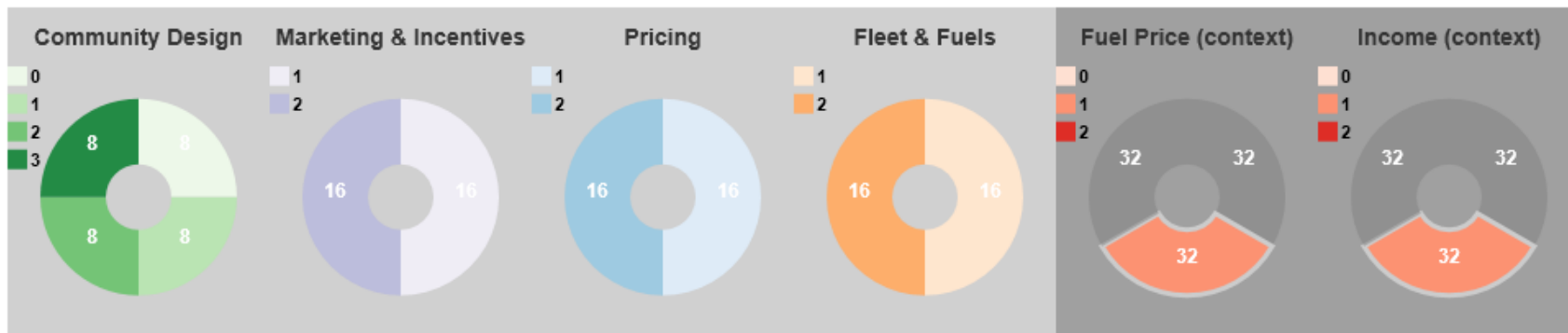
Corvallis Metropolitan Planning Area Scenario Viewer

About This Effort

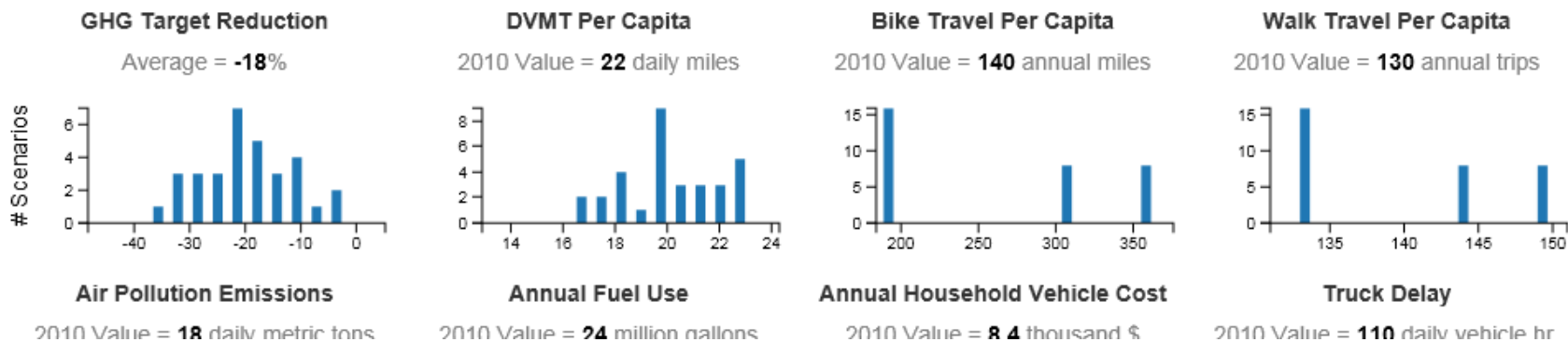
Quick Start

Detailed Instructions

Scenario Input Levels | [Clear All Selections](#)

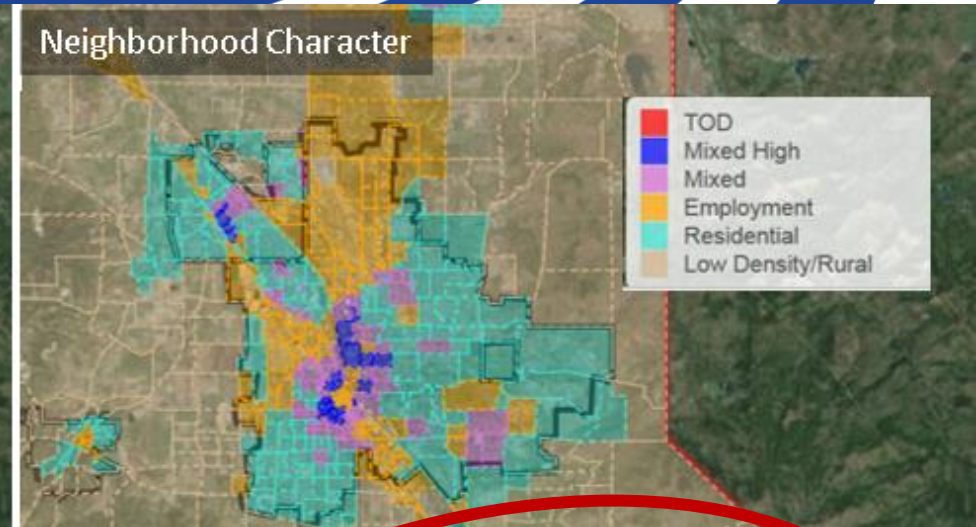
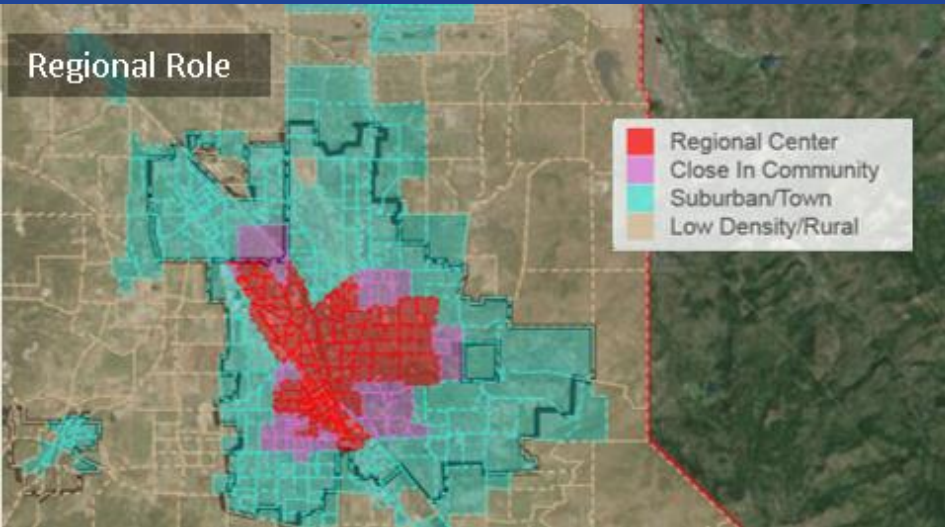


Model Outputs: 32 scenarios selected out of 288 scenarios | [Clear All Selections](#)



<https://www.oregon.gov/ODOT/Planning/Pages/PTV-SV.aspx?sv=CAMPO>

Oregon Place Types



BUILT ENVIRONMENT VARIABLES

Built Environment Variables	Destination Accessibility	Share of Regional Jobs within 5 miles (ratio)	H-M-L-VL
	Density	Jobs & Households per acre within 0.25 mile	H-M-L-VL
	Design	Multi-modal & Pedestrian-Oriented street density (links per sq mile)	H-L
	Diversity	Jobs (total or retail- service) to household ratio, within 0.25 mile	H-L
	Transit Service Level	PM Peak hourly transit service within 0.25 mile	H-M-L-VL

LAND USE PLACE TYPES (from RPAT)

Neighborhood Character (Development Type)	Regional Role (Area Type)			
	Regional Center	Close In Community	Suburban/Town	Low Density/Rural
Mixed Use	√	√	√	
Employment	√	√	√	
Residential	√	√	√	
Transit Supported Development	√	√	√	
Low Density/ Rural				√

Road Ahead

VisionEval pooled fund
...next step in deployment

Maintain/Enhance tool:

- Modular, Scalable
- Enhance User Experience, Visualization tools
- National defaults
- Evolve with new technologies
- Peer Review
- Share best practices



Pooled Fund
FHWA-Volpe

DOTs

MPOs

- | | | |
|------|--------|-------------|
| ▪ OR | ▪ Ohio | ▪ Las Vegas |
| ▪ MD | ▪ NC | ▪ Atlanta |
| ▪ WA | ▪ CA | ▪ Houston |

Visioneval.org

Tara Weidner, P.E.
Oregon Department of Transportation
Tara.j.weidner@odot.state.or.us



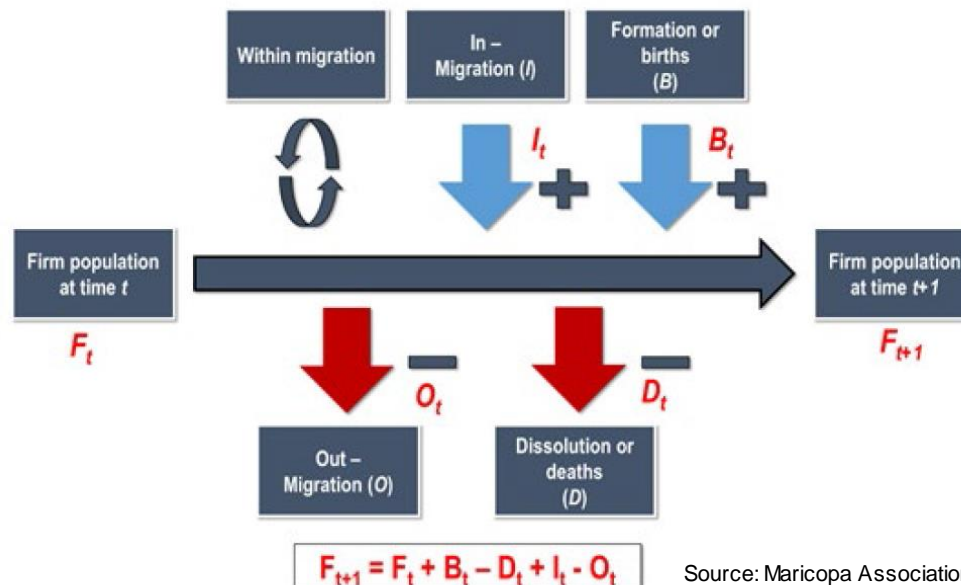
C20 Freight Demand Modeling and Data Improvement Program

SME – Jeff Purdy, FHWA

Testimonial – Brian Ryder, Baltimore Metro Council

SHRP2 C20 Freight Demand Modeling and Data Improvement Purpose

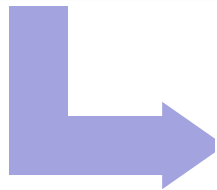
Foster fresh ideas and new approaches to freight demand modeling and data collection that ultimately enhance decision-making.



SHRP2 C20 Process

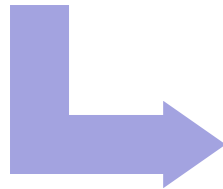
Transportation Research Board

- Research Initiatives

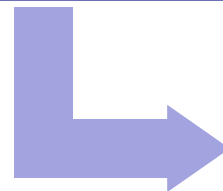


C20 Implementation Plan

- Projects Execution



Pilot Projects
Regional Data
Forums



Continued
Implementation

The sample research initiative method as part of 2010/2 C-20 demonstrates how the strategic objectives could be advanced. Each also applies to one or more of the three research dimensions.

Sample Research Initiatives

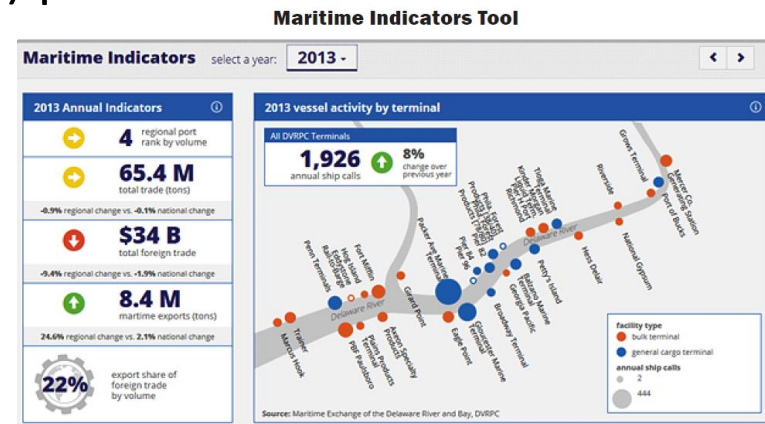
1. Develop the freight and logistics knowledge and skill requirements for transportation decision-makers, and professional and technical personnel. Develop the associated learning systems to address knowledge and skill deficits.
2. Establish techniques and model practices to address freight financing.
3. Establish modeling opportunities for "behavior-based" freight movement.
4. Develop methods that predict road-kill and highway capacity reduction based on "value of" scenarios.
5. Develop a range of freight financing methods that determine decision-making needs and that can be applied to all levels (i.e., national, regional, state, and local).
6. Develop robust tools for freight cost/benefit analysis that go beyond the ship to the factory of the origin, cost, and commodity.
7. Establish a system of operations that allows for the development of freight transportation system options, policies, and impact the larger world trade partnership system.
8. Determine how economic, demographic, and other factors will influence the freight patterns and destinations. Document economic and demographic changes related to freight flows.
9. Develop freight alternatives for application of all types of loads.
10. Establish, joint, and coordinate a portfolio of cost/benefit data to measure the transportation, competing, and project alternatives.
11. Develop protocols for applying freight financing to the design of transportation infrastructure investment and strategy.
12. Advance research to effectively integrate freight and other modes across all transportation policy planning and programming levels.
13. Develop standards for freight planning and modeling through a low-impact approach of ensuring cost-effective decision-making.

Research Initiative	Research Dimension			Strategic Objective	
	Knowledge	Policy	Operations	Freight Financing	Freight Capacity
1	Red	Blue	Blue	Blue	Blue
2	Red	Blue	Blue	Blue	Blue
3	Red	Blue	Blue	Blue	Blue
4	Red	Blue	Blue	Blue	Blue
5	Red	Blue	Blue	Blue	Blue
6	Red	Blue	Blue	Blue	Blue
7	Red	Blue	Blue	Blue	Blue
8	Red	Blue	Blue	Blue	Blue
9	Red	Blue	Blue	Blue	Blue
10	Red	Blue	Blue	Blue	Blue
11	Red	Blue	Blue	Blue	Blue
12	Red	Blue	Blue	Blue	Blue
13	Red	Blue	Blue	Blue	Blue

Source: TRB

SHRP2 C20 National Initiatives

- Implementation Assistance Program (IAP) pilot projects in 11 States.
 - Innovations in Local Freight Data.
 - Behavior-Based Freight Modeling.
- Freight data regional forums.
- Advanced research activities:
 - Behavioral/Agent-Based Supply Chain Modeling Research.
 - Incorporating Land Use and Demographic Trends into Freight Trip Demand Analysis.
- Quick Response Freight Methods (QRFM) update.
- Freight Model Improvement Portal (FMIP) – Community of Practice.

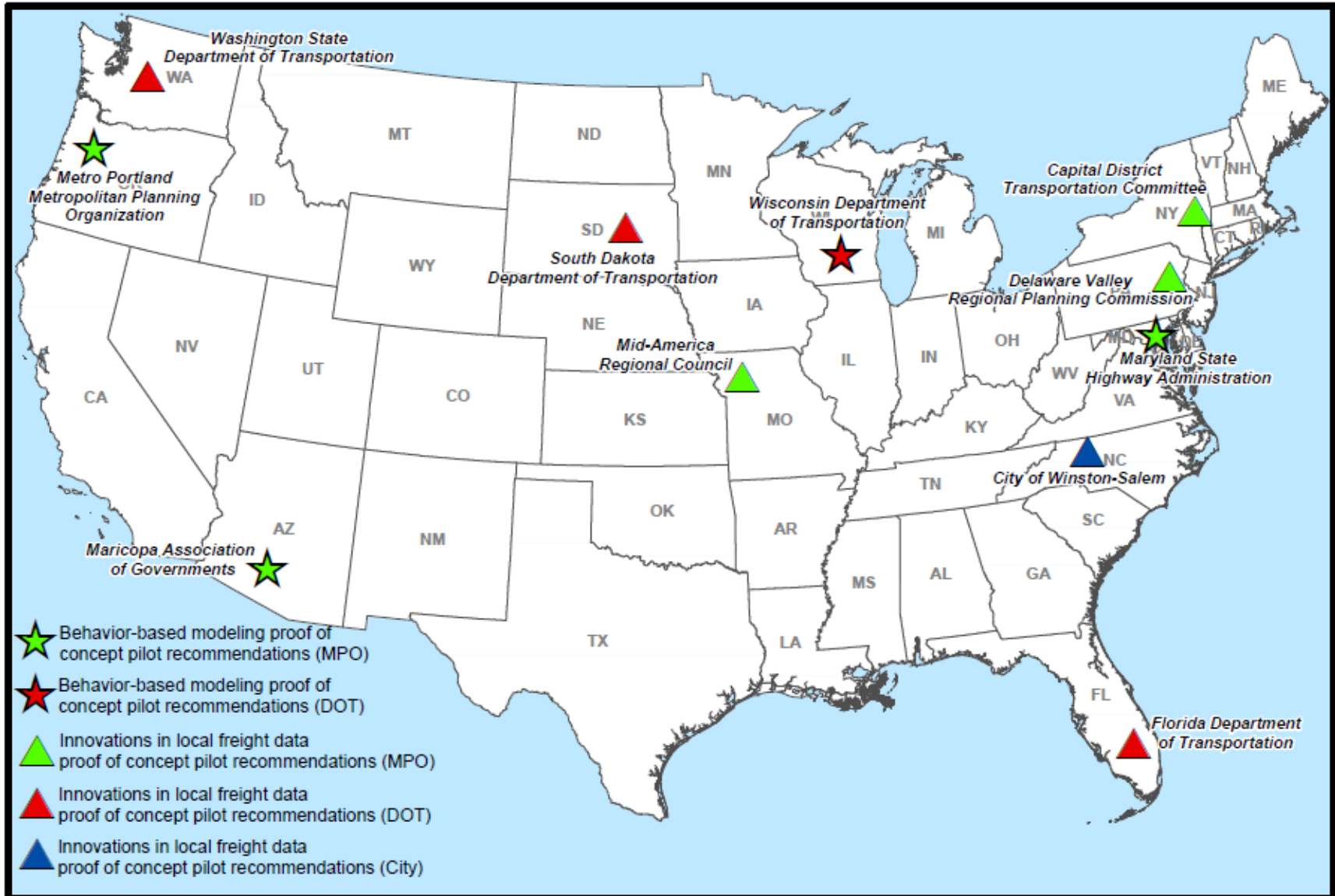


Source: Delaware Valley Regional Planning Commission



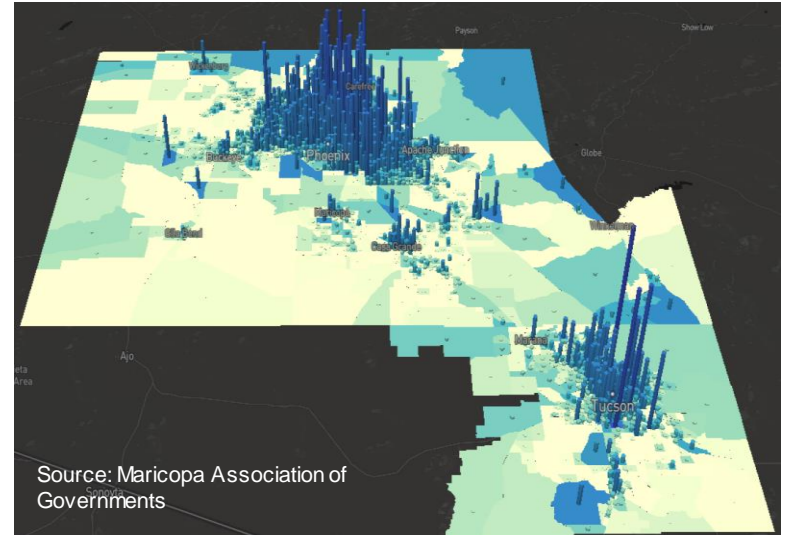
Source: Florida Department of Transportation

SHRP2 C-20 Implementation Assistance Program (IAP) Pilot Projects



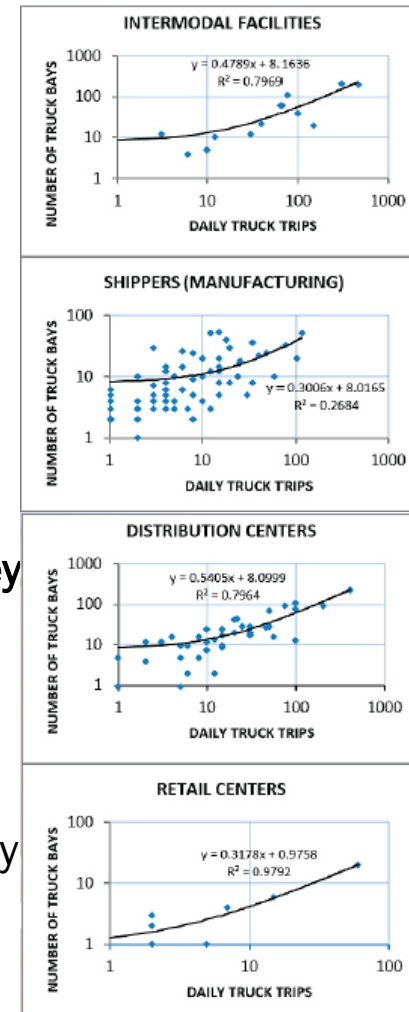
IAP: Behavior-Based Freight Models

- **Maricopa Association of Governments, Arizona** - Multi-modal freight model replicates economic behaviors of establishments, shippers, and carriers by modeling travel and tour formations.
- **Portland Metro, Oregon** - Hybrid freight model with tour-based behavior of individual trips to address economic policy questions, and depict truck volumes and flow of goods for local supply chains.
- **Maryland Department of Transportation and Baltimore Regional Transportation Board** - Regional tour-based truck model covering intra-local distribution with sensitivity to the long-distance truck flows represented in the statewide freight model.
- **Wisconsin Department of Transportation** - hybridized model for statewide freight forecasting and quantifying how different scenarios affect freight transportation.



IAP: Innovations in Local Freight Data

- **Florida Department of Transportation** - Petroleum supply chain data for improved accuracy of freight forecasts.
- **Mid-America Regional Council, Missouri** - Travel time and commercial waybill data to demonstrate cost of congestion on freight movement.
- **Capital District Transportation Committee, New York** - Created unified data set at zip code and transportation analysis zone level.
- **Winston-Salem Metropolitan Planning Organization, North Carolina** – Industry and truck touring data to support advanced freight model.
- **Delaware Valley Regional Planning Commission, Pennsylvania/New Jersey** – Philly Freight Finder data sharing platform for intermodal freight.
- **South Dakota Department of Transportation** - Location, timing, and impact of agricultural commodity shipping on South Dakota's highways.
- **Washington State Department of Transportation** - Food distribution supply chain and local truck delivery data to model behavioral responses to policy scenarios.



Source: Winston Salem Urban Area MPO

Freight Data Regional Forums

Identify Freight
Data/Program
Improvement
Needs

Identify Areas
of Collaboration
and
Standardization

Develop Action
Plan for Next
Steps

Freight Data Regional Forum Locations

Location	Dates	MPO and State DOT Participants from:
Washington, DC	January 10, 2016	TRB Attendees
Orlando, FL	August 8-9, 2016	AL, FL, GA, MS, NC, SC, TN
Portland, OR	September 27-28, 2016	AK, ID, MT, OR, WA, WY
Washington, DC	November 17-18, 2016	DC, DE, MD, PA, VA, WV
Dallas, TX	January 23-24, 2017	AR, KS, LA, MO, OK, TX
Chicago, IL	February 15-16, 2017	IA, IL, IN, KY, MI, OH
Minneapolis, MN	April 5-6, 2017	MN, NE, ND, SD, WI
Hartford, CT	May 10-11, 2017	CT, MA, ME, NH, NJ, NY, RI, VT
Phoenix, AZ	June 7-8, 2017	AZ, CA, CO, HI, NM, NV, UT
Savannah, GA	October 17, 2017	MPO attendees from across the country (workshop held as part of the Association of MPOs [AMPO] Annual Conference)

Main Themes from Regional Forums

- Communication, Coordination and Capacity Building.
- Data Needs and Resources.
- Planning and Decision-Making Process.

What Brings us Together?

- What are your data needs and gaps?
- What data are you missing and might need in the future?

Let's Make Coalitions.

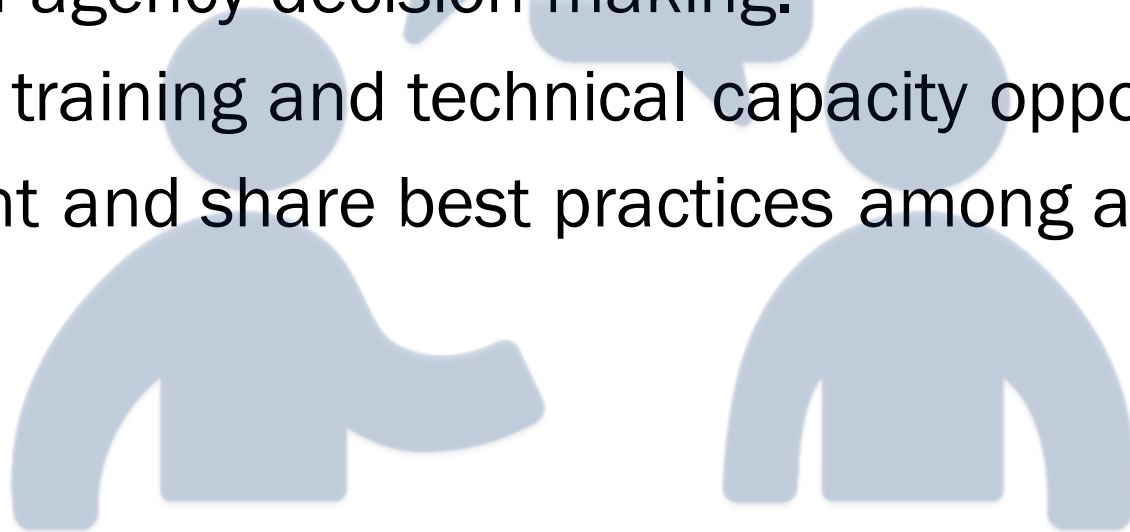
- What are the partnership opportunities?
- Who are your potential partners?

Let's Advance our Priority.

- What are the follow up actions to advance regional Collaboration?

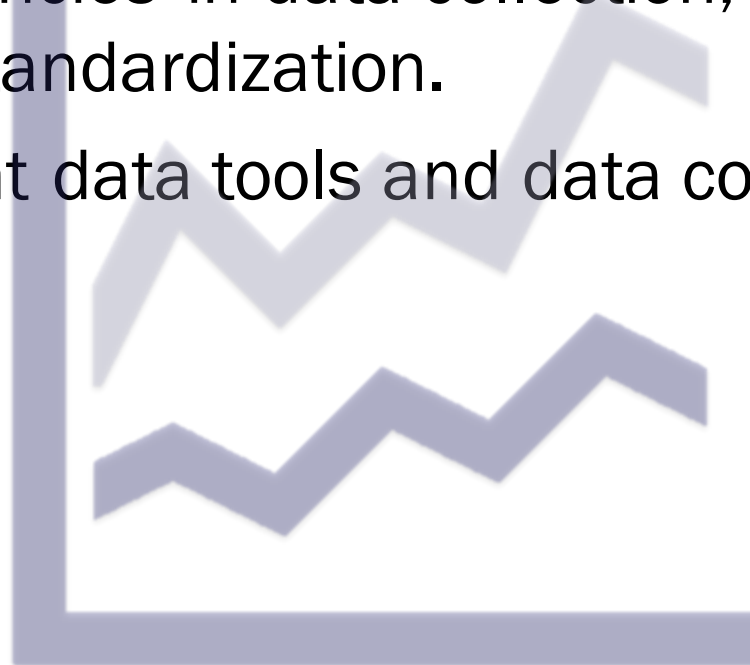
Regional Forums: Communication, Coordination and Capacity Building

- Build and strengthen partnerships between the public and private sectors.
- Build and strengthen regional partnerships between transportation agencies.
- Communicate the benefits of freight data analysis for improved agency decision-making.
- Enhance training and technical capacity opportunities.
- Document and share best practices among agencies.



Regional Forums: Data Needs and Resources

- Enhance data and improve data accessibility.
- Improve freight data quality at the national, State, regional, and local levels.
- Improve efficiencies in data collection, compilation, sharing, and standardization.
- Enhance freight data tools and data collection.



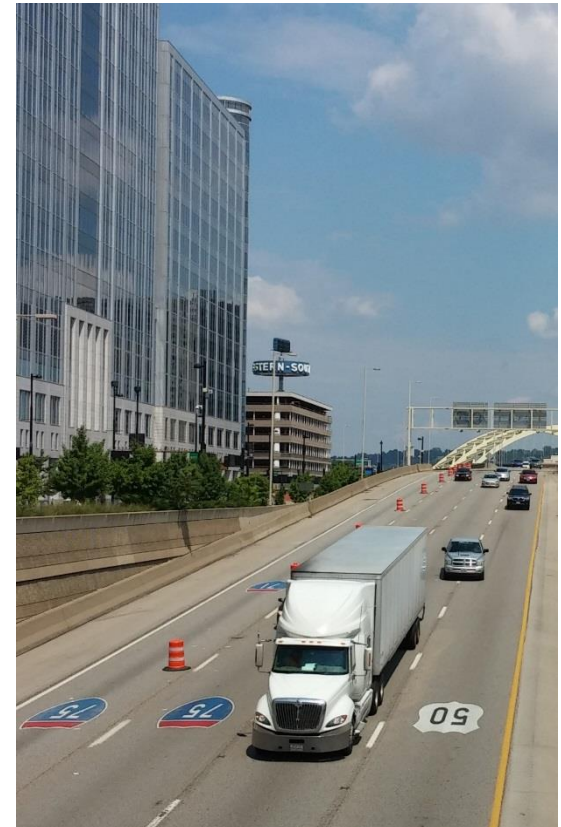
Regional Forums: Planning and Decision-making Process

- Improve integration of freight into transportation and land use planning.
- Improve integration of freight data and analysis within transportation system management and operations (TSMO).
- Support the integration of multimodal freight transportation data.
- Improve collaboration on oversize/overweight permitting data.
- Improve research-to-practice connections.

Advanced Research: Land Use, Demographics and Freight Travel Demand Analysis

Land use, economic development and demographic factors for freight movement, trip generation and freight demand.

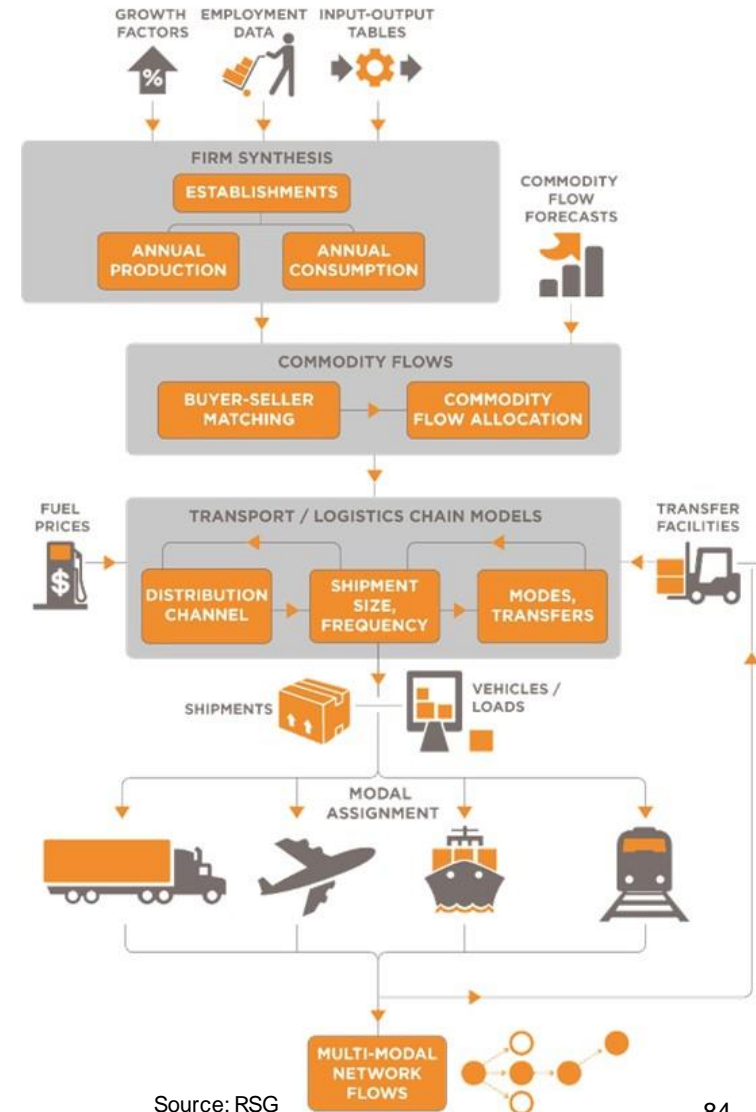
- Integrating land use and freight trip generation.
- Integrating land use with goods/services movement.
- Last mile considerations for deliveries and urban land use.
- Modeling framework for supply chain and delivery systems.
- Public and private data sources and data sharing.
- Scenario planning.
- Megaregional planning.



Source: FHWA

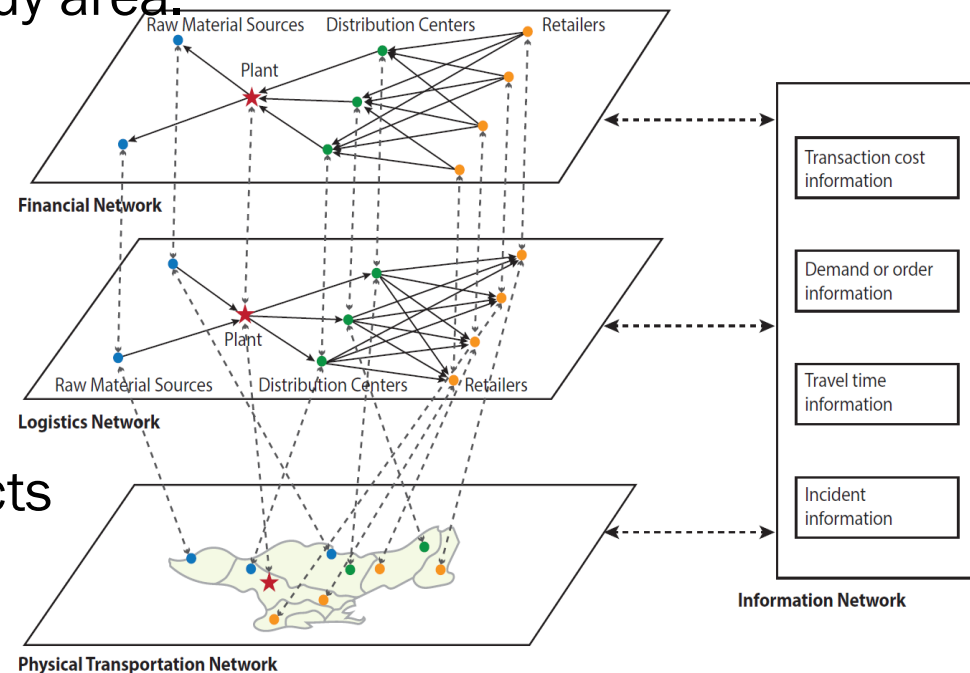
Advanced Research: Behavioral-Based Supply Chain Modeling Guide

- Supply chain procedures and truck touring.
- Firm synthesis, including freight production and consumption.
- Commodity flows, including buyer-supplier matching and commodity flow allocation.
- Transportation/logistics, including distribution channel, vehicle choice and shipment size.
- Modal assignment.
- Network flows, including truck touring models.
- Freight datasets, data collection and data sharing.



Advanced Research: Behavioral-Based Supply Chain Modeling Applications

- Understand economic impacts of freight and the relationship between changes in the economy and changes in demand for freight transportation.
- Understand relationships between freight movement and land-use and spatial development in a study area.
- Understand current freight movements in a study area.
- Evaluate complex freight-related policies and freight-related infrastructure improvements.
- Understand environmental impacts of freight and truck movements.



Source: Xu, Hnacock and Southwork (2003)

Next Steps



- AASHTO Special Committee on Freight.
- AASHTO COP Freight Planning Task Force.
- TRB Freight Committees.
- FHWA C20 Implementation Assistance Pilots reports/resources:
https://ops.fhwa.dot.gov/freight/freight_analysis/fdmdi/index.htm.
- FHWA Quick Response Freight Methods (QRFM) update.
- FHWA Freight Analysis Framework (FAF) Data Improvement.
- Travel and Freight Model Improvement Portal (TMIP/FMIP) –
Community of Practice <https://tmip.org/>.
- FHWA/NHI Training on Freight Data.



SHRP2 SOLUTIONS
STRATEGIC HIGHWAY RESEARCH PROGRAM

Jeff Purdy

Federal Highway Administration
Office of Freight Management and
Operations

202-366-6993

Jeffrey.Purdy@dot.gov

https://ops.fhwa.dot.gov/freight/freight_analysis/fdmdi/index.htm



U.S. Department of Transportation
Federal Highway Administration





C20/Freight Testimonial

Brian Ryder, Baltimore Metro Council



C20 Freight Demand Modeling and Data Improvement – Maryland

- Product Use
- Benefits Achieved
- Project Limitations



C20 Maryland Product Use

- **Passenger Model / Freight Modeling System Integration**
 - Replace 2001 Truck Model in BMC Travel Demand Model with 2018 Freight Modeling System (on-going; will correspond with adoption of the BMC Activity-Based Model)
- **Validation/Scenario Testing**
 - Continue testing and comparing to 2001 Truck Model outputs
 - Develop a traffic count collection plan (next spring)
 - Develop scenarios to test the 2018 Freight Modeling System including:
 - Truck restrictions in East Baltimore (April 2019)
 - Port of Baltimore expansion (future)
 - FAF high, medium and low (future)

C20 Maryland Product Use

Freight Network

- Reviewing network truck volumes 2012 and 2040 (See *Figure 1a & 1b*)
- Exploring commodity flows for each county in region (See *Figure 2a & 2b*)

TAZ-Level Output

- Freight vehicle origin and destinations (See *Figure 3a & 3b*)
- Commercial vehicle trips per day (See *Figure 4*)
- Distribution centers coded to TAZs (See *Figure 5*)

Figure 1a & b

Network Truck Volumes: 2012 & 2040

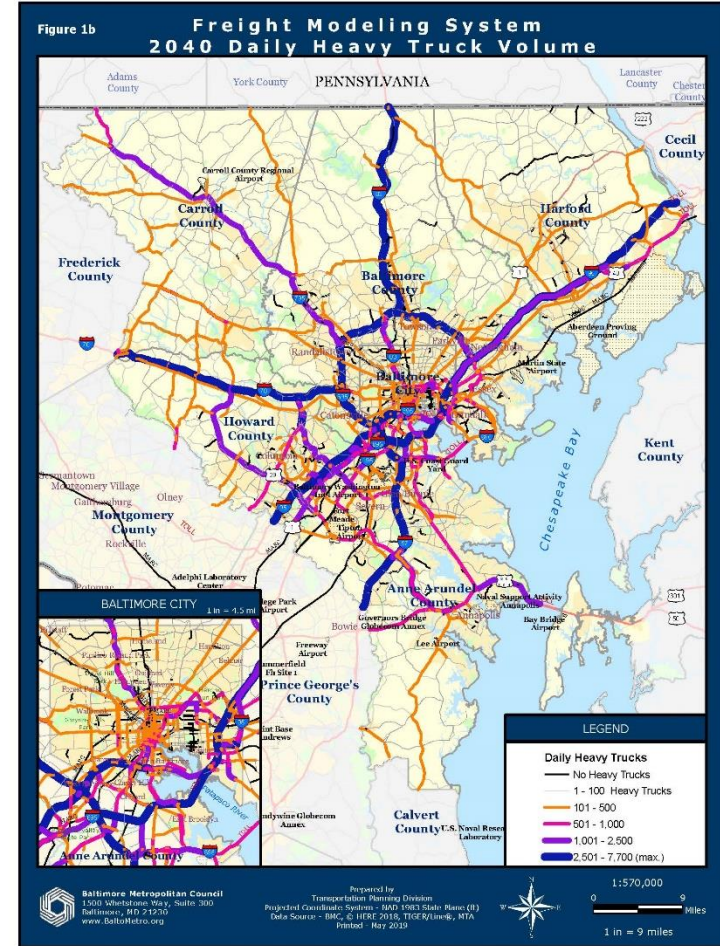
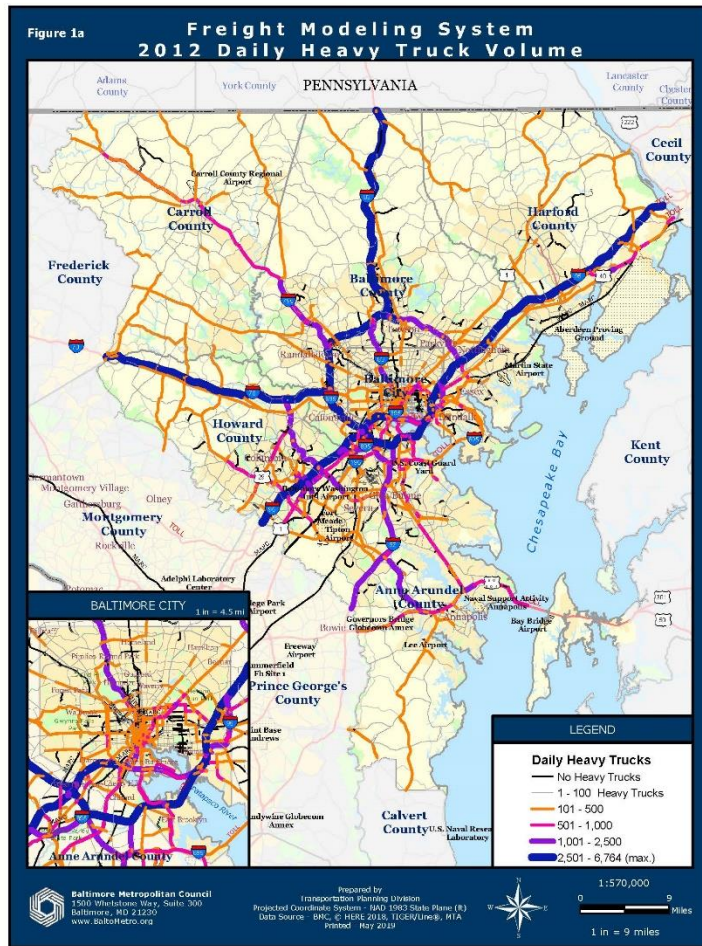


Figure 2a

Commodities: Production and Consumption

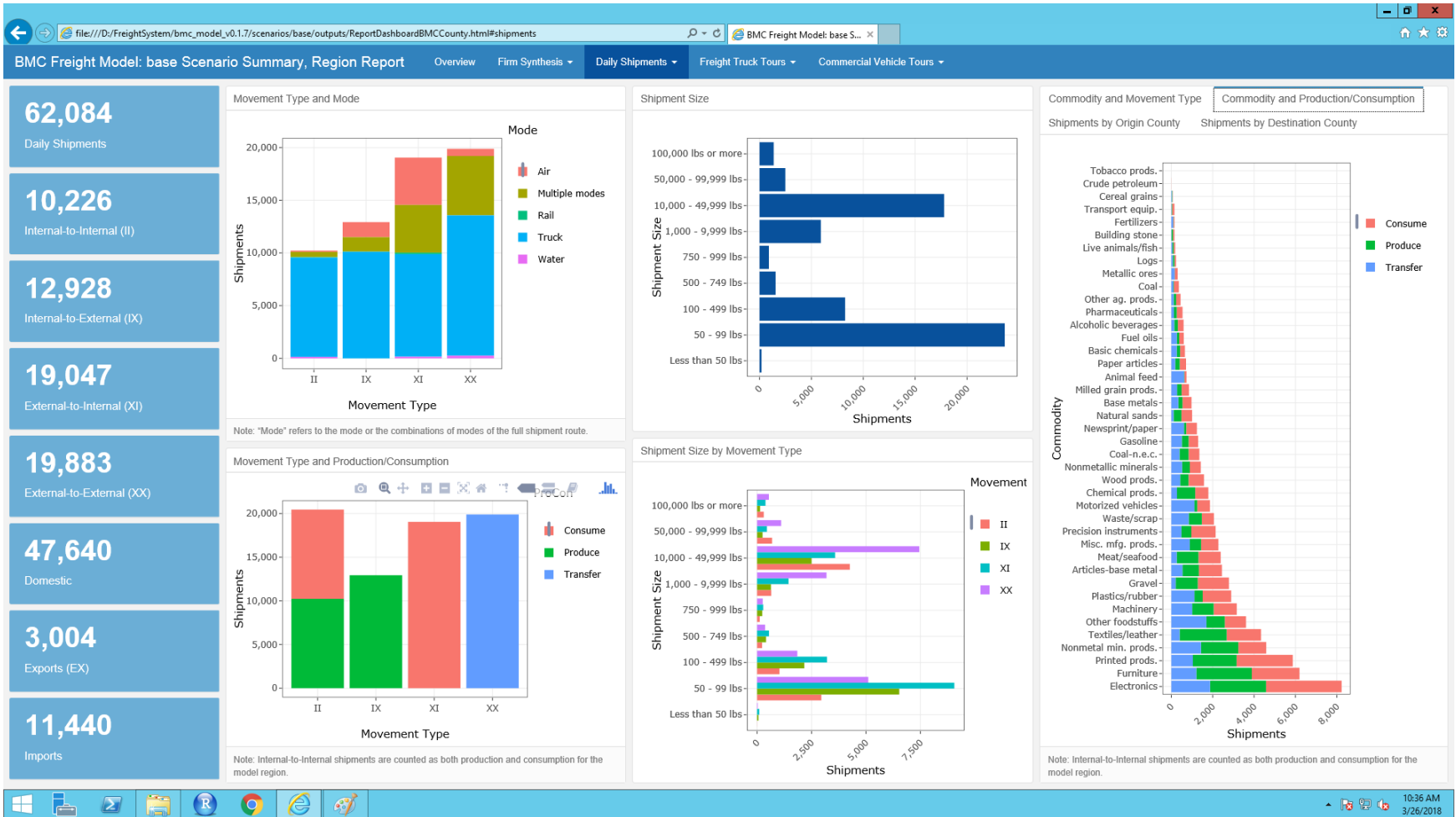


Figure 2b

Commodities: Movement Type

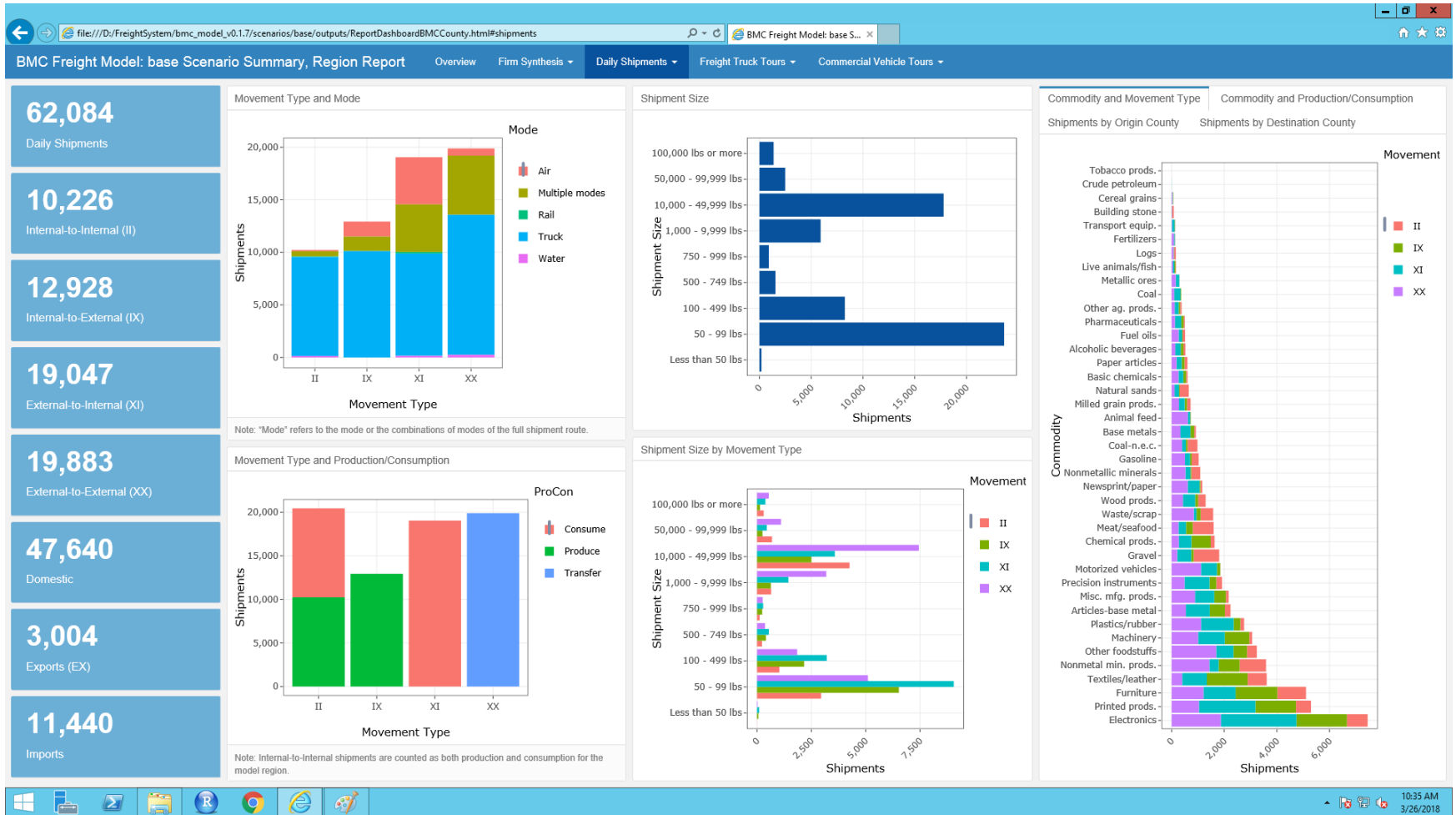
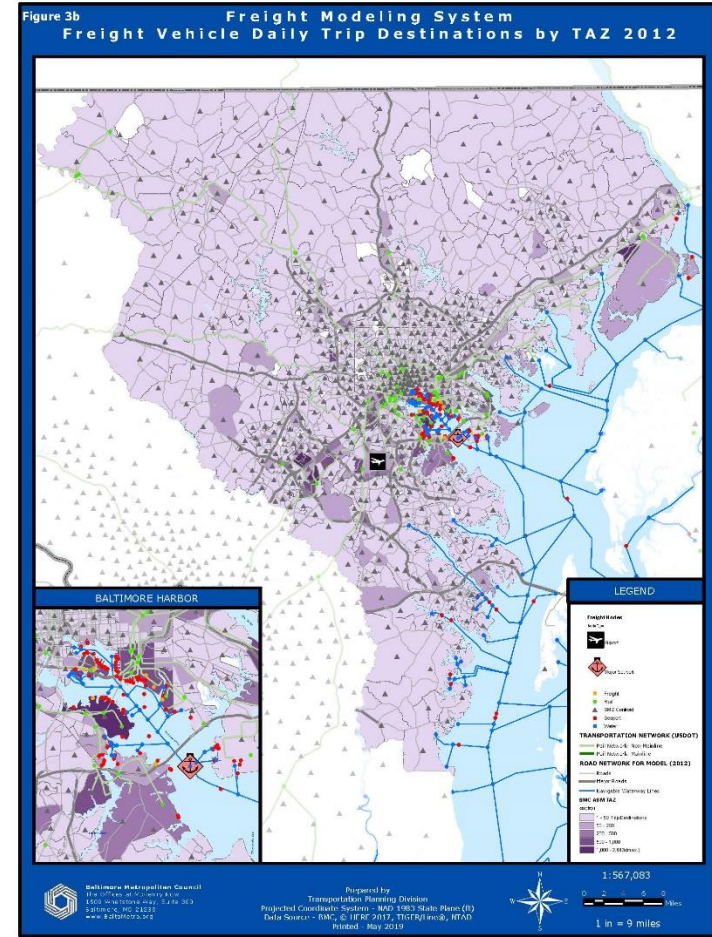
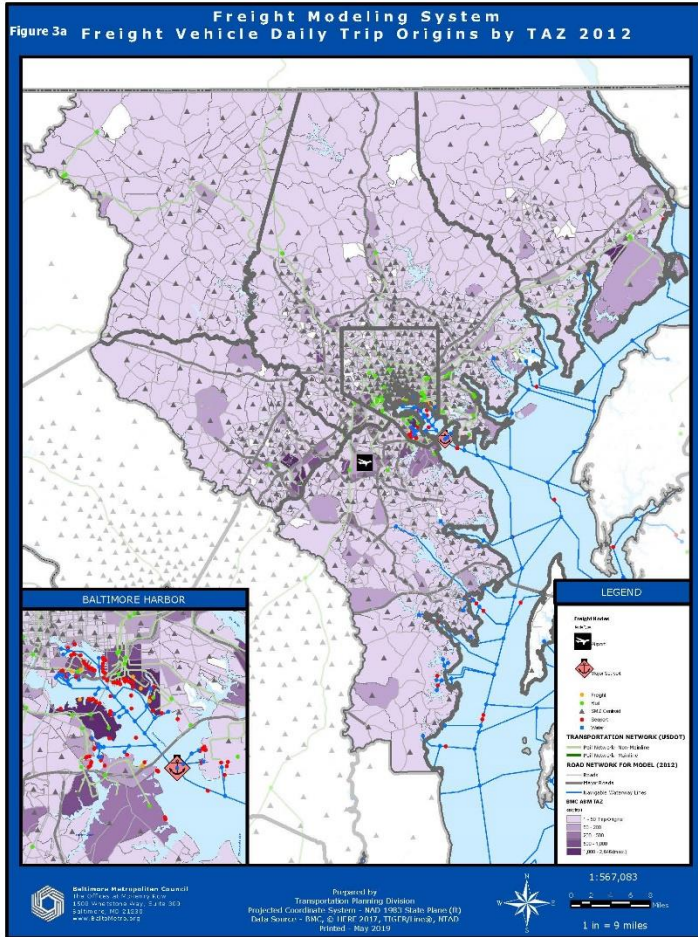
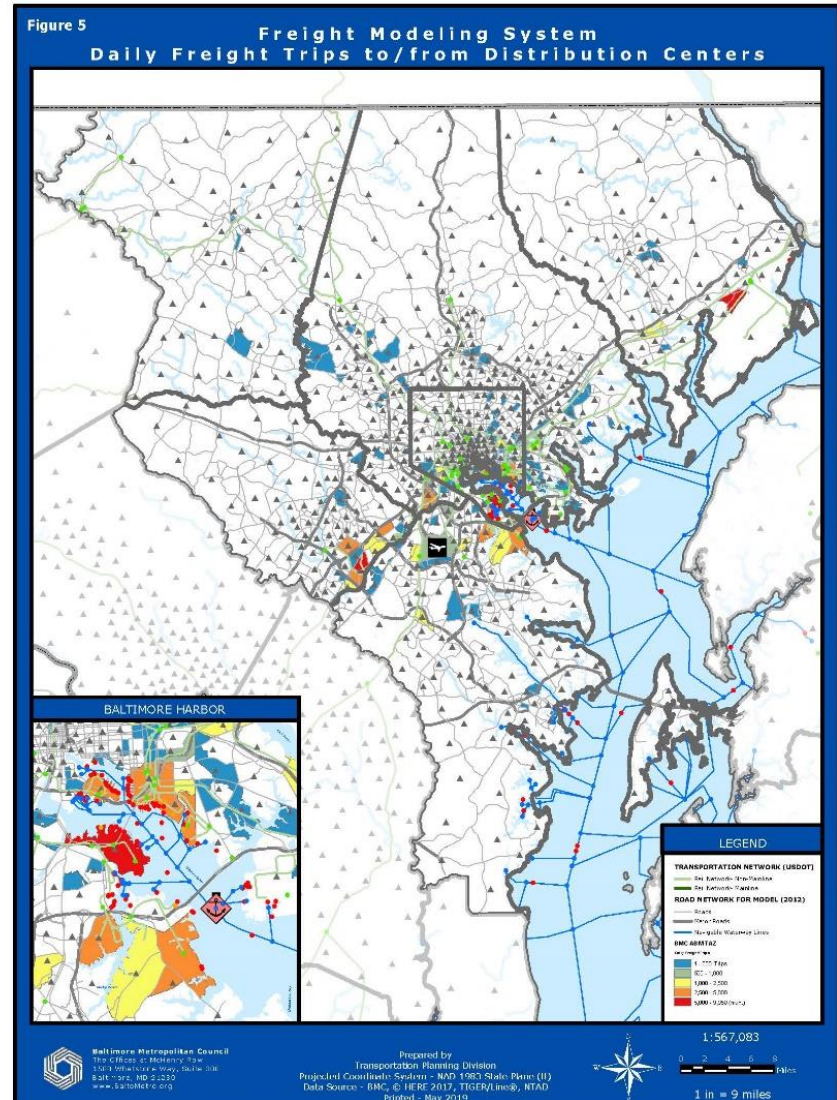
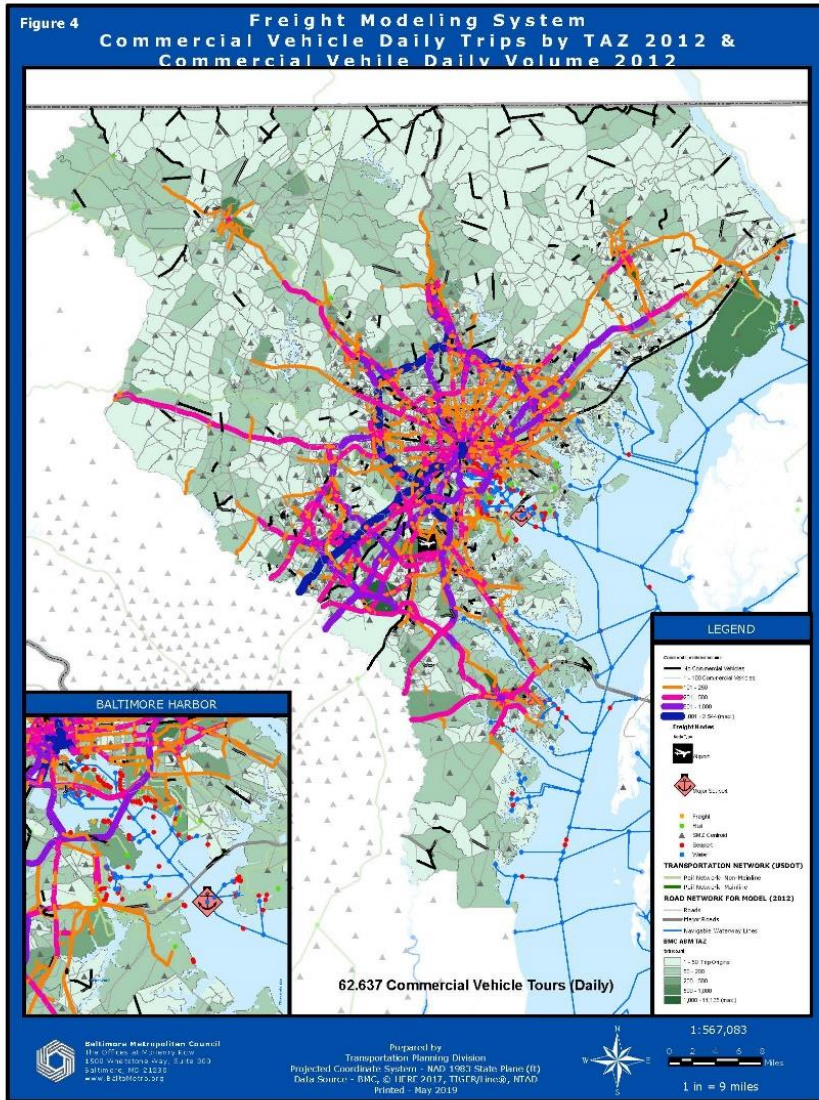


Figure 3a & 3b

Freight Vehicle Origins and Destinations



Commercial Vehicle Activity & Distribution Centers



C20 Maryland Benefits Achieved

- **Freight Database**
 - A new freight database for use by the FMS and other applications
- **Freight Network**
 - A new GIS-based freight network for highway, air, rail and water freight transport
- **Commercial Vehicle Activity**
 - A new goods/services delivery model component

C20 Maryland Project Limitations

- **Schedules**
 - Computer system issues
 - Data acquisition
- **Result Reporting**
 - Challenging reporting all modal data
 - Software knowledge
- **Stakeholder Interest**
 - Reporting and outreach



Break

10:30 – 11:00 am





Product Panels

- PlanWorks
- C19 Expedited Project Delivery
- Ecological





PlanWorks and the Planning Process Bundle

SMEs - Reena Mathews, FHWA & Janet D'Ignazio, ICF

Testimonials - John Miller, VDOT & John Orr, ARC



PlanWorks (C01) and the Planning Process Bundle (C02, C08, C09, C12, C15)

U.S. Department of Transportation
Federal Highway Administration

Search PlanWorks

PlanWorks
Better planning. Better projects.

Home Decision Guide Assessments User Portals Applications Library Glossary

Decision Guide

- Long Range Transportation Planning
- Programming
- Corridor Planning
- Environmental Review/NEPA Merged with Permitting

Applications

Health in Transportation

How do I get started?

Please answer a few questions to help us guide you to the information most applicable to your needs.

Go >

New to PlanWorks? Checkout the PlanWorks training videos and modules.

Go >

About

What's new?

Contact Us

If you are a transportation practitioner at a State DOT, MPO, or consulting firm - using PlanWorks can improve how you develop, prioritize, and inform transportation plans and projects. PlanWorks is a web resource, built from the experiences of transportation partners and stakeholders, which provides how-to information to support collaboration when it is most needed.

more >>

Are you seeking ways to strengthen your collaboration in bicycle and pedestrian planning and project development? The new **Bicycles and Pedestrians Application** in PlanWorks provides detailed information on how multimodal transportation can be incorporated into transportation decision-making. [Hear all about it at this recorded webinar.](#)

If you have any comments, questions, or feedback about this website, please contact:
Reena Mathews
Transportation Specialist
FHWA Office of Planning
reena_mathews@dot.gov

Home Decision Guide Assessments User Portals Applications Library Glossary

Home / Applications

Applications

New applications are a way to use the Decision Guide focused on an individual topic that is of interest to the transportation agency and/or partners and stakeholders. Each application highlights the Key Decisions relevant for that topic and provides a description of this relationship as you roll over the Key Decisions. Viewing the Decision Guide through the lens of a single topic helps practitioners understand:

- Where additional stakeholders may need to be engaged
- The relationship of this topic to other required planning activities, and
- How consideration of the topic evolves across the phases of decision making.

Click on any individual Key Decision for the full detailed information in the Decision Guide.

Bicycles and Pedestrians

Capital Improvement

Economic Development

Freight

Greenhouse Gas Emissions

Health in Transportation

Human Environment and Communities

Land Use

Linking Planning and Operations

Natural Environment and Implementing Eco-Logical

Performance Measures

Planning and Environment Linkages

Public-Private Partnerships

Safety

Stakeholder Collaboration

Transportation Conformity

Visioning and Transportation

PlanWorks and Planning Process Bundle

- **Flexible and adaptable resources to support collaboration in:**
 - Long Range Planning
 - Programming
 - Corridor Planning
 - NEPA/Permitting
- **Primary users State DOTs and MPOs**
 - In partnership with resource agencies, FHWA and stakeholders
- **Access to nine additional SHRP2 products**
- <https://fhwaapps.fhwa.dot.gov/planworks/>

PlanWorks and Planning Process Bundle

- **PlanWorks Content Update**
 - Updated website content and applications
 - Developed training videos and modules
- **Implementation Assistance Program**
 - 22 recipients from MPOs and State DOTs
 - Developed Case Studies for PlanWorks
 - Eight Peer Exchanges 2018-2019

Planning Process Bundle IAP Recipients

– Round 5

Round 5 Lead Adopter and User Incentive IAP Recipient	Planning Process Bundle Products
Atlanta Regional Commission (ARC)	Performance Measures / Visioning / Freight
Community Planning Association of Southwest Idaho (COMPASS)	Performance Measures / Visioning / Freight
Denver Regional Council of Governments (DRCOG)	Performance Measures / Visioning / P3
High Point Urban Area MPO	Visioning
KYOVA Interstate Planning Commission	Performance Measures
Massachusetts Department of Transportation (MassDOT)	Greenhouse Gas Emissions / Freight
Tennessee Department of Transportation (TDOT) / Jackson Area MPO	Performance Measures / Visioning / Freight
Texas Department of Transportation (TxDOT)	Performance Measures / Freight
Utah Department of Transportation (UDOT)	Performance Measures / Freight
Washington State Department of Transportation (WSDOT)	Performance Measures / Greenhouse Gas Emissions

PlanWorks IAP Recipients – Round 6 and 7

Round 6 and 7 Lead Adopter IAP Recipient	PlanWorks Project Focus
Arkansas State Highway and Transportation Department (AHTD)	Long-Range Planning (LRP)
California Department of Transportation (Caltrans)	Corridor
Champaign County Regional Planning Commission (CCRPC)	Corridor
North Central Texas Council of Governments (NCTCOG)	LRP/Performance Measure (PM)/Visioning
Strafford Metropolitan Planning Organization (SMPO)	LRP/PM
Utah Department of Transportation (UDOT)	LRP/PM
Virginia Department of Transportation (VDOT)	Corridor
Charlottesville-Albemarle Metropolitan Planning Organization (CAMPO)	Corridor/Subarea Planning
Colorado Department of Transportation (CDOT)	LRP, Corridor/Subarea Planning
Southeastern Regional Planning and Economic Development District (SRPEDD)	LRP, Programming, and Corridor/Subarea Planning
West Virginia Department of Transportation (WVDOT)	LRP, Programming, Corridor/Subarea Planning, and Environmental Review
Tennessee Department of Transportation (TDOT)	Corridor/Subarea Planning

PlanWorks and Planning Process Bundle

Benefits

- Very flexible and adaptable
- Promotes and supports consistent, systematic and objective planning process
- Promotes and supports effective partnerships
- Increases understanding how to integrate emerging topics into planning decisions
- Useful educational tool
- Useful diagnostic tool
- Provides access to a wide range of topic specific resources

PlanWorks and Planning Process Bundle

Limitations of the Product

- Need to keep content fresh particularly Applications and Reference links, e.g.:
 - Connected and Autonomous Vehicles
 - Mobility on Demand
 - Resilience
 - Bus Rapid Transit
- Additional support for using the tool
- Additional improvements to the technology
- More training available through the website

PlanWorks and Planning Process Bundle – Future

- **Keep Content up to date with through continued investment**
 - Emerging topics --- CAV, resiliency, mobility on demand
 - Update technology, resources
- **Marketing and Outreach**
 - Developing outreach plan with input from users
 - Peer-to-peer is to the most effective form to get people to listen
 - Continue to engage champions and actively find new ones
 - Communication Strategies
 - Webinars, conferences, videos
- **Core Messages**
 - Flexible, streamlined, educational, unbiased, and “Your Partner”



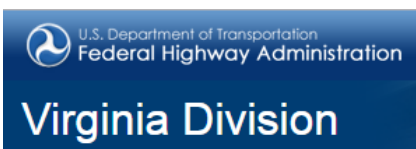
SHRP2 Implementation Grant Project: PlanWorks: A Tool to Support Transportation Programming in Central Virginia

May 20, 2019



**CENTRAL VIRGINIA
METROPOLITAN
PLANNING
ORGANIZATION**

AECOM



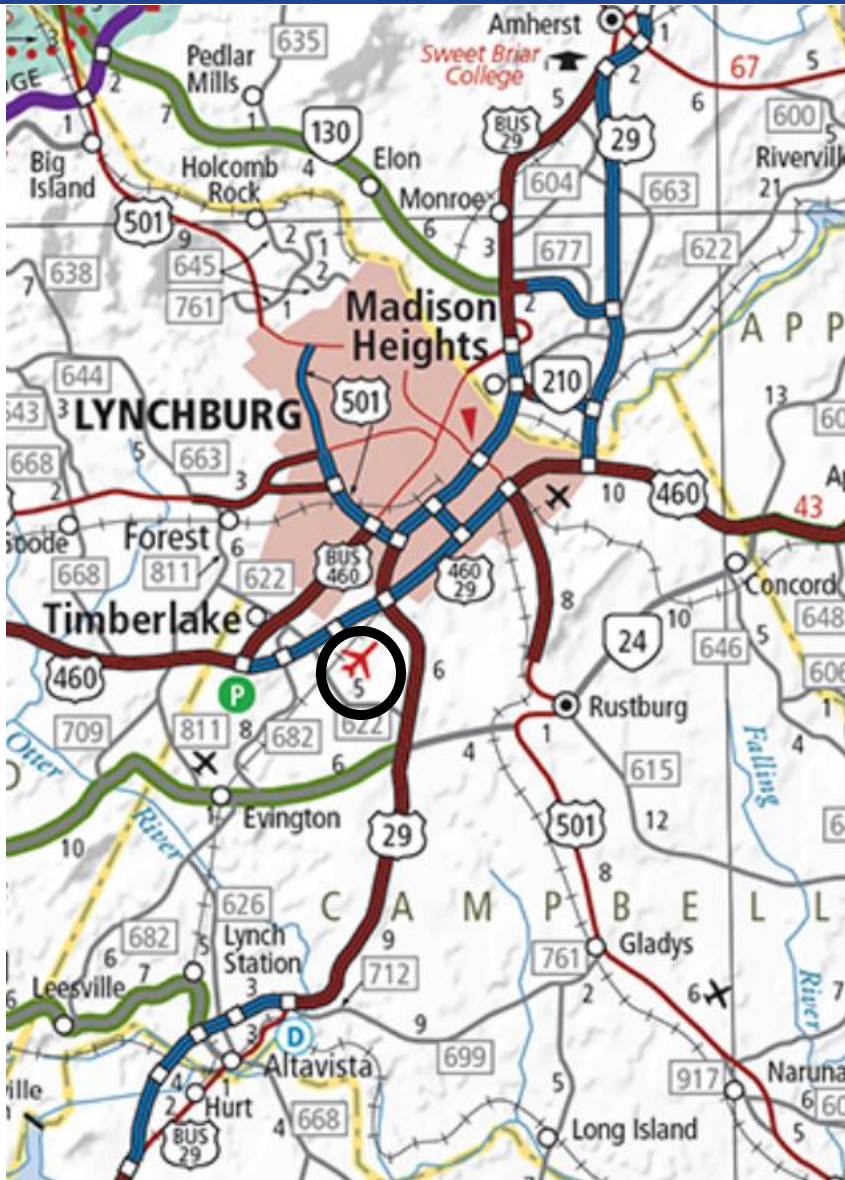
UNIVERSITY
of VIRGINIA



INSTITUTE for
ENVIRONMENTAL NEGOTIATION

**John Miller, Amy O'Leary,
Rick Youngblood, VDOT**

What We Did: Applied Two Planworks Decision Guides



Decision Guide



Long Range Transportation Planning



Programming



Corridor Planning

Campbell County



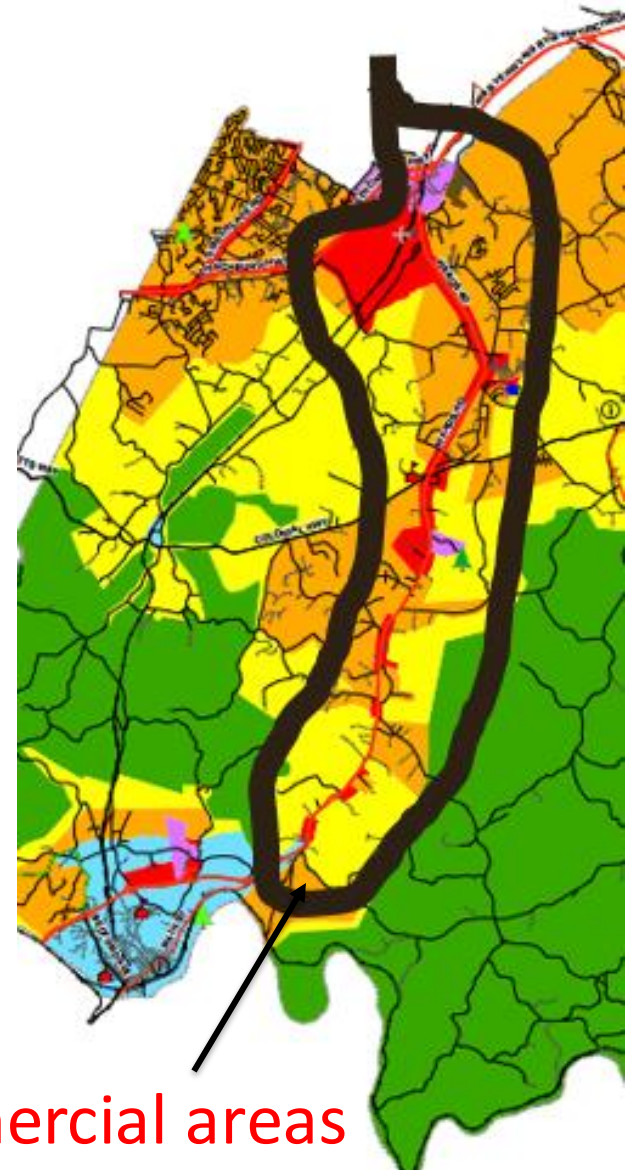
Environmental Review/NEPA
Merged with Permitting
Lynchburg City

Main Goals of Corridor Planning

Identify specific projects that

☐ Have local support

☐ Can be built with available \$



High intensity commercial areas



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 and Analysis

COR-5

Approve Evaluation Criteria, Methods and Measures

COR-6

Approve Range of Solution Sets



COR-7

Adopt Preferred Solution Set

COR-8

Approve Evaluation Criteria, Methods and Measures for Prioritization of Projects

COR-9

Adopt Priorities for Implementation

Module 1. What is the Scope?

Actions

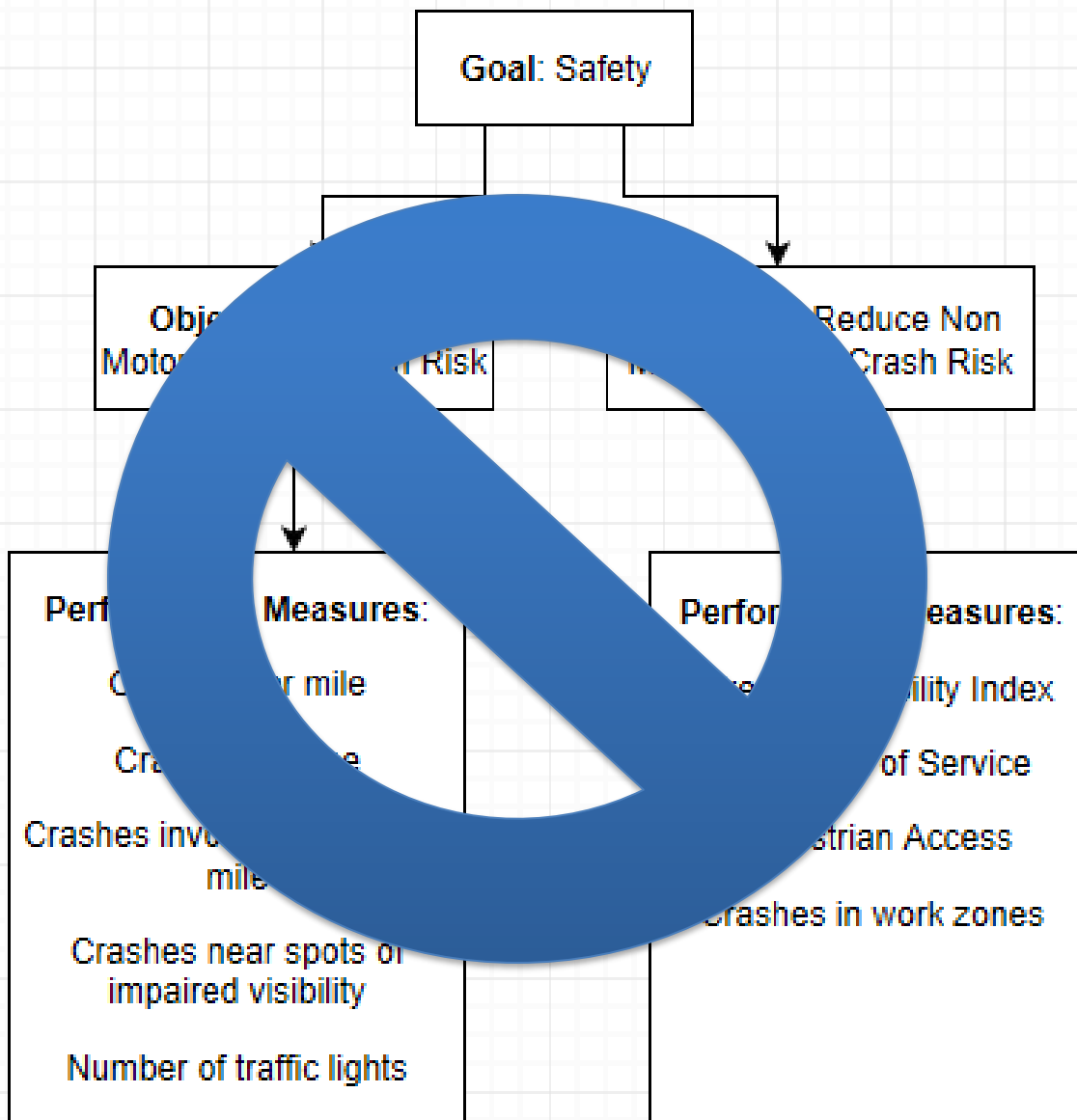
- Supervisors Briefing
- Public meeting

Answers

- Tangible improvements
- All participants



Module 5. Initial Evaluation Criteria



- PDO crashes
- Through delay
- Turning delay

- Safety
- Throughput
- Economic development

Module 6. Solution Sets

Route 29 Assessment...

Click a pin below to view the Route 29 comments provided by nearby residents, business owners and stakeholders at the second Route 29 Corridor Assessment Meeting held on June 23rd, 2016. 123 views

SHARE

2nd Public Meeting Comments

- Bike Lanes
- Bypass
- Bypass
- Bypass
- Bypass
- Bypass
- Bypass
- Bypass
- Congestion
- Congestion
- Congestion
- Congestion/Speed Limit
- Crossover
- Crossover
- Crossover

Not addressed

Economic development

Throughput & safety

Alternative travel

Example comments

- *Finish the bypass*
- *No right on red will cause backups.*
- *Straight line Lynbrook to English Tavern.*
- *Reroute traffic at Yangoon Street*
- *Add bike lanes*

Module 9. Priorities

Goal	Improvements	Cost
Throughput & Safety	Median closures Access realignments	\$5.52 M
Economic Development	Add turn lanes Reduce speed limits	\$4.96 M
Alternative travel	Sidewalks Shared use path	\$8.95 M

A \$32.7 million package for Smart Scale



Benefits



Longer turn lane needed here.

Longer turn lane needed onto Russell Woods.

This intersection will become congested.

Better coordination of land use and transportation.
Transportation needs to anticipate development.

Like! Business develop, but needs to mesh better with traffic needs. Need frontage road?

Benefits

- ❑ *Go slow to go fast*
- ❑ Performance-based planning
- ❑ Corridor preservation focus
- ❑ Stakeholder assessments



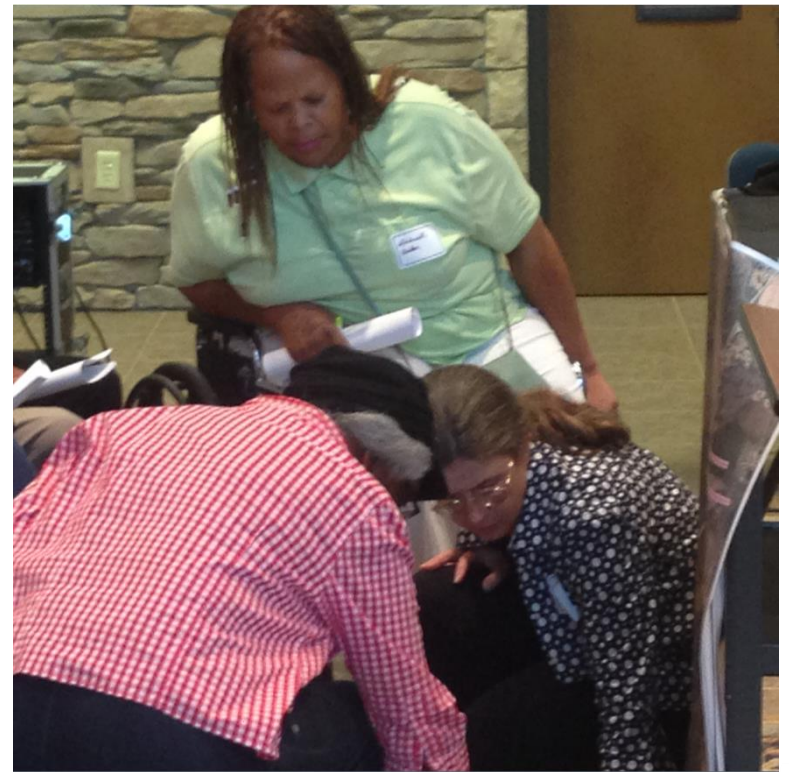
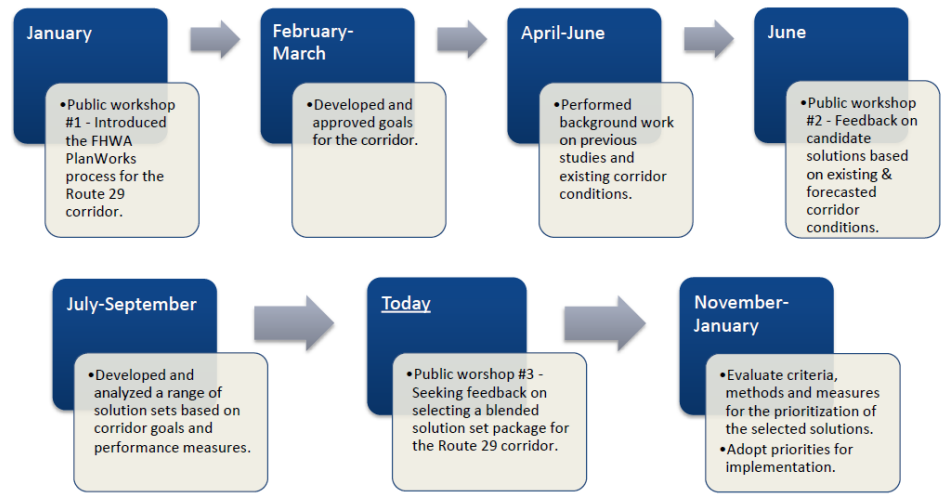
Benefits

PlanWorks Element	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The process steps are clearly stated/documented	○	○	○	○	○
The collective goals are clearly stated and documented	○	○	○	○	○

Route 29 Corridor Assessment Public Workshop #3

October 27, 2016

Recap of where we've been and timeline for moving forward



Limitation: Must Own the Product

COR-7

Adopt Preferred
Solution Set

COR-8

Approve
Evaluation Criteria,
Methods and
Measures for
Prioritization of
Projects

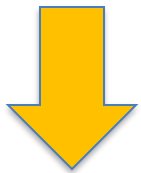
COR-9

Adopt Priorities for
Implementation

*Revise solution set based on
additional information from setting
priorities*

Limitation: Must Agree on Vocabulary

ENV-5	ENV-6	ENV-7	ENV-8	ENV-9
<u>Approve Evaluation Criteria, Methods and Measures</u>	<u>Approve Full Range of Alternatives</u>	<u>Approve Alternatives to be Carried Forward</u>	<u>Approve Draft EIS with Conceptual Mitigation</u>	<u>Approve Resource Agency Public Notice</u>



Do evaluation criteria and measures reflect transportation, environmental, economic, and community outcomes? *(shortened)*

Area	Evaluation Criteria	Measure	How chosen	Role
Transport	Delay	Seconds	As part of developing purpose and need	Choose an alt.
Environment	Parkland	Acres affected	Regulatory process (Section 4f/6f)	Mitigate the choice



PlanWorks is a web resource that supports collaborative decision-making in transportation planning and project development. PlanWorks is built around key decision points in long-range planning, programming, corridor planning, and environmental review. PlanWorks suggests when and how to engage cross-disciplinary partners and stakeholder groups.

Transportation decision-making phase(s): Corridor Planning

Report

- PlanWorks Case Study: Route 29 Corridor Assessment, Campbell County.

http://www.virginiadot.org/projects/resources/Lynchburg/Rt_29_Campbell_Co_Corridor_Assessment/PlanWorks_Case_Study_Route_29_Corridor_Assessment,_Campbell_County.pdf

Websites

- http://www.virginiadot.org/projects/lynchburg/route_29__corridor.asp
Funding Request for Smart Scale:
<https://smartportal.virginiahb2.org/#/public/applications/2020/hb2/view/F15-0000004534-R01>

Participants in the Route 29 Corridor Assessment

VDOT: Rick Youngblood, David Cook, Amy O'Leary, John Miller

FHWA: Cheng Yan

AECOM: Bill Cashman, Chris Lawrence, Shelley Bogue

Region 2000: Bob White **Campbell County:** Paul Harvey

UVA IEN: Judie Talbot, Tanya Denckla-Cobb, Leah Brumfeld



SHRP2 Implementation Grant Project:

Strengthening the Role of Performance Planning, Visioning, and Freight Planning in the Atlanta Region's Planning Process

May 20, 2019

John Orr, ARC

Utilizing PlanWorks to Streamline and Improve Planning Processes

- C02 - Performance Measures for Highway Capacity Decision-Making
- CO8 - Transportation Visioning for Communities
- C15 - Integrating Freight Considerations into Highway Capacity Planning Process
- Started in 2015; Completed in 2017
- 20 County Atlanta Region Area
- Partnership between MPO, GDOT, local governments and FHWA



PlanWorks Resources Assisted in Major Regional Plan/TIP Update

- Visioning Guide - LRP-1 and LRP-2

Utilized the guide to help develop processes that updated regional vision, goals and policies in 2016.

- Freight - LRP-2

Incorporated freight stakeholders into the planning processes via national best practices identified.

- Project Prioritization - PRO-4

Outstanding PlanWorks processes for prioritization; used to inform a \$400 million project solicitation

USE OF PLANWORKS APPLICATIONS AND TOOLS

SUCCESSFULLY SUPPORTED A \$400 MILLION TIP PROJECT

SOLICITATION

Benefits Achieved: Improved Evaluation Measures for Transit



Reliability // On-time performance expectation based on MARTA's current services by mode.



Social Equity // Population within 1/2 mile who are non-white or under the poverty line.



Connectivity // Number of connections between the project and existing high-frequency transit services.



Compatibility // Ratio of jobs and population within 1/2 mile.



Efficiency // Jobs and population within 1/2 mile of station areas divided by weekday service miles.



Job Accessibility // Built-in Conveyal measures weighted by total population and social equity factors.



Sensitivity // Intersections with culturally and environmentally sensitive land uses, weighted by project length.

Benefits Achieved: PlanWorks Guided Updates to Roadway Capacity Evaluation Methods

Vision	Criteria	Measures
World Class Infrastructure	Mobility/Congestion	1) Change in Congestion Intensity 2) Change in Congestion Extent
	Reliability	Worst Travel Time Reliability
	Network Connectivity	Connections to Other Facilities
	Multimodalism	Multimodal Accommodations
	Asset Management & Resiliency	Facility Vulnerability ¹⁹
Healthy Livable Communities	Safety	Improved Safety
	Air Quality & Climate Change	1) Project's Regional Emissions 2) Near Road Emissions Exposure
	Cultural & Environmental Resources	Impact on Culturally and Environmentally Sensitive Land Uses
	Social Equity	Addressing Social Equity
	Land Use Compatibility	-
Competitive Economy	Goods Movement	Supporting the Freight Economy
	Employment Accessibility	1) Supporting Regionally Significant Locations 2) Employment Accessibility

https://documents.atlantaregional.com/transportation/projsolicitation/2017/project_eval_documentation.pdf

Benefits Achieved: Including Freight Considerations in Project Evaluation

Measure	Metric	Nature of Metric	Sponsor Provided	Percent of Criterion Score
1) Heavy Truck Accessibility	Does the project reconstruct load-limited bridges to improve freight movement?	Yes/No	Yes	50%
2) Regional Freight Significance	Does the project improve the movement of freight and is it located on ARC's regional freight system (ASTRoMaP), GDOT's Statewide Designated Freight Corridors or the FHWA National Highway Freight Network (NHFN)?	Yes/No	No	50%

https://documents.atlantaregional.com/transportation/projsolicitation/2017/project_eval_documentation.pdf

Product Limits/Observations...

- A user must invest some time to learn how to navigate the website efficiently
- Visioning modules should be updated – in the future - to reflect some of the latest trends in scenario planning
- On-going maintenance of PlanWorks will be required to reflect the evolution of performance-based planning principles



C19 Expedited Project Delivery

SME – David Williams, FHWA

Testimonial – Steven Braun, FDOT



C19 Expedited Project Delivery

- **Product Benefits**
 - Better projects & outcomes
 - Improved relationships
 - Enable a wholistic look at process
 - Save time and reduce project delays.
- **Product limitation is its board focus**
- **Currently marketing strategies & Tools**



VTrans Bridge Program staff at a project site. (VTrans)

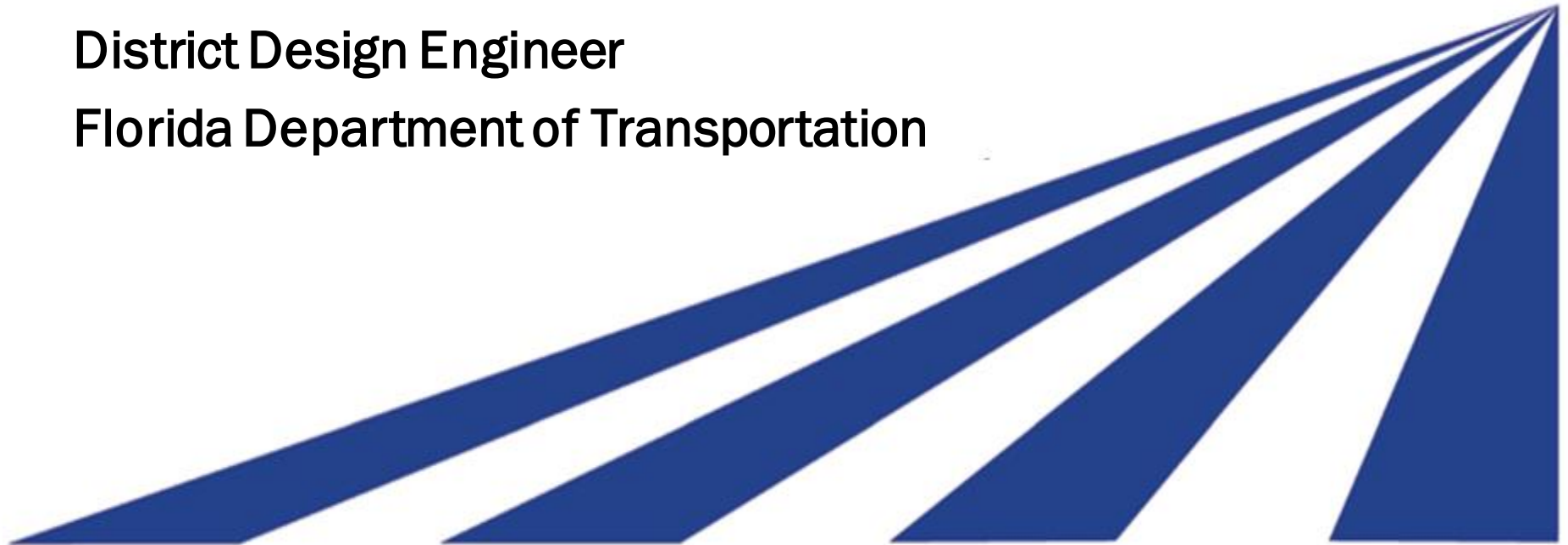


Expediting Project Delivery (C-19)

Steven C. Braun, PE

District Design Engineer

Florida Department of Transportation



Outline

- I. Existing FDOT Streamlining Processes
- II. Value Engineering PD&E Process Review
- III. SHRP-2 Project Approach and Recommendations
- IV. Statewide Initiatives

**PD&E: “Project Development & Environment” = NEPA Phase*

Foundation of Streamlining Initiatives

Efficient Transportation Decision Making (ETDM)

- Established in 2006
 - MAP-21: “Environmental Streamlining”
- GIS Based Program
- Agency Coordination
 - Environmental Technical Advisory Team
- Screening Events
 - Planning
 - Programming

The Benefits

- *Early coordination with local, state, and federal partners*
- *Identify potential impacts within/adjacent to corridor*
- *Receive public comments early in the process*
- *Screen alternatives*
- *Focus on key issues*
- *Better define project scope*

“Value Engineering” Process Review

- Evaluate processes (not projects)
- Multi-disciplined team structure
- “Think Tank” with buy-in from management
- Identify recommendations for implementation
- PD&E, R/W, Pond Siting, Safety, Lane Elimination Processes

The Benefits

- *Process Improvements*
- *Inter-office & industry input*
- *Identify system constraints and develop working solutions*
- *PD&E Process Review: 16 recommendations developed for further consideration*

D4 VE Recommendations

V.E. Recommendation No.5: Allow more preliminary engineering

Goal

Expedite PD&E
and Design
projects

Objectives

Conduct Pre-work activities in advance of the PD&E Study

Advance Preliminary Design to overlap PD&E

Continuity of PD&E and Design Project Manager

D4 VE Recommendations

V.E. Recommendation No.7: Early identification and consideration of environmental risks

Goal

Minimize changes during the Design phase

Objectives

Early identification of risk (early stages of PD&E).

Identify and account for potential environmental impacts during the alternatives evaluation process.

Standardize the environmental element of the alternative selection matrix

Quantify environmental impacts due to design changes.

Why apply for the SHRP2 Assistance?

- Assist with the implementation of VE recommendations
- Identify additional strategies
 - Accelerating project schedules
 - Reducing delay by early identification of issues

Project Approach

SHRP2 Award from FHWA



Determine Implementation Strategies for VE Recommendations



Focus on Constraints Identified by FHWA (C-19 Report)



Held Assessment Workshops (2)
(FHWA, FDOT and Resource Agencies)

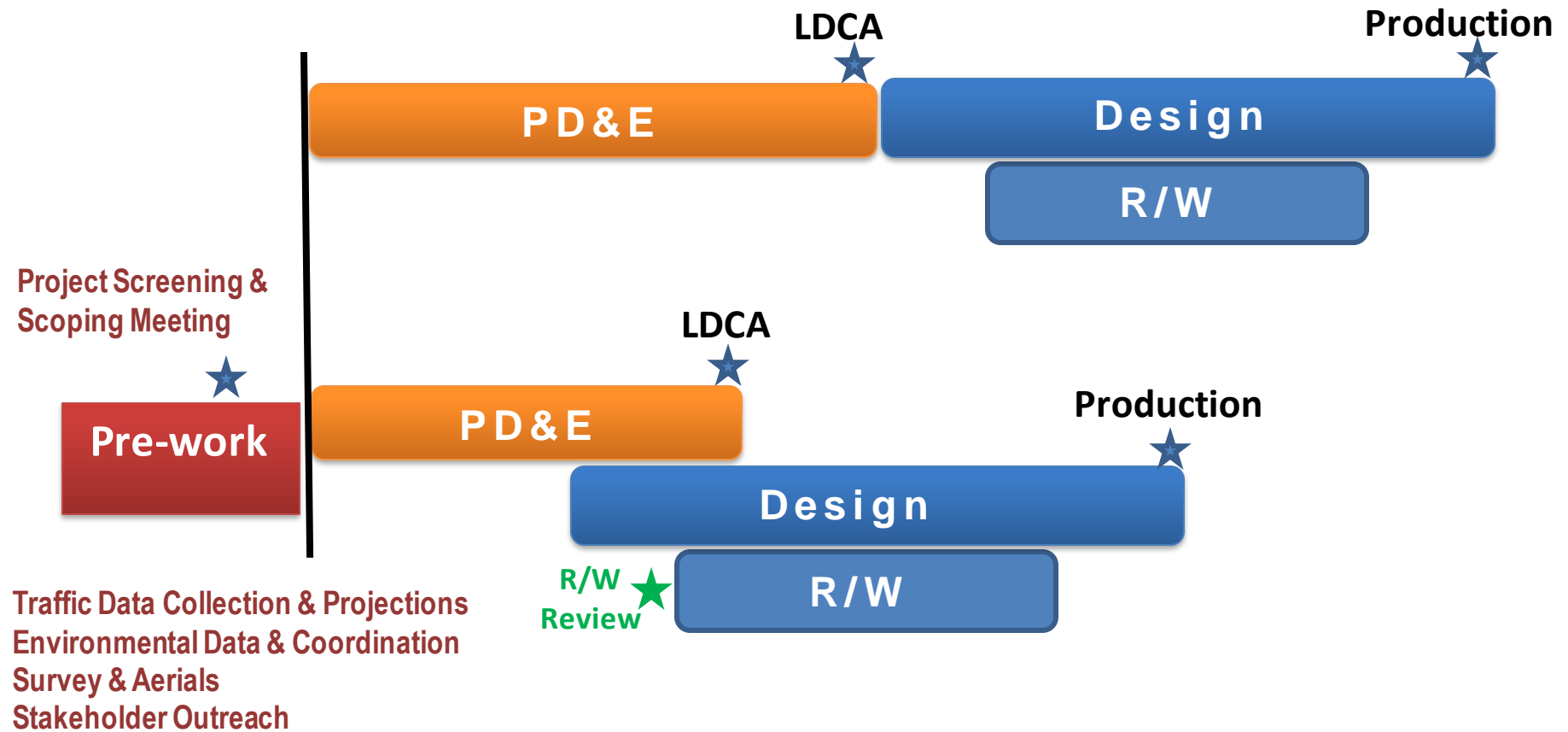
Project Recommendations

- **Early Identification of Issues & Funding Needs**

- **Advancement of “Pre-work” (Survey, Traffic, Environmental)**
 - Advance key activities
(Survey, Traffic, Environmental, Public Involvement)
 - Scope Report & Scope Development Meeting
 - Improved Scope and Purpose & Need
 - Utilization of Technical Support Contracts
 - Streamlined Schedule Templates

Project Recommendations (Pre-work)

More Efficient Work Processes



Project Recommendations



- **NEPA Documents**
 - Developed “Check-lists” for Document Reviews
 - Consolidation of Environmental Documents

- **Project Continuity**
 - Overlap PD&E and Design Schedules
 - Continuity of Project Manager
 - Options for single consultant contract for PD&E and Design

- **Contributed to Statewide Initiatives**
 - State-wide Acceleration Transformation (SWAT)

Statewide Initiatives

State-wide Acceleration Transformation (SWAT)

- Formed Statewide & District SWAT Teams
- SWAT Planning Meeting
 - Scopes / Schedules / Strategies / Funding
- Standard practice of conducting “pre-work”
- Standard staff hour estimates
- Interagency Agreements
 - Interchange Access Process (FHWA)
 - NEPA Assignment (FHWA)
 - Historic Resources (SHPO)
 - ETDM Updated Agreement

Statewide Initiatives

SWAT Dashboard

- Statewide Schedule Milestones
- Executive Dashboard Tracking
- The dashboard is updated and reviewed regularly at Executive Meetings
- The dashboard tracks time from PD&E Advertisement to Production Date

State Wide Acceleration and Transformation (SWAT) / Not Federal Eligible (NFE) Dashboard

Project schedule information is from a PSM export file dated 09/22/2015 12:42 am, not a live connection to the PSM database ([more info...](#))

Track: Search for a Tracked Item

Highlight: Highlight Changes Since

Layout: Summary Detailed Executive

Exp:

Status	Prioritized in Fiscal Year	District	Item / Segment	Item Description	Project Likely Requires New ROW	Estimated Federal COA	NEPA 30% / NEPA 60% / SEIR (months)	PD&E Advertisement (PSM 705)	SEIR Start (PSM 709)	Public Hearing (PSM 262)	SEIR APPROVED (PSM 734)	I (F)
Current	14/15	1	435111-1	SR 951 FROM MANATEE RD TO N OF TOWER RD	Yes	Type II CE	36 / 61 / 40	05/27/2014	02/09/2015	06/14/2017	09/18/2017	01
Current		2	434559-1	SR 24 (ARCHER RD) FROM US 27A/BRONSON TO SW 75TH ST/TOWER RD	Yes	Type II CE	36 / 61 / 6	09/10/2015	09/11/2015	07/07/2017	02/29/2016	
Current	14/15	2	435821-1	SR 200 (US 301) AT CRAWFORD ROAD	Yes	Type II CE	36 / 61 / 14	01/05/2015	06/17/2015		02/26/2016	1f
Current	14/15	2	438558-1	STARKE RR OVERPASS FROM US 301 TO EAST OF CSX RR	Yes	EA	82 / 92 / 33	02/04/2014	06/09/2015	09/01/2016	11/01/2016	1f
Current	14/15	3	217910-2	SR 75 (US 231) FROM S OF SR 30A (US 98) 15TH STREET TO SR 20	Yes	Type II CE	36 / 61 / 29	05/19/2014	09/24/2014	06/13/2016	11/02/2016	
Current	14/15	4	438870-1	SR-714/SW MARTIN HWY FROM CITRUS BLVD. TO SW MARTIN DOWNS BLVD.	Yes	Type II CE	36 / 61 / PSM		09/26/2016	11/09/2017	01/17/2018	01
Current	14/15	5	433805-1	SR 501 FROM MICHIGAN AVENUE TO INDUSTRY ROAD	Yes	Type II CE	36 / 61 / 16	02/02/2015	03/13/2015	02/22/2016	04/29/2016	01
Current	14/15	6	433511-1	INE 203 ST & NE 215 ST INTERSECTION IMPROVMTS BTWN US-1 & W. DIXIE HWY	Yes	Type II CE	36 / 61 / 28	10/07/2013	02/04/2015	10/14/2015	12/15/2015	04
Current	14/15	6	433827-1	SR 90/SW 8 STREET AT SR 973/SW 87 AVENUE	Yes	EA	82 / 92 / PSM	07/07/2014	02/18/2015			
Current	15/16	7	257147-1	SR 888 (ULMERTON RD) FROM W OF 38TH ST NORTH TO W OF INTERSTATE 275	Yes	Type II CE	36 / 61 / PSM					11
Current	14/15	7	436750-1	SR 60 FROM VALRICO RD TO DOVER RD	Yes	Type II CE	36 / 61 / 41	12/02/2011	07/18/2014	11/08/2014	05/08/2015	01
Current	14/15	7	436750-2	SR 60 FROM DOVER RD TO SR 39	Yes	Type II CE	36 / 61 / 41	12/02/2011	07/18/2014	11/08/2014	05/08/2015	01
Current	14/15	7	435915-1	SR 52 EXTENSION FROM E OF MCKENDREE RD TO E OF US 301	Yes	EA	82 / 92 / 11	10/01/2014	12/04/2014	08/02/2015	08/28/2015	01
Current	14/15	Turnpike	435793-1	PD&E WIDEN SAWGRASS EXPY-S OF SUNRISE TO S OF US441 (MP .5 TO 18)	No	Type II CE	36 / 61 / 28	01/05/2015	06/01/2015	11/10/2016	03/13/2017	
Current	14/15	Turnpike	437153-1	PD&E WIDEN SAWGRASS S OF US 441 TO W OF POWERLINE (MP 18-22)	Yes	Type II CE	36 / 61 / 30	08/31/2015	05/17/2016	10/13/2017	02/14/2018	

NOTES:

NEPA Assignment

- FHWA assigned NEPA responsibilities to FDOT via MOU (December 2016)
- FDOT replaced FHWA as the lead agency for highway projects
- Developed SWEPT (Statewide Environmental Project Tracker)
- Initial results are meeting or exceeding the anticipated 25% reduction in time
- FHWA Audits
 - 13 successful practices (2017)
 - 11 successful practices (2018)



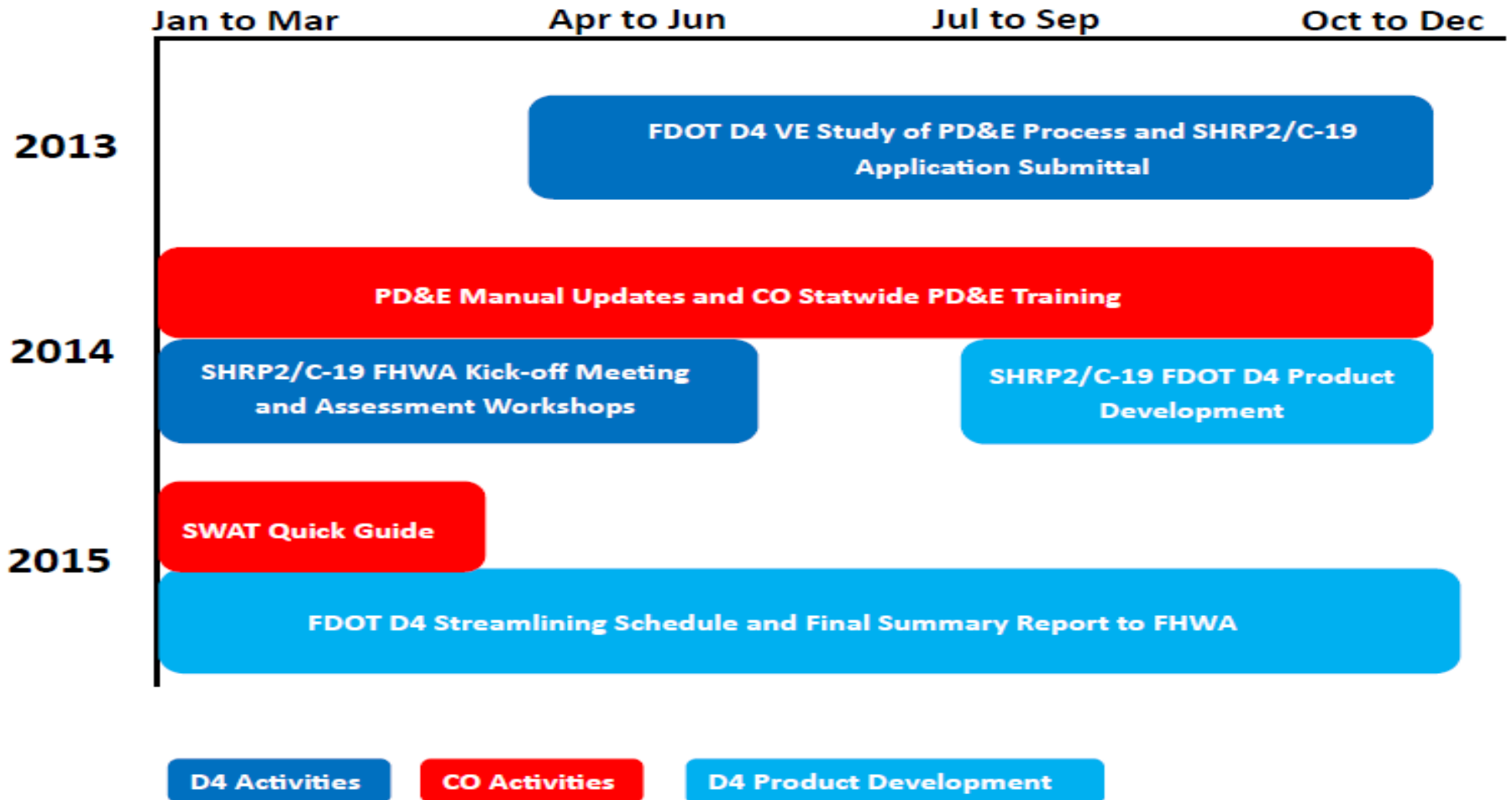
Statewide Initiatives

Enhancements since Self-Assessment / Audit

- Commitment tracker module with companion statewide training
- Internal monitoring reports developed for management
- Scope of Services Tool
- New Project File and Records Management chapter in the PD&E Manual
- Form modifications for Planning Consistency & Essential Fish Habitat (EFH) considerations
- Expanding inventory of computer based training



FDOT Expedited Project Delivery Timeline



Shared Recommendations



ACCELERATING PRE-CONSTRUCTION PROJECT DELIVERY

Planning
Environmental (NEPA)
Design

January 2017

Presented By:

Scott Peterson, PE
Florida Department of
Transportation

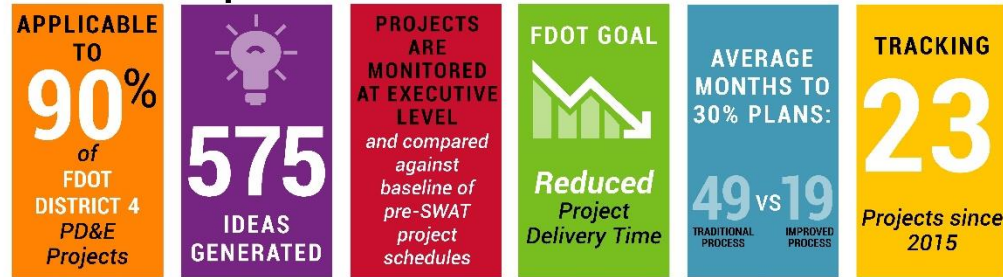
Joshua Salazar, PE
HDR



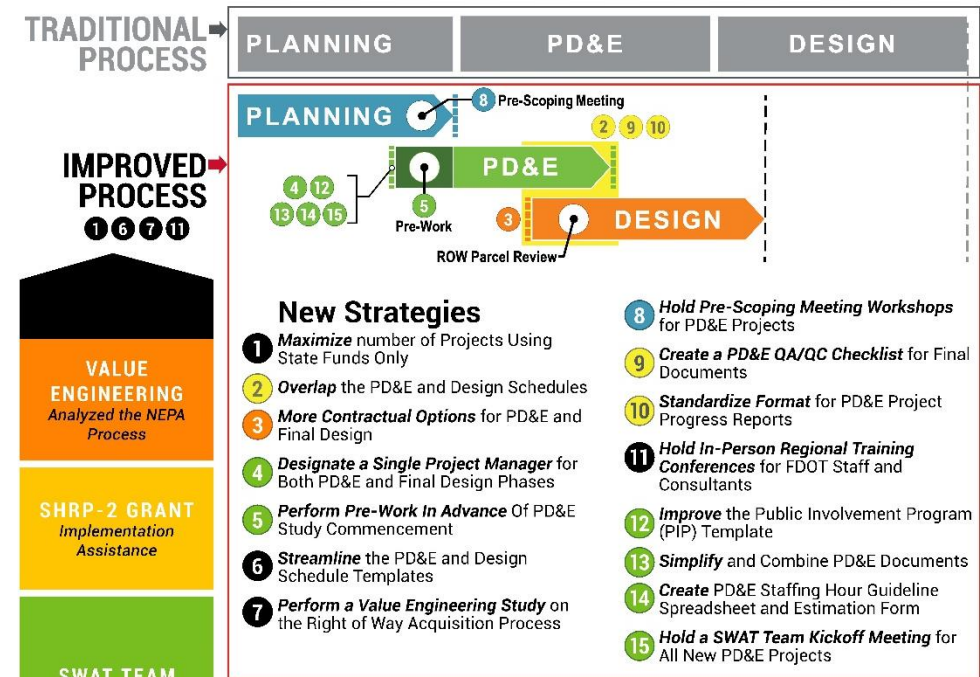
ACCELERATING PRE-CONSTRUCTION PROJECT DELIVERY

Planning • Environmental (NEPA) • Design

About the Improved Process



Process Comparison



New Strategies

- 1 Maximize number of Projects Using State Funds Only
- 2 Overlap the PD&E and Design Schedules
- 3 More Contractual Options for PD&E and Final Design
- 4 Designate a Single Project Manager for Both PD&E and Final Design Phases
- 5 Perform Pre-Work In Advance Of PD&E Study Commencement
- 6 Streamline the PD&E and Design Schedule Templates
- 7 Perform a Value Engineering Study on the Right of Way Acquisition Process
- 8 Hold Pre-Scoping Meeting Workshops for PD&E Projects
- 9 Create a PD&E QA/QC Checklist for Final Documents
- 10 Standardize Format for PD&E Project Progress Reports
- 11 Hold In-Person Regional Training Conferences for FDOT Staff and Consultants
- 12 Improve the Public Involvement Program (PIP) Template
- 13 Simplify and Combine PD&E Documents
- 14 Create PD&E Staffing Hour Guideline Spreadsheet and Estimation Form
- 15 Hold a SWAT Team Kickoff Meeting for All New PD&E Projects

VALUE ENGINEERING
Analyzed the NEPA Process

SHRP-2 GRANT
Implementation Assistance

SWAT TEAM
Statewide Acceleration & Transformation Team



Steven C. Braun, PE

Florida Department of Transportation

steve.braun@dot.state.fl.us

(954) 777-4143

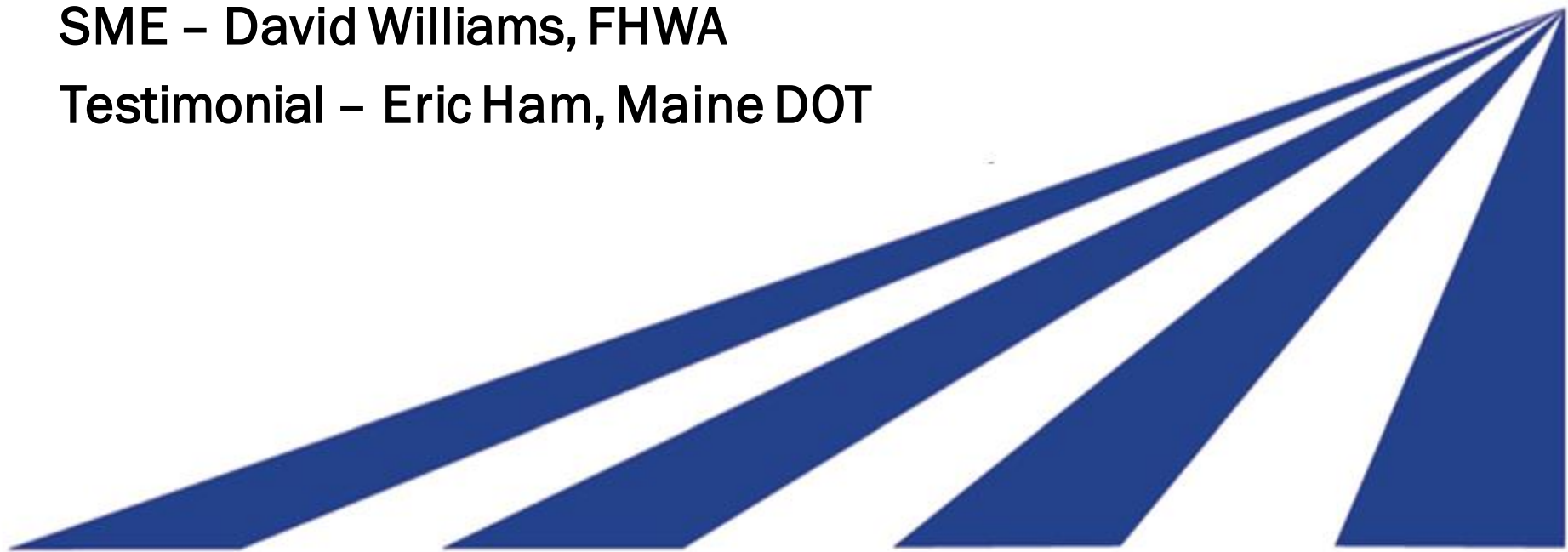




Eco-Logical

SME – David Williams, FHWA

Testimonial – Eric Ham, Maine DOT



C06 Eco-Logical

- Eco-Logical is a 9-step Landscape scale approach to Transportation project development
- Implemented Eco-Logical using 6 Strategies to improve the state of the practice
- Benefits include expediting project delivery, improving partnerships, and achieving better environmental outcomes.



C06 Eco-Logical

- Limitations include additional support and the slow rate of reporting on quantifiable results
- Currently integrating Eco-Logical into programs and initiatives, engaging agency and partner leadership



Participants at the Implementing Eco-Logical IAP Peer Exchange, October 2015 (Photo by FHWA)



Eco-Logical Testimonial Maine DOT

Eric Ham

Field Services Division Manger



SHRP2 Implementing Eco-Logical Problems

- Completing 8 % of ESA consultations on time
- Project scoping and budgets were resulting in project delivery issues
- Lack of trust and predictability in the process



SHRP2 Implementing Eco-Logical

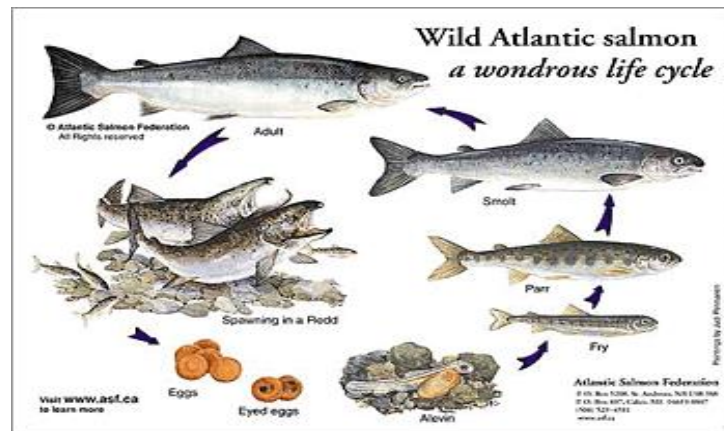
	Consistency Reviews processed under MAP	Individual Consultations	% Consistent with the MAP
2017	23	9	72
2018	36	3	92

	NLAA Review	LAA Review
Pre- MAP	~ 120 days	~ 240 days
Processing Goal	14 days	30 days
2017 Average Consistency Review	3 days	7 days
2018 Average Consistency Review	2.77 days	4.3 days



SHRP2 Eco-Logical - Solutions

- Develop programmatic consultation for project effects on Atlantic salmon and their critical habitat
- Develop In Lieu Fee Program for effects to Atlantic salmon and their critical habitat
- Develop support tool for MaineDOT planning - TrappD



The Maine Atlantic Salmon Programmatic Agreement

Programmatic Biological Assessment
for Transportation Projects for the
Gulf of Maine Distinct Population Segment of
Atlantic Salmon and Designated Critical Habitat
U.S. Fish and Wildlife Service Jurisdiction



June 2016

Submitted by:

Maine Department of Transportation
Federal Highway Administration
US Army Corps of Engineers



<http://maine.gov/mdot/maspc/>

The MAP

- Cover as many projects as possible
- Maximize predictability of process timing and avoidance and minimization measures incorporated into projects



The MAP

Activity	Before MAP
Document length	50-100 pages
Biologist preparation	40-80 hours
USFWS Review	26 weeks average
Consultations completed 'on time'	8%



The MAP – 5 years of projects

Activity	Before MAP
Document length	50-100 pages
Biologist preparation	40-80 hours
USFWS Review	26 weeks average
Consultations completed 'on time'	8%

Project Activity	Number
Stream Crossing Replacements:	--
Culverts (Spans ≤20 feet)	50
Bridges (Spans > 20 feet)	45
Bridge and Culvert Removal	3
Scour Countermeasures	15
Culvert End Resets and Extensions	50
Bridge Maintenance	16
Temporary Work Access and Temporary Bridges	15*
Invert Line and Slipline Culvert Rehabilitation	15
Pre-project Geotechnical Drilling	15*
ESTIMATED TOTAL	194*

The MAP

- Developed the Biological Assessment
 - Re written 3 times over ~2 years
 - MaineDOT Staff, FHWA staff (division and resource center) and consultant help.
 - FHWA also assisted with a mediation session
- Developed the Biological opinion (BO)
 - USFWS understaffed- FHWA staff lead with MaineDOT staff assistance in drafting the BO for the USFWS over ~ 6 months

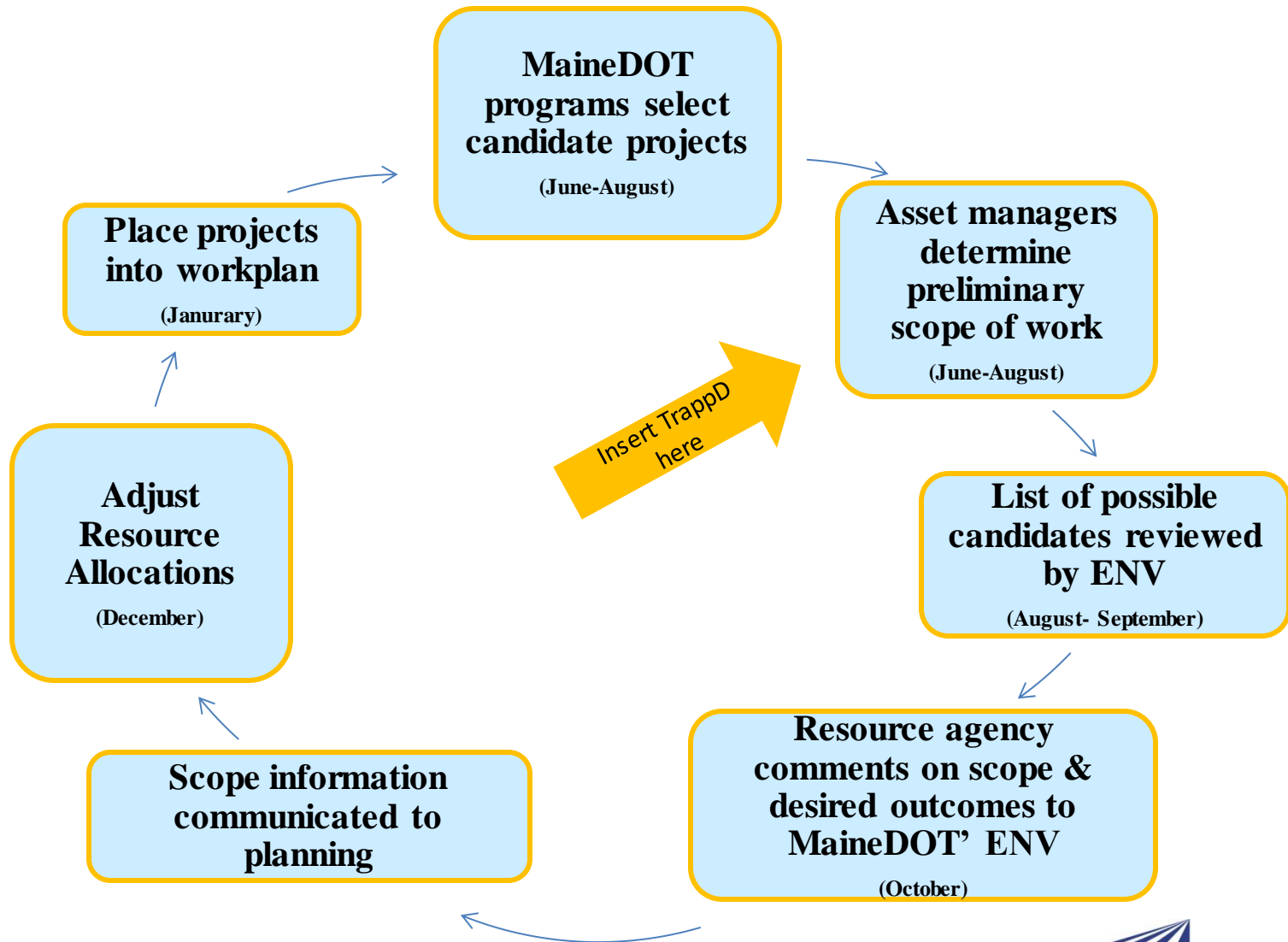
Exceeding Expectations

- USFWS Recovery Champions
- FHWA Administrator's Awards
- Inclusion into the ESA recovery plan for ATS
- Statistics speak for themselves
- Adapting as needed to be flexible in project inclusion
- Model for a similar process for other agencies

Decision Support Tool - TrappD

- Transportation Risk Assessment for Project Planning and Delivery
- Automate use of existing resource information to develop project scopes and schedules
- Begin to develop tools that incorporate elements of climate change (sea level rise and increased storm frequency/intensity)

Applying TrappD



TrappD- Moving Forward

- The concept of integration of information into decision making at the scoping level has been successful.
- TrappD will be mostly available this year
 - Some elements have been available to folks creating the workplan.
- Bidding environment make it challenging to tease out effect on project delivery

In Lieu Fee

- Concept derived while developing the MAP
- MaineDOT contracted with the Conservation Fund to develop the Atlantic Salmon Restoration and Conservation Program (ASRCP)



ASRCP- Future Tweaks

- The program became active in September of 2019.
- To date, there have been no contributions to the program
- Fee structure make its use not economical





Lunch – Set Up Outside Room

12:45 – 2:00 pm





Breakouts – Small Group Discussions

- Small Group Discussions
- Report Out



Breakouts – Small Group Discussions

Small Group Discussion Directions

- Participants should break into 4 groups
- Each group will have a dedicated table facilitator
- Table facilitators:
 - Mara Campbell
 - Brooke Jordan
 - Jenn Smoker
 - Luisa Paiewonsky
 - Alex Oster
- Each group will assign a recorder and reporter
 - Each recorder will document comments on a flip chart
 - Each reporter will summarize the discussion for the group during the report out

Breakouts – Small Group Discussions

Small Group Discussion #1

- For potential future research efforts, we want to document what worked well and what could be improved.
 - Was the SHRP2 research program successful? If yes, why? If not, why not?
 - If you were going to document the key takeaways from the SHRP2 research program what would they be?
 - If we could launch this research program over again, what would you do differently?

Report Out

Report Out Directions

- Each reporter will summarize key findings from their small group discussion for the group



Break

2:40 – 3:00 pm



Breakouts – Small Group Discussions

Small Group Discussion #2

For potential future implementation efforts we want to document what worked well and what could be improved.

- Was the implementation of the SHRP2 research program successful? If yes, why? If not, why not?
- If you were going to document the key takeaways from the SHRP2 implementation efforts what would they be?
- From an implementation perspective, is there a need for any of these products to have greater national penetration? If so, which ones? How would you support that?
- Was the SHRP2 program easy to implement within your state? Was it well integrated into DOT/MPO decision making processes? Is it part of the way you do business?
- If we could launch this program over again, what would you do differently in terms of implementation?

Report Out

Report Out Directions

- Each reporter will summarize key findings from their small group discussion for the group



Wrap Up

Matt Hardy, AASHTO



Wrap Up

- Thank you for engaging discussions reflecting on the SHRP2 capacity solutions products!





Capacity Solutions Retrospective Workshop

Park City, Utah

May 20 – 21, 2019



U.S. Department of Transportation
Federal Highway Administration

AMERICAN ASSOCIATION
OF STATE HIGHWAY AND
TRANSPORTATION OFFICIALS

AASHIO

Workshop Agenda – May 21, 2019

Time	Topic
8:00 am	Review Day #1 Meeting Outcomes
8:15 am	Meeting Objectives & Purpose
8:30 am	Small Group Discussions
10:15 am	<i>BREAK</i>
10:45 am	Report Out
11:15 am	Overarching Connections
11:45 am	Morning Wrap Up
12:00 pm	<i>LUNCH</i>

Day #1 Meeting Outcomes

Research Themes

Implementation Themes

Day #2 Meeting Objectives

- To identify which capacity products that should be promoted for continued use
- Outline a strategy to support identified capacity products
 - Develop strategies
 - Identify supportive or sponsor organizations
 - Identify roles and responsibilities moving forward

Breakouts – Small Group Discussions

Small Group Discussion #1

Participants will break into 4 groups and rotate to 4 topic stations:

- Economic Modeling
- Freight Data and Models
- Travel Demand Forecasting
- Decision-Making Support Tools

Breakouts – Small Group Discussions

Small Group Discussion #1

Please consider the following questions at each station:

- What do we want to keep using?
- What else is needed (or is what we have good enough)?
- How do we accomplish this and ensure that the products are relevant?
- What are the recommended next steps?



Break

10:15 – 10:45 am



Report Out

Report Out Directions

- Each reporter condense and consolidate the main themes of the discussion and will report on each one:
 - Economic Modeling
 - Freight Data and Models
 - Travel Demand Forecasting
 - Decision-Making Support Tools

Overarching Connections

- The group will work through products to illustrate connections between tools through the larger context of the planning process



Wrap Up

Matt Hardy, AASHTO

Gloria Shephard, FHWA

Neil Pedersen, TRB



Wrap Up

- Thank you for engaging discussions reflecting on the SHRP2 capacity solutions products!
- Safe travels if you are leaving today and have a wonderful Memorial Day Weekend!

