



Enhancing Sustainability of Freight with INVEST

Talking Freight Webinar

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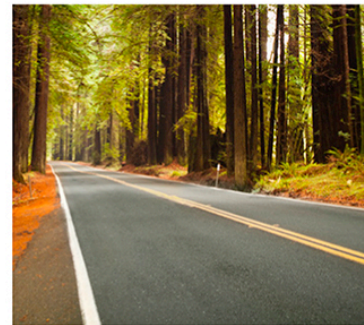
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What is Sustainability?



The Sustainability Triple Bottom Line



INVEST – FHWA’s Sustainability Tool



- Infrastructure Voluntary Evaluation Sustainability Tool (INVEST)
- Web-based self-assessment tool
- Specific to transportation
- Helps stakeholders go above and beyond
- Practical - connects sustainability principles with action
- Nationally vetted – pilot tested across the country, 3000+ comments
- Voluntary
- Free, easy to use
- Flexible

Supporting the Entire Life Cycle



System Planning (SP)

1. Integrated Planning: Economic Development and Land Use
2. Integrated Planning: Natural Environment
3. Integrated Planning: Social
4. Integrated Planning: Bonus
5. Access and Affordability
6. Safety Planning
7. Multimodal Transportation and Public Health
8. **Freight Access & Mobility**
9. Travel Demand Management
10. Air Quality & Emissions
11. Energy and Fuels
12. Financial Sustainability
13. Analysis Methods
14. Transportation Systems Management and Operations
15. Linking Asset Management and Planning
16. Infrastructure Resiliency
17. Linking Planning and NEPA

Project Development (PD)

1. Economic Analyses
2. Lifecycle Cost Analyses
3. Context Sensitive Project Devt.
4. Highway and Traffic Safety
5. Educational Outreach
6. Tracking Enviro. Commitments
7. Habitat Restoration
8. Stormwater Quality and Flow
9. Ecological Connectivity
10. Pedestrian Facilities
11. Bicycle Facilities
12. Transit and HOV Facilities
13. **Freight Mobility**
14. ITS for System Operations
15. Historic, Arch., Cultural Pres.
16. Scenic, Natural, Rec. Qualities
17. Energy Efficiency
18. Site Vegetation, Maint., Irrigation
19. Reduce, Reuse, & Repurpose Materials
20. Recycle Materials
21. Earthwork Balance
22. Long-Life Pavement
23. Reduced Energy & Emissions Pavement
24. Permeable Pavement
25. Construction Environmental Training
26. Construction Equipment Emissions
27. Construction Noise Mitigation

28. Construction Quality Control Plan
29. Construction Waste Management
30. Low Impact Development
31. Infrastructure Resiliency Planning and Design
32. Light Pollution
33. Noise Abatement

Operations & Maintenance (OM)

1. Internal Sustainability Plan
2. Electrical Energy Efficiency
3. Vehicle Fuel Efficiency
4. Reduce, Reuse, Recycle
5. Safety Management
6. Environmental Commitments Tracking System
7. Pavement Mgt System
8. Bridge Mgt System
9. Maintenance Mgt System
10. Infrastructure Preservation
11. Traffic Control Maintenance
12. Road Weather Management
13. **Transportation Mgt & Ops.**
14. Work Zone Traffic Control

Scoring in INVEST



System Planning for States Criteria by Sustainability Principle	
Criterion Number and Title	
SPS-01: Integrated Planning: Economic Development and Land Use	
SPS-02: Integrated Planning: Natural Environment	
SPS-03: Integrated Planning: Social	
SPS-04: Integrated Planning: Bonus	
SPS-05: Access and Affordability	
SPS-06: Safety Planning	
SPS-07: Multimodal Transportation and Public Health	
SPS-08: Freight and Goods Access & Mobility	
SPS-09: Travel Demand Management	
SPS-10: Air Quality & Emissions	
SPS-11: Energy and Fuels	
SPS-12: Financial Sustainability	
SPS-13: Analysis Methods	
SPS-14: Transportation Systems Management and Operations	
SPS-15: Linking Asset Management and Planning	
SPS-16: Infrastructure Resiliency	
SPS-17: Linking Planning and NEPA	

How INVEST Measures Sustainability



Admin My Workspace Logged in as FHWA Demos

Logout
Version 1.2
search

About Learn **Criteria** Score Resources

Workspace > Test

System Planning for States (SPS) Scorecard

Version 1.2

Program or Process: Test [edit](#)

[View full scorecard](#) to save or print from your browser.

[Output CSV](#)

Criteria	Points
SPS-01 Integrated Planning: Economic Development and Land Use (for States) Integrate statewide and metropolitan Long Range Transportation Plans (L RTP) with statewide, regional, and/or local land use plans and economic development forecasts and goals. Proactively encourage and facilitate sustainability through the coordination of transportation, land use, and economic development planning.	15/15
SPS-02 Integrated Planning: Natural Environment (for States) Integrate ecological considerations into the transportation planning process, including the development of long range transportation plans (L RTP), corridor plans, and the STIP. Proactively support and enhance long-term ecological function through the coordination of transportation and natural resource planning.	15/15
SPS-03 Integrated Planning: Social (for States) The agency's Long Range Transportation Plan (L RTP) is consistent with and supportive of the community's vision and goals. When considered in an integrated fashion, these plans, goals and visions support sustainability principles. The agency applies context-sensitive principles to the planning process to achieve solutions that balance multiple objectives to meet stakeholder needs.	15/15

Score ▾

79

Your Rating: Bronze

96 points needed for Silver
120 points needed for Gold
144 points needed for Platinum

[Scoring Tutorial](#)

Snapshots

You may elect to periodically store full static copy of your scorecard here.

[Save Snapshot](#)



Evaluate – Score – Improve



- Evaluate – Using the collaborative process can provide the most important outcome
- Score – Provides recognition for implementing sustainability best practices and identifying gaps
- Improve – Using the process to improve in practice and identify cost effective measures



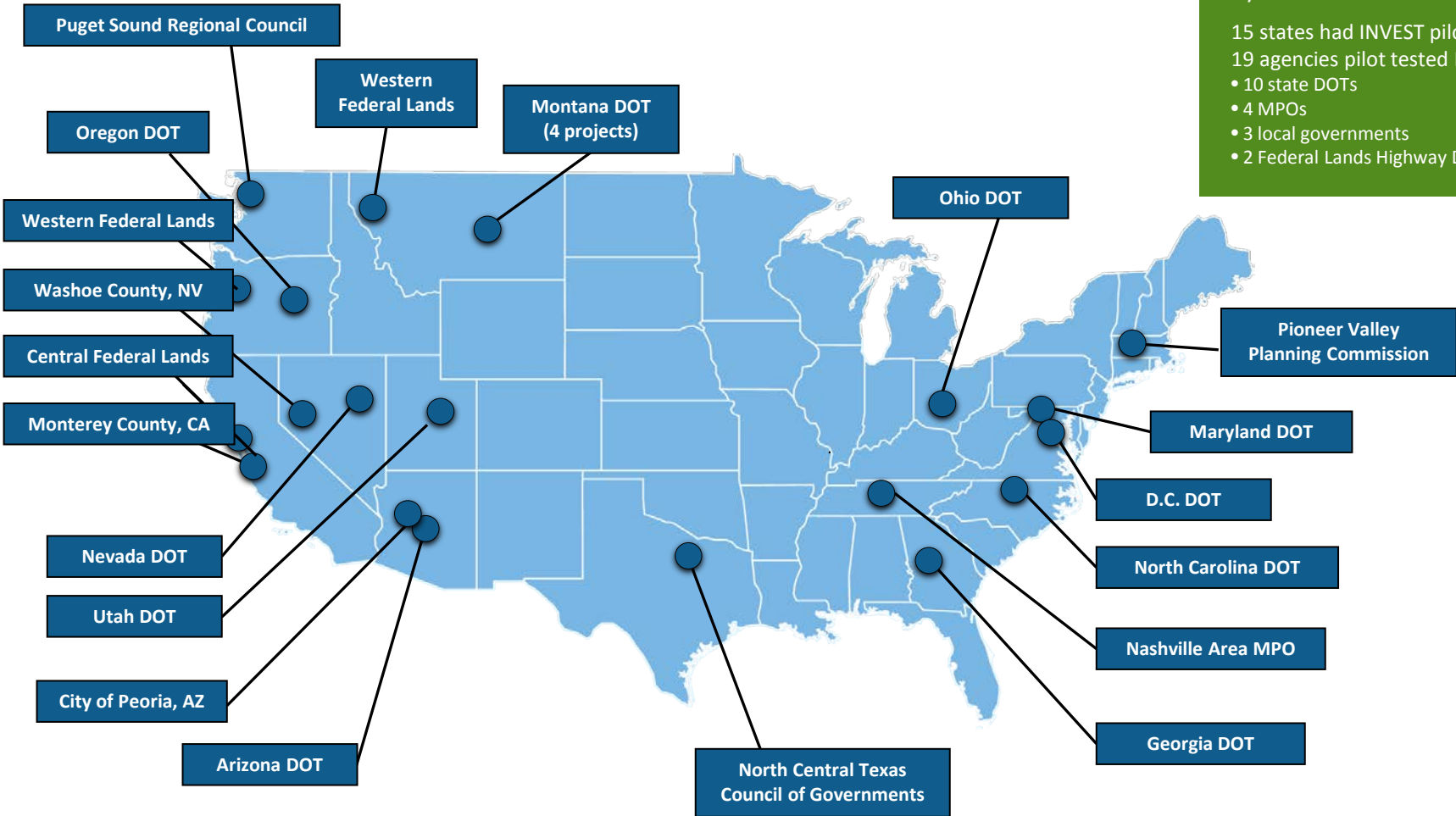
INVEST Pilot Sites



By the Numbers

15 states had INVEST pilot projects
19 agencies pilot tested INVEST:

- 10 state DOTs
- 4 MPOs
- 3 local governments
- 2 Federal Lands Highway Divisions



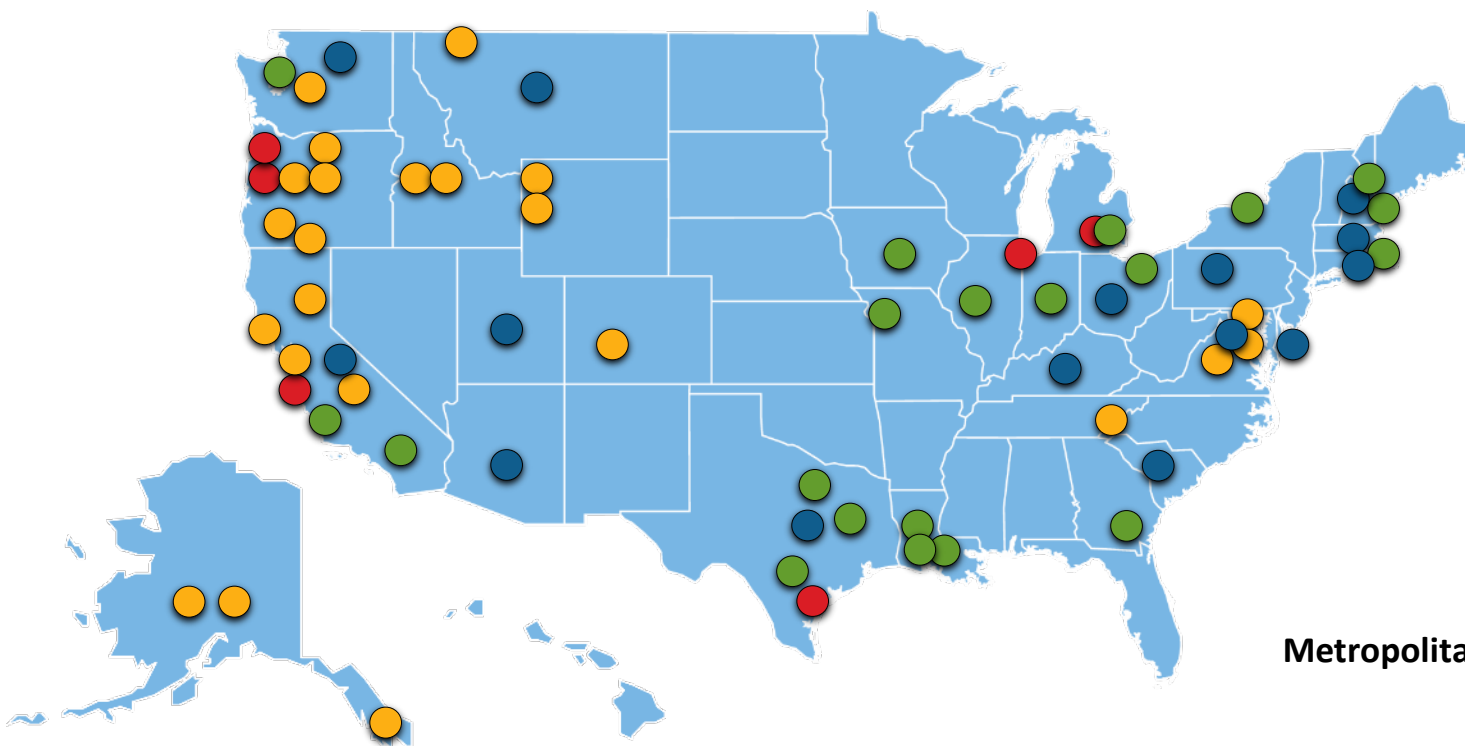
INVEST Usage



INVEST Usage By the Numbers

Entities that have informed
FHWA they are using INVEST:

- 15 State DOTs
- 20 MPOs
- 23 Federal Lands Units
- 6 other transport agencies
in US (local, transit, tollway)
- 1 foreign government



- State DOT
- Metropolitan Planning Org. (MPO)
- Federal Lands Unit
- Other

A sampling of possibilities ...



If you are . . .	You might . . .
State department of transportation	<ul style="list-style-type: none">• Maximize sustainability of operations and maintenance practices• Incorporate into contracting to provide incentives to contractors for sustainability
Metropolitan Planning Organization	Score your current long range transportation plan (LRTP), use that info to improve your next LRTP
Local government	Update your guidelines for local roads projects to incorporate sustainability considerations
Federal Land Management Agency	Use the Scenic and Recreational Roads Scorecard to identify sustainability improvements for a road project in an ecologically sensitive area
Contractor	Suggest INVEST to your client and use in projects & proposals
Academic	Use INVEST as a teaching tool
Tollway Authority	Identify practices that save money

Example: Southern California Assoc. of Govts (SCAG) System Planning (SP) Module



- Scored 2012 long range transportation plan (LRTP)
- Used results to guide development of 2016 LRTP
- Scored 176 points out of 250 - Platinum
- INVEST helped SCAG identify and highlight strengths
- Freight (SP-8): 2012 plan includes: rail safety and grade separations; mainline rail improvements and expansion; bottleneck relief strategy; environmental strategy (i.e. zero- and near-zero emission freight system); East-West Freight Corridor; On-, Near-, and Off dock rail improvements.



SP-8 Freight and Goods Movement 15/15 **Develop Goals and Objectives (2pts)**

- Plan includes provisions for multimodal freight mobility, reliability and connectivity in ways that enhance sustainability?

Engage Stakeholders (3pts)

- Agency regularly engages freight service providers, stakeholders, workers, and representatives in developing transportation planning documents? Uses institutional mechanisms?

Develop Performance Measures and Monitor Progress (4pts)

- (e.g. truck delay, travel time reliability)

Demonstrate Sustainable Outcomes (6pts)

- Agency improves intermodal freight connectors, linkages to freight generators, freight mobility?
- Agency monitors progress toward goals for at least one year and shows measurable advancement toward goals?

Example: Arizona DOT Project Development (PD) Module



- Scope:
 - › Evaluated 20 planned or under-construction roundabout projects
 - › Held training INVEST workshops with local governments
- Key Outcomes:
 - › Integration into ADOT decision-making of a comprehensive platform for assessing programs and practices using a holistic sustainability lens.
 - › Plans to improve management of waste streams from pavement preservation projects.
 - › Improved freight mobility.
 - › Integration of key ADOT partners into the transportation sustainability conversation.



Freight Considerations - State Route 89 and Perkinsville Road, Chino Valley, AZ

PD-13: Freight Mobility Score – 7/7

- 2 Points – Safety improvements specific to freight
- 2 Points – Design and construction adjustments specific to freight
- 3 Points – Construct dedicated truck delivery ingress and egress

Overall, the project scored 41 points in INVEST, giving it a Silver rating.

Example: Utah DOT Operations and Maintenance (OM) Module

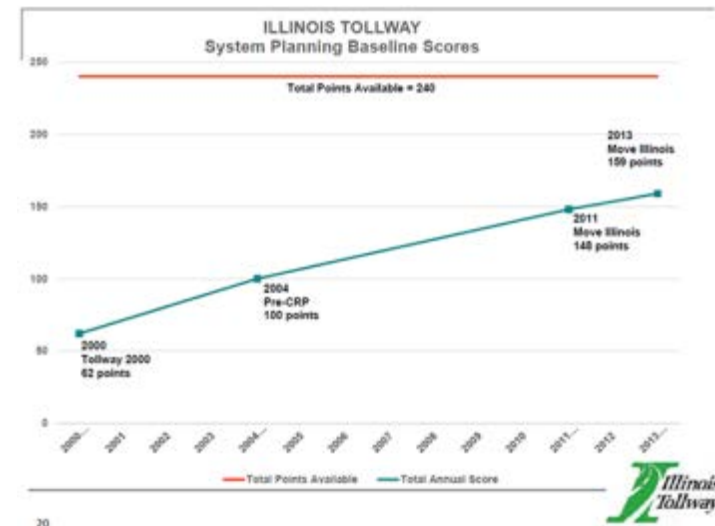


- Scored OM program with INVEST
- Developed prioritized set of recommendations
- Implemented recommendations and tracked progress
- **OM-13 Transportation Management and Operations.** Signal timing improvements (traffic adaptive signal system, dynamic dilemma zone detection) reduced congestion and crashes. \$3M cost, \$5M savings.
- **OM-7 Pavement Management System.** Automated data collection and incorporated LIDAR data. \$39 million annual savings, cost benefit ratio 3.5.



Example: Illinois Tollway All 3 Modules

- Mainstreamed INVEST into standard procedures. Developed agency-specific INVEST Manual with responsible parties, actions, timelines. Tollway scores, improves, and tracks progress at 30%, 60%, and 95% design; pre-construction; substantially complete.
- Scored 35 projects with PD to provide baseline. Then scored and improved in-progress projects that are part of \$12 billion capital program.
- Used SP & OM modules to score 4 most recent funding programs. Found upward trend. Identified SP-11, SP-17, OM-1, OM-6, & OM-8 for improvement.



Tips for Usage



1. Do not expect a high score
2. Emphasize sustainability improvements, not the score
3. Select a lead staff member
4. “Play” with the tool – browse criteria, create a test project, read case studies
5. Assemble a cross-discipline scoring team
6. Conduct workshop - score each criterion; develop recommendations for improvement
7. Analyze, prioritize, and implement recommendations from scoring workshop
8. Track progress, document and share successes

Time Required



- Easy to use, not time intensive, can do in-house, or hire contractor
- Time required varies, but plan on ...
 - › Point person browses tool – 8 hours
 - › Point person identifies and contacts staff subject matter experts (SMEs) for each criterion – 16 hours
 - › SMEs review criteria, gather documentation, develop initial scoring recommendation – 2-3 hours per SME. With 10 SMEs that would be 20-30 hours.
 - › Hold scoring workshop – 15 staff in full day workshop: $15 \times 8 = 120$ hours
 - › Point person writes up the recommendations – 8 hours
 - › Staff analyze pros and cons of recommendations; management decides to implement or not (varies)
 - › Implement recommendations (varies)
 - › Re-score (8 hours)
 - › Document and share successes (8 hours)
 - › Total: 190 staff hours, + time to analyze and implement recommendations

Resources Available



- Case Studies
- INVEST Toolkit
 - › Fact sheet
 - › Presentation Slides
 - › User Guide
 - › Examples
 - › Map
- Consultations
- Training
- Contacts with peers

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Case Study:
Using INVEST to Better Showcase Sustainability Activities through the Long Range Transportation Plan
Kittyry, MA

Lead Agency: Kittyry Area Comprehensive Transportation System (KACTS)
INVEST Module: System Planning
URL: <https://www.invest.org/resources/transportation/casestudy>

KACTS is the metropolitan planning organization (MPO) for the Maine portion of the Portsmouth and Dover-Rochester, New Hampshire urbanized areas. KACTS used the INVEST System Planning (SP) module to score their approved 2014 Long Range Transportation Plan (L RTP) and used the results to identify opportunities to better integrate and showcase sustainability principles in their 2014 L RTP. After creating the 2014 L RTP, KACTS then used the SP module to evaluate the draft plan and compare the results with the 2010 L RTP.

2010 KACTS Long Range Transportation Plan
To score the 2010 KACTS, a committee was formed with representation from local municipalities, advocacy groups, Maine Department of Transportation, and the Federal Highway Administration. The committee held an all-day scoring workshop to discuss the criteria in greater detail and reach consensus on the number of points to assign to each criterion. The committee solely evaluated the content of the plan and did not award points for existing activities or programs that were not specifically mentioned. This approach to scoring led to the 2010 L RTP receiving a total score of 27 out of 250 possible points. The scoring results highlighted numerous areas for improvement for future L RTP updates including the need for KACTS to better and more accurately reflect all of the programming that it completes every year.

2014 KACTS Long Range Transportation Plan
KACTS utilized the results of the 2010 L RTP scoring process to guide and influence the development of the 2014 L RTP. KACTS recognized that the new plan should be more informative and useful for the public to more clearly illustrate their practices, partnerships, policies, and programs that relate to sustainability. As a result, there was a 60-point increase from the 2010 L RTP to the draft 2014 L RTP. This considerable increase in points was made due to a change in content from the 2010 to the 2014 L RTP. The table on the next page displays the scores from each year.

Cover page of KACTS Draft 2014 L RTP Long Range Transportation Plan (courtesy of KACTS)

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INVEST User Guide

In This Guide:

- Quick Start Guide
- Introduction
- Overview of Modules
 - System Planning
 - Project Development
 - Operation & Maintenance
- Useful Functions
- Usage Tips
- Criteria in Action



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INVEST

Self-assessment tool for transportation sustainability

Date



Try INVEST at:
www.sustainablehighways.org

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