NATIONAL Sciences ACADEMIES

Engineering Medicine

TRANSPORTATION RESEARCH BOARD

TRB Webinar: Integrating **Performance-Based Planning** with Long-Range Plans and **STIPs**

October 7, 2024 12:00 – 1:30 PM



PDH Certification Information

1.5 Professional Development Hours (PDH) – see follow-up email

You must attend the entire webinar.

Questions? Contact Andie Pitchford at TRBwebinar@nas.edu

The Transportation Research Board has met the standards and requirements of the Registered Continuing Education Program. Credit earned on completion of this program will be reported to RCEP at RCEP.net. A certificate of completion will be issued to each participant. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the RCEP.

ENGINEERING



AICP Credit Information

1.5 American Institute of Certified Planners Certification Maintenance Credits

You must attend the entire webinar

Log into the American Planning Association website to claim your credits

Contact AICP, not TRB, with questions

Purpose Statement

This webinar will highlight current practices for integrating federally required performancebased plans, such as Strategic Highway Safety Plans, Transportation Asset Management Plans, and freight plans with long-range transportation plans and state transportation improvement programs (STIP). Presenters will explain their agencies' performance-based planning practices and provide current practices that can be applied to other agencies.

Learning Objectives

At the end of this webinar, you will be able to:

(1) Establish agency procedures and planning schedules to better align content among long-range transportation plans, performance-based plans, and STIP

(2) Use data and narratives from performance-based plans to communicate system conditions and investment needs to decision makers and the public

Questions and Answers

- Please type your questions into your webinar control panel
- We will read your questions out loud, and answer as many as time allows

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Today's presenters



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TRANSPORTATION RESEARCH BOARD



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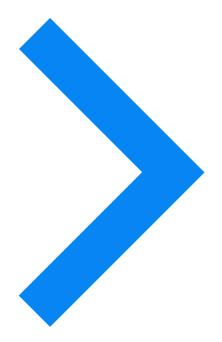
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TRANSPORTATION RESEARCH BOARD

Integrating Performance-Based Planning with Long-Range Plans and STIPs

Transportation Research Board October 7, 2024





Study Purpose

Document current state DOT practices related to integrating federally required performance-based plans into state LRTPs and STIPs.

In addition to focusing on the integration of these plans, the synthesis addresses broader issues related to development of performance-based plans and the overall maturity of practice among state DOTs in PBPP.

Performance Based Plans

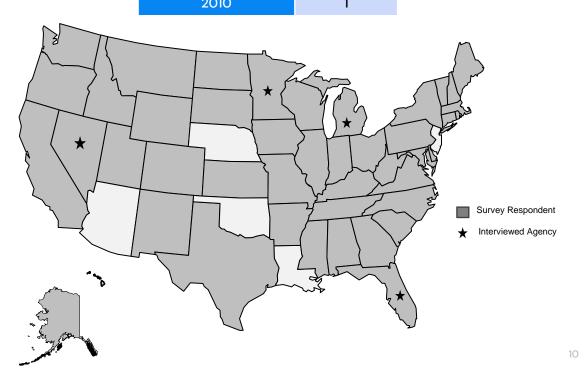


- Highway Safety Improvement Program (HSIP)
- Strategic Highway Safety Plan (SHSP)
- State Freight Plan
- Transportation Asset Management Plan (TAMP)
- Public Transportation Agency Safety Plan (PTASP).
- Transit Asset Management (TAM) Plan

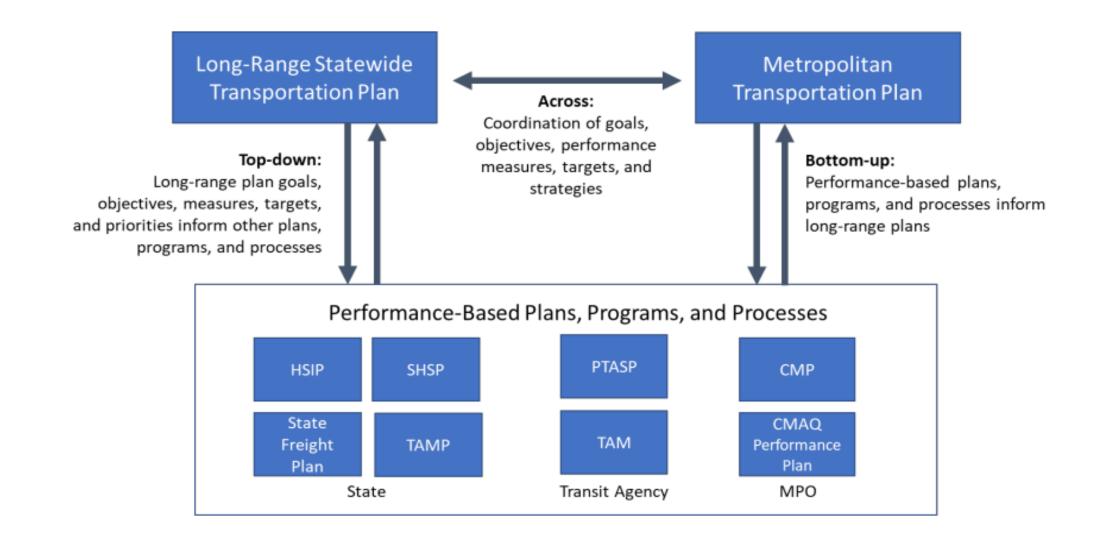
- Congestion Management Process
 (CMP)
- Congestion Mitigation and Air Quality Improvement (CMAQ) Performance Plan.
- Electric Vehicle Infrastructure Deployment Plan
- Carbon Reduction Strategy
- Resilience Improvement Plan
- State Human Capital Plan
- Complete Streets Prioritization Plan

| Methodology | Year LRTP Was Last Published | Number of Respondents |
|--|---------------------------------|--------------------------|
| | Update in progress | 7 |
| | 2022 | 5 |
| | 2021 | 11 |
| Literature review | 2020 | 8 |
| State DOT survey (90% response rate) | 2019 | 2 |
| | 2018 | 3 |
| Stakeholders | 2017 | 4 |
| LRTP characteristics | 2016 | 1 |
| Integration of PBPs with LRTPs | 2015 | 2 |
| Integration of PBPs with STIPs | 2014 | 2 |
| | 2010 | 1 |

- Non-Federally required Performance Measures
- Communication of Performance
- Barriers/Challenges to Integration
- Case examples
 - Michigan
 - Florida
 - Nevada
 - Minnesota



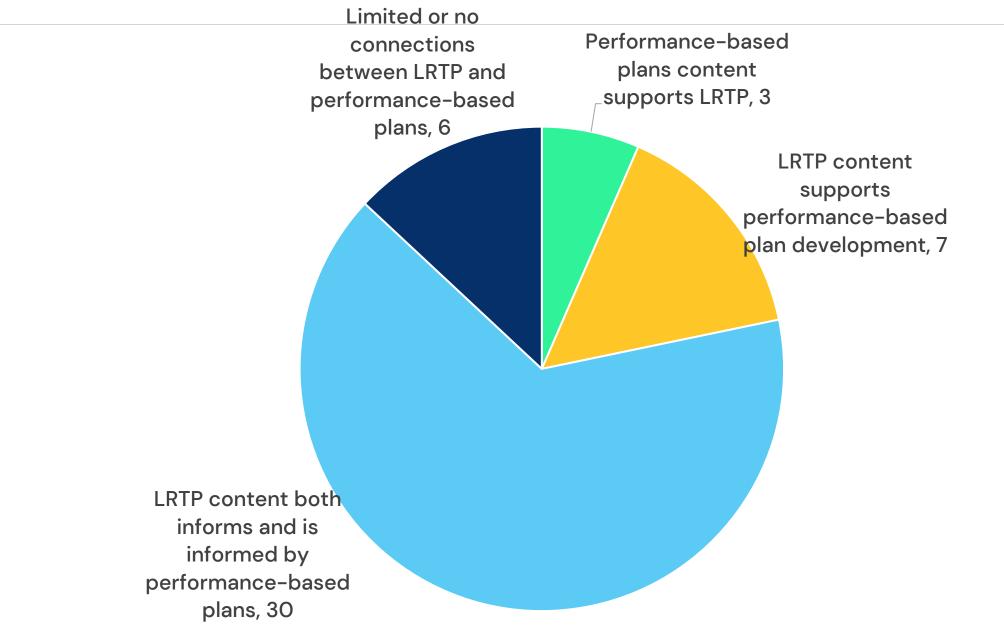
Integrating Performance-based Plans



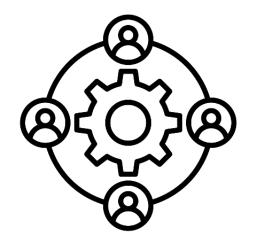
Note: Other plans should be integrated into the process as applicable.

Integrating Performance Based Plans into LRTPs

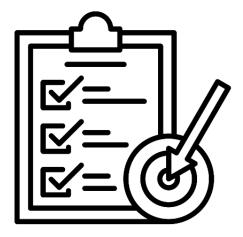
LRTP and Performance Based Plans Influence



Integration of Performance Based Plans with LRTPs

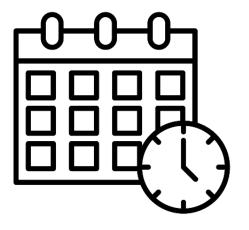


Internal and external collaboration



Influencing content:

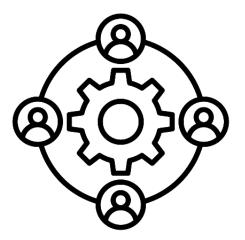
- Goals
- Objectives
- Performance Measures
- Targets



Coordinate timing of plan development

Internal and External Collaboration

- Many state DOTs have
 - reorganized their internal structures
 - created new departments
 - created working groups
- Internal coordination and externally with partners
- Nearly three-quarters of states (32 out of 44 reporting, or about 73%) reported having some form of ongoing committee or forum focused on performance measures, and in most cases the committee or forum includes both internal state DOT and external participants, such as MPOs.



How Coordination with MPOs Occurs

| | | | | Meetings/coordinat ion to discuss setting |
|------------|----|---|--|---|
| | | Meetings/coordination t Metropolitan Transporta with the State LRTP's goa objectives Meetings/coordination t investment priorities and prioritization procedures metropolitan TIP and STI processes | ition Plans als and o discuss project or d project s and align the | 41 performance targets and alignment of MPO |
| Other 3 | 10 | 20 | 30 | 40 50 |

Content Incorporated into the LRTP

| | Data on current conditions or performance | Goals or objectives | Performance measures and targets | Needs identified | Strategies or project priorities | Financial information from the plan |
|--|--|------------------------|--|---------------------|--|---|
| SHSP / HSIP / safety measures | 33 | 38 | 31 | 22 | 25 | 10 |
| TAMP / bridge and pavement condition measures | 32 | 36 | 29 | 23 | 24 | 13 |
| Travel time reliability and congestion measures | 26 | 32 | 27 | 19 | 20 | 8 |
| State freight plan / freight reliability | 26 | 36 | 25 | 22 | 24 | 9 |
| PTASP / transit safety measures | 14 | 23 | 13 | 11 | 15 | 4 |
| TAM / transit asset management measures | 22 | 26 | 18 | 12 | 20 | 8 |

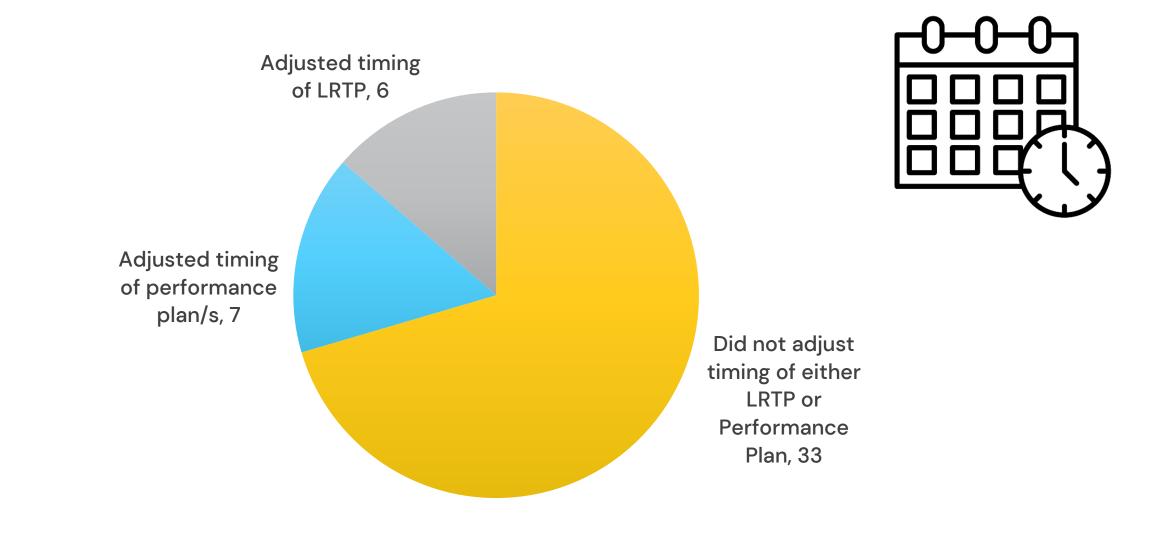


Relation of Near-term (1-year, 2-year, and 4-year) Performance Targets to Long-range Goals

| | Safety | Pavement Condition | Bridge Condition | Travel Time or Freight Reliability | Urbanized Area Congestion |
|---|--------|-----------------------|---------------------|--|---------------------------------|
| The DOT has explicit goals in the LRTP for these areas | 30 | 28 | 29 | 27 | 19 |
| The DOT has quantitative long-range (10+ year) performance goals or targets for these areas | 19 | 23 | 22 | 13 | 10 |
| Near-term targets are selected to align with long-range goals or targets (i.e., show progress in the desired direction) | 24 | 23 | 21 | 19 | 15 |



DOTs that Adjusted Timing of LRTP or Performance-based Plans to Improve Alignment



Integrating Performance Based Plans into STIPs

Performance Data Integration into the STIP



Performance information is considered but not with a structured scoring process

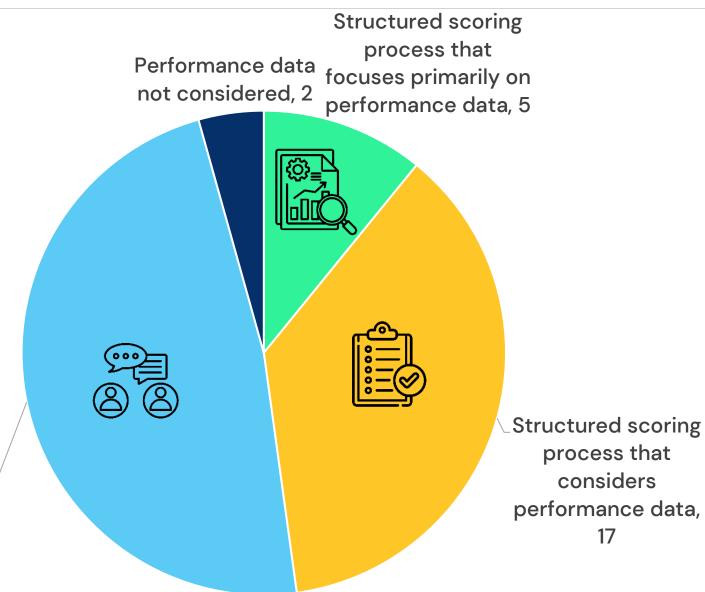


Structured project scoring process considers performance data among many factors



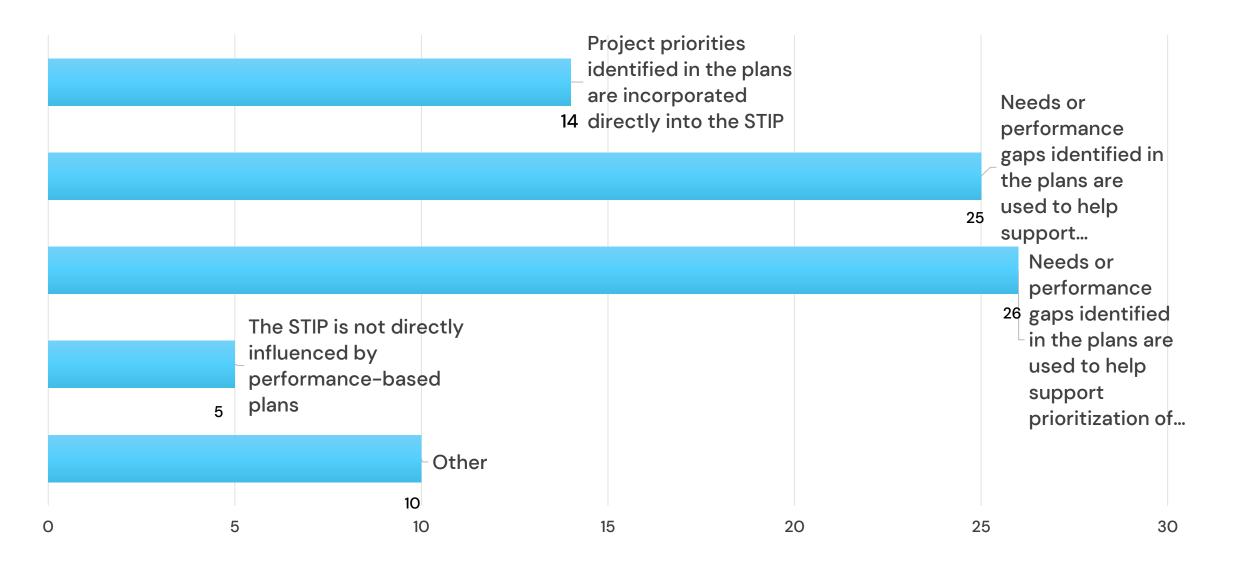
Structured scoring process focuses primarily on performance data

Performance Data Integration into the STIP



Performance information is considered (no structured scoring), _ 22

How the STIP is Influenced by Performance Based Plans



Communicating Performance

Communicating Performance

| | METHODS OF COMMUNICATING | SYSTEM PERFORMANCE | | |
|--|---|--|-----------|--|
| | | | | |
| | | | | |
| | Online performance dashboard (27) | The system performance report in the LRTP (21) | STIP (19) | |
| | | | | Periodic emails to stakeholders (6) |
| Performance-reporting within performance- based plans (36) | Annual/quarterly/monthly performance reports (23) | Stakeholder meetings or forums (17) | Other (7) | Press releases (3) |

Communicating Progress of the STIP toward Target Achievement



Individual projects in the STIP are qualitatively linked to goals or targets

Data is presented on the number of projects that support different performance goals or targets



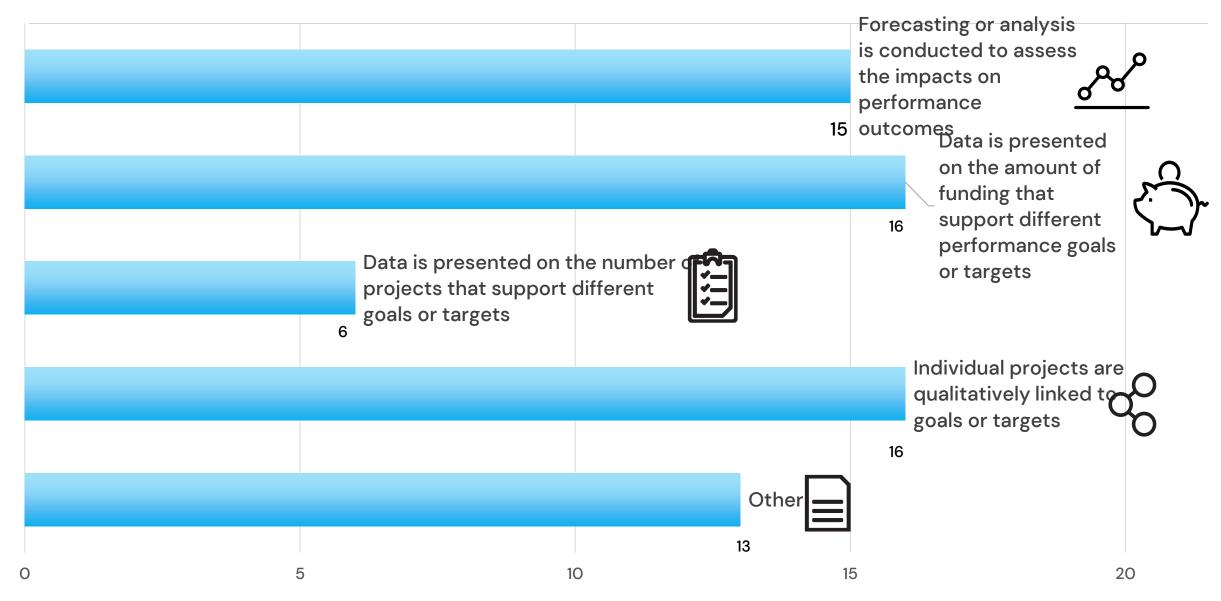
Data is presented on the amount of funding that supports different performance goals or targets



Forecasting or analysis is conducted to assess the impacts of projects on performance outcomes

Qualitative discussion of the anticipated effects of categories of projects or the STIP as a whole in supporting goals or targets

Communicating Progress of the STIP toward Target Achievement



Non-Federal Performance Measures

Non-Federal Performance Measures

| | Incorporate as a Goal Area | Use Quantitative Performance Measure | Set a Target |
|--|-------------------------------|--|--------------|
| Accessibility to destinations | 29 | 3 | 1 |
| Traffic congestion (i.e., non-required measures such as total hours of delay) | 22 | 9 | 5 |
| Multimodal choices or options | 30 | 3 | 1 |
| Transit ridership or transit service availability | 25 | 6 | 2 |
| Active transportation (e.g., bicycle level of comfort, sidewalk availability) | 29 | 8 | 3 |
| Vehicle miles traveled (VMT) or VMT per capita | 15 | 8 | 3 |
| Infrastructure condition (i.e., non-required measures such as culvert or ITS conditions) | 28 | 6 | 6 |
| Climate resilience | 28 | 2 | 0 |
| Economic development or economic vitality | 33 | 2 | 0 |
| Sustainability or environmental quality (e.g., energy use, water conservation) | 27 | 3 | 1 |
| Other | 10 | 4 | 3 |

Non-Federal Performance Measures (Other)

- Reliability on bus and commuter rail system
- Number of intermodal or multimodal projects completed
- Access to national and international markets
- Hours of delay on roadways within 5 miles of ports and cargo airports
- Reduction in truck-involved crashes; Reduction in truck-involved fatal crashes
- System redundancy
- Transportation equity
- Greenhouse gas emissions

Barriers and Challenges to Integration

Barriers and Challenges to Integration

| CHALLENGES INTEGRATING PERFORMANCE-BASED PLANS INTO THE LRTP/STIP | | | | | |
|---|---|--|-------------|---|--|
| Balancing among priorities across goals or across performance based plans (31) | | Internal coordination or communication challenges (19) | | Limited data or tools to assess performance needs (12) | |
| or across performance based plans (51) | support analysis (29) | | | | |
| | | | | Balancing | |
| | | External | | among | |
| | | coordination | | priorities for | |
| | | or | Other (9) | MPO and rural areas (9) | |
| Delevering het ween echievelde evel | Limited data or tools to assess | communic | Other (3) | rurar areas (3) | |
| Balancing between achievable and aspirational targets (30) | anticipated performance impacts of projects/investments (24) | challenges (11) | Lack of rea | dy projects in | |

Get in touch with us:

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Case Study: Michigan



- Strong coordination
- Michigan DOT's LRTP and TAMP are developed in parallel and inform each other on needs, goals, strategies, and projects.
- Michigan DOT staff from the Safety and Traffic Operations departments help ensure the alignment in goals and objectives between the LRTP and the SHSP, which is led by an inter-agency advisory group.



- Additional performance measures to help meet LRTP goals
- Examples:
 - Percentage of Michigan's rural population within 25 miles of an intercity passenger transportation bus route
 - Number of public electric vehicle charging stations
 - Number of freight bottlenecks delaying truck access to major airports, water ports, and intermodal container facilities
 - Number of passengers using state-supported passenger rail services
 - Number of signalized intersections integrated into the Michigan DOT Central Signal Control Software and connected vehicle-ready
 - Annual number of crashes on Michigan public roadways involving a commercial truck

Michigan DOT: STIP



- Investment strategies included in the STIP are based on:
 - anticipated available funding
 - life cycle planning
 - performance gap analysis
 - results of risk analysis
- STIP demonstrates how investments support Federal priorities

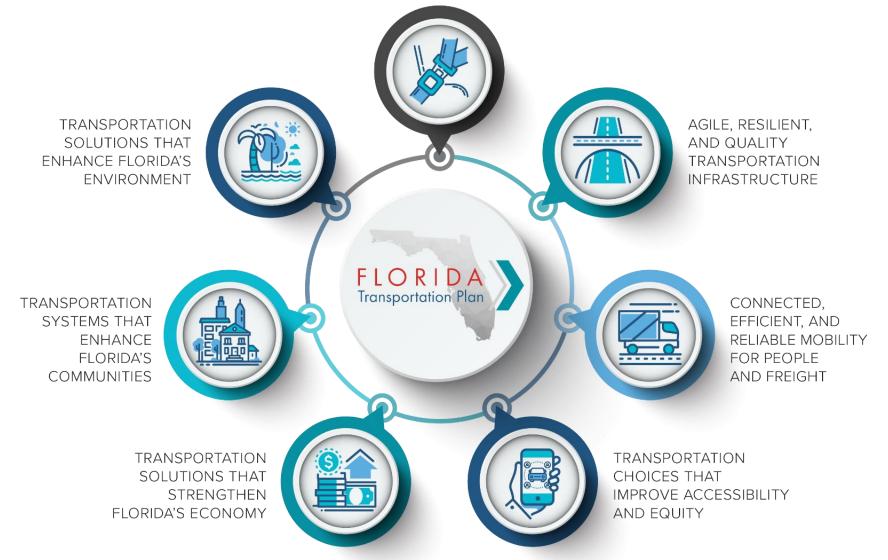
| | MDOT INVESTMENT CATEGORIES | | | LINKED TO FEDERAL PERFORMANCE MEASURES | | | | | | |
|--------------|--|---|--------|--|--------------------|--------------------------|---|-------------------------|--|--|
| | | | | PERFORMANCE AREA | | | | | | |
| | | FY 2018-2020 Annual Average (in millions) | Safety | Pavement Condition | Bridge Conditio | Reliability & Freight | Congestion Mitigation & Air Quality | Public Transportatio | | |
| | Road Rehabilitation & Reconstruction | \$469.7 | 0 | • | | • | | | | |
| | Capital Preventive Maintenance | \$175.4 | 0 | • | | | | | | |
| | Trunkline Modernization | \$337.8 | | | | | | | | |
| T INVESTMENT | Bridge Program | \$198.1 | 0 | | | | | | | |
| | Traffic & Safety | \$80.3 | | 0 | 0 | | • | • | | |
| | Routine Maintenance | \$332.5 | | | | | | 0 | | |
| | System Operations | \$43.8 | | | | | | 0 | | |
| | Transit - Rural Capital | \$4.8 | | 0 | | | • | | | |
| | Other Programs | \$79.5 | | | | | • | | | |

Case Study: Florida

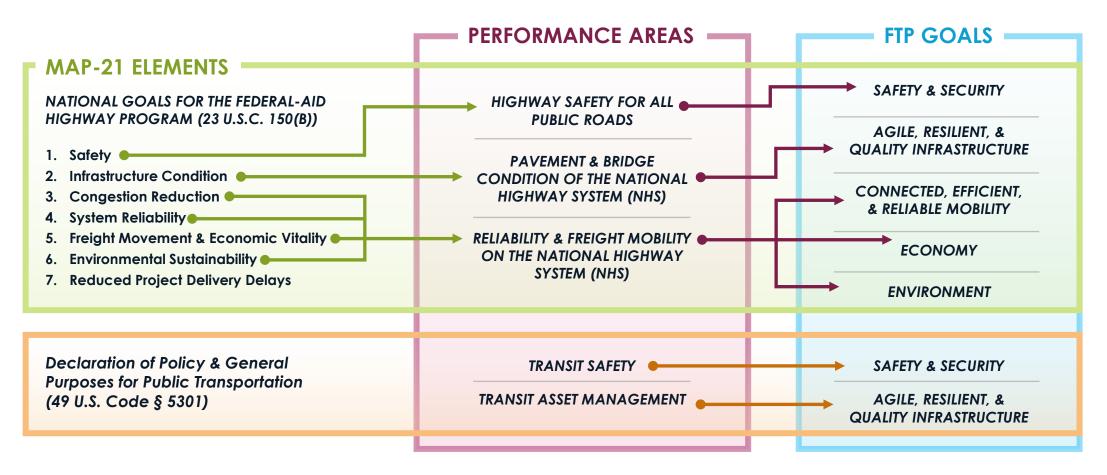
Integrating Performance-Based Planning with LRTPs & STIPs

Systems Forecasting & Trends Office

SAFETY AND SECURITY FOR RESIDENTS, VISITORS AND BUSINESSES



TPM Goals and Performance Areas



Strengthen Florida's economy.

a significant reduction in congestion on the he efficiency of the surface transportation system. e national freight network, strengthen ural communities to access national nal trade markets, and support regional

HIS MATTER?

dictable travel times impacts Florida's econo anations where arrest instruction reactions a substantial and a substantial and a substantial substantia substantial substantial substantial substanti people and treight. Florida seeks to reduce delays as, and crashes and other incidents, as well as to EASURING?

ta for autos, bus

ises, and trucks on major nce measures focus on the reliability of vehicles and for truck freight on the Int

ex (TTTP

sportation Plan

ERFORMANCE > HIGHWAY RELIABILITY & FREIGHT MOBILITY

Reliability is a measure of how travel times on a route differ from day Reliability is a measure of how travel times on a route differ from day to day. Higher reliability means trips usually will take about the same amount of time revision of the same amount of the same amount of time revision of the same amount Higher reliability means trips usually will take about the same amount of on any given day; lower reliability means the amount of time required to mustare a two will vary widely; based on factors such as two will vary widely. on any given day, lower reliability means the amount of time required to complete a trip will vary widely, based on factors such as bottlenecks, crasher out out out out and weather. The first two measures are expressed in person-miles, which consider The first two measures are expressed in person-mass, which considers the number of people traveling in autos, trucks, and buses on these roads and outses to these measures means better participants and the second number of people's annual in autor, trucks, and ouses on the higher percentage for these measures means better perform The final measure, truck travel time reliability, is expressed The final measure, succe views rate relationly, is expressed as an in-compares actual track travel times on the interstate system in Flor

FLORIDA Transportation Plan

PERFORMANCE ELEMENT

PERFORMANCE > HIGHWA WHAT ARE OUR TARGETS? FHWA requires states to set two-year and four-year

FHWA requires states to set two-year and four-year performance to Al 27 MPOs are supporting the statewide targets including the inti-Reliability Performance Trends

6 of person-miles on the non-inter

Truck travel time reliability index on the Inters Note: The trend column Note: the new counter induction and programs among target performance is moving away from the target. For the part

ARE WE MAKING PROGRESS?

FDOT collects and reports travel time data to FHWA each year to track

miles that are readine emproved since 2017 on both the interstate and n baseline to 2018 but declined slightly in 2019. The data all indicate period baseline to 2018 but declined slightly in 2019. The data all indicate performance exce Florida had made significant progress toward the two-year reliability and freight mot WHAT FACTORS INFLUENCE PERFORMANCE? A variety of factors influence travel time reliability on Florida's Interstate and nor

> Underlying growth in Florida's population, visitors, and economy. Growth in vehicle-miles traveled for people and treight. > Changes in fuel prices and other costs of highway travel. Changes in the use of other modes of transportation to move people and treight. National studies suggest that about one-half of all highway congestion is related in

FTP PERFORMANCE ELEMENT

YEST

The Performance Data Integration Space (PDIS) is the hub for information produced and curated by the Florida Department of Transportation's (FDOT) Systems Forecasting and Trends Office to assist department stakeholders with data-driven transportation decisions.

| Performance Data | Performance Reports | |
|--|---------------------------------|--|
| ß | | |
| Metropolitan Planning Organization (MPO) Performance Resources | Fast Facts & Emerging Trends | |







Other Dashboards



Demographic & Vehicle Data



Resources & Links

The Performance Data Integration Space (PDIS) is the hub for information produced and curated by the Florida Department of Transportation's (FDOT) Systems Forecasting and Trends Office to assist department stakeholders with data-driven transportation decisions.









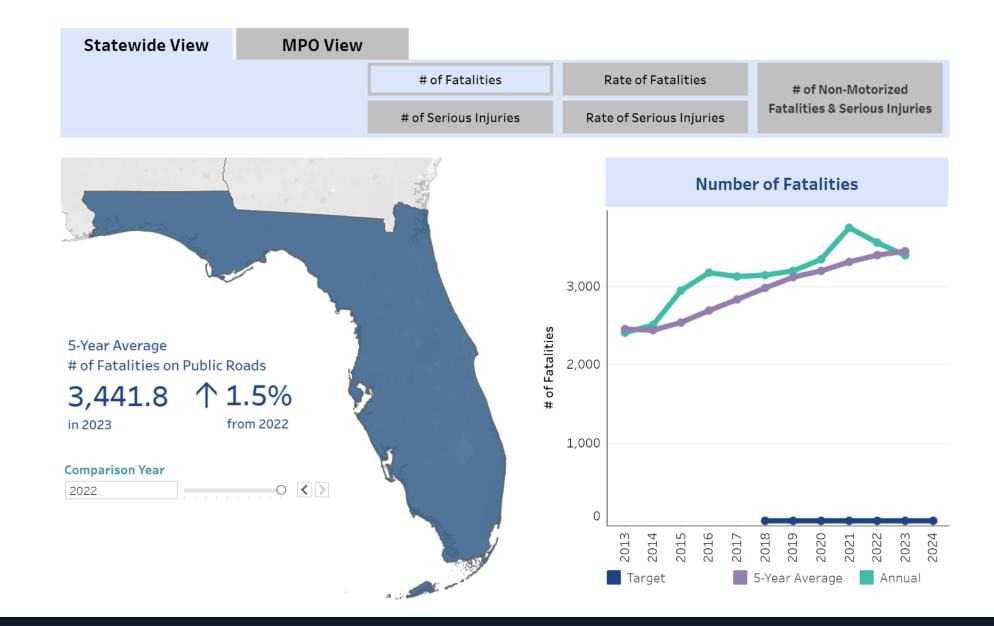
| structure Safety | Federal Performance Measures | s Resources |
|---------------------|---|-----------------------|
| Mobility Infrastruc | Federal Performant ture Safety Measures | ce |
| | | Federal Performanc |

| The FDOT | Source | Book |
|----------|--------|------|
|----------|--------|------|



The FDOT Source Book

| Home | Mobility | Infrastructure | Safety | Federal Performance Measures | Resources |
|------|----------|--|---|--|-----------|
| | | | | PM1 - Safety New PM2 - Pavement New | |
| | | | DV/4 Carfetta | PM2 - Bridge New | |
| | | 1 | PM1 - Safety | PM3 - System Performance New | |
| | | Up | odated Using 2023 Data | | |
| | | | | | |
| | | | ires rules (PM1) issued by the Federal | | |
| | | (FHWA) establishes five measures | to assess the safety condition of Flori | aa's public roadways: | |
| | | Number of Fatalities: The tota crash during a calendar year. | Il number of persons suffering fatal inj | juries in a motor vehicle | |
| | | - | umber of fatalities per 100 million vehi | icle miles traveled (VMT) | |
| | | in a calendar year. | | | |
| | | | ne total number of persons suffering a | it least one serious injury | |
| | | in a motor vehicle crash during 4. Rate of Serious Injuries: The to | g a calendar year. otal number of serious injuries per 100 |) million VMT in a | |
| | | calendar year. | 3 1 | | |
| | | 5. Number of Non-motorized Fat | talities and Non-motorized Serious Inj | juries: The combined | |
| | | | d fatalities and non-motorized serious | s. injuries involving a | |
| | | motor vehicle during a calend | ar year. | | |
| | | The Florida Department of Transpo | ortation (FDOT) and Florida's traffic sa | ifety partners are | |
| | | | and serious injuries, with the understo | | |
| | | | cceptable. Therefore, FDOT has establ | and the state of t | |
| | | | federal safety performance measures | | |
| | | targets for the safety measures. | nnual safety targets. Some MPOs hav | | |
| | | | | | |
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| | | Methodology 🖸 | Definitions 🖄 🛛 Download De | ata 🕹 | |



The FDOT Source Book

| Home | Mobility | Infrastructure | Safety | (F | Federal Performance Measures | Resources |
|------|----------|----------------|----------------------|----|------------------------------|-----------|
| | | | | Р | PM1 - Safety New | |
| | | | | P | PM2 - Pavement New | |
| | | | | P | PM2 - Bridge New | |
| | | P | M2 - Bridge | P | PM3 - System Performance New | |
| | | Updo | ited Using 2023 Data | | | |

The second of the performance measures rules (PM2) issued by the Federal Highway Administration (FHWA) establishes two measures to assess the condition of bridges on the National Highway System (NHS):

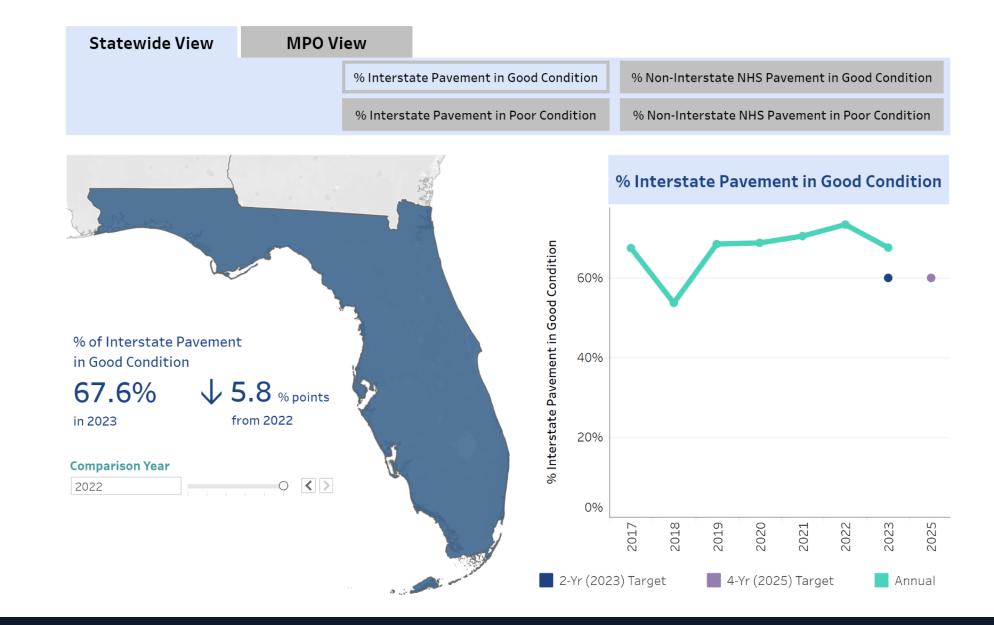
- 1. Percentage of NHS bridges by deck area in Good condition
- 2. Percentage of NHS bridges by deck area in Poor condition

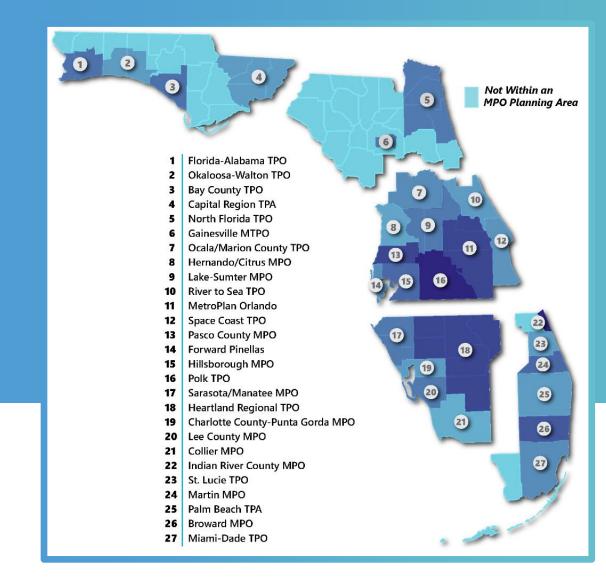
Good condition suggests that no major investment is needed, while Poor condition suggests that major investment is needed to improve the pavement condition.

FDOT established statewide two and four-year targets in coordination with the state's MPOs, to the extent practicable, for each FHWA bridge performance measure. All 27 MPOs support the statewide targets including the intent to plan and program projects that are anticipated to support progress toward achieving the targets.



For information on state bridge measures, please click here.







PERFORMANCE REPORT



FLORIDA TRANSPORTATION PLAN

STRATEGIC HIGHWAY SAFETY PLAN

Highway Safety Improvement Plan

Highway Safety Plan

FDOT MODAL PLANS AND PROGRAMS

Strategic Intermodal System Policy Plan Florida Mobility and Trade Plan Aviation System Plan Spaceport System Plan Rail System Plan Seaport and Waterway System Plan Transit Programs Bicycle & Pedestrian Programs

MPO LONG RANGE TRANSPORTATION PLANS

Systems Forecasting & Trends Office

FTP Alignment with other Plans

FMTP24 Objective FTP Goal Safety and security for 1. Leverage data and technology to improve freight system safety and residents, visitors, and security businesses 2. Create a more resilient multimodal freight system to prepare for, respond to, and recover from disruption Agile, resilient, and quality transportation infrastructure 3. Ensure the Florida Freight system is in a state of good repair Connected, efficient, and 4. Reduce congestion, improve reliability, and prepare for shifts in reliable mobility for people cargo flows with proactive and innovative planning and freight 5. Remove institutional, policy, and funding bottlenecks to improve Transportation choices that operational efficiencies in supply chains improve accessibility and equity 6. Improve first and last mile connectivity for all freight modes 7. Continue to forge/strengthen partnerships with public and private **Transportation solutions that** sectors to improve trade, logistics, and workforce development strengthen Florida's 8. Capitalize on emerging freight trends to benefit Florida's economy communities while maintaining a strategic global posture Transportation systems that 9. Increase freight-related regional and local transportation enhance Florida's and land use coordination communities Transportation solutions that 10. Reduce freight impacts on Florida's env il rida's local air pollution and wildlife

Table 3 | FMTP24 Goals and Objectives

Performance Data Integration Space

Dana Reiding, Manager Systems Forecasting and Trends Office dana.reiding@dot.state.fl.us



Today's presenters



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NATIONAL ACADEMIES Sciences Engineering Medicine

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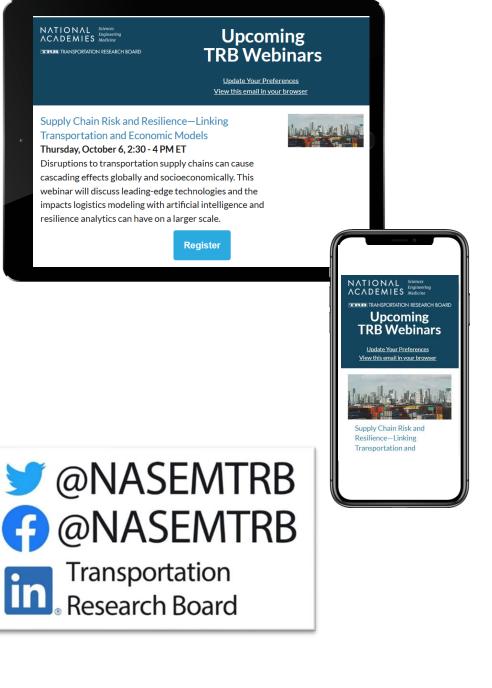


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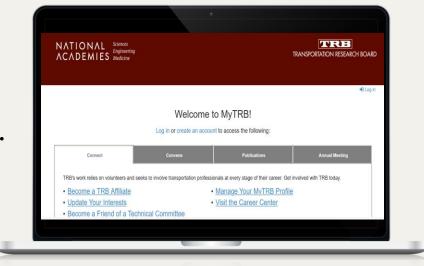
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