

2050 Multimodal Long-Range Transportation Plan



Round 3 Stakeholder Meetings
April 20 – 21, 2021

Agenda

- 2050 LRTP Schedule & Status
- Needs Assessment Findings
- Revenue Forecast/Alternative Findings
- Gap Assessment
- Portfolios and Strategies
- Next Steps



2050 LRTP Accomplishments

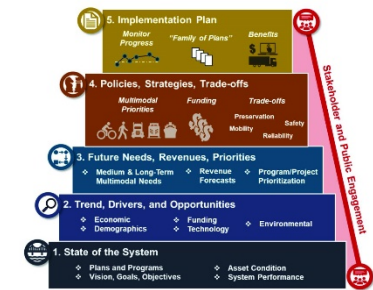
Work Completed Since February

- ✓ **Outreach –**
 - ✓ Social Media Posts
 - ✓ FHWA & MPO briefings
- ✓ **Needs Assessment***
- ✓ **Finance Plan***
- ✓ **Gap Assessment**

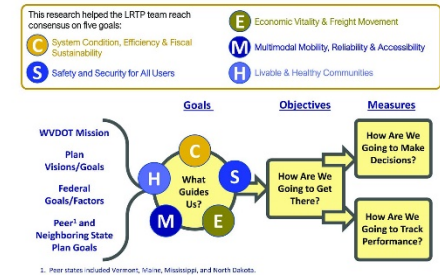
* Posted to 2050 LRTP website



How are we updating the WVLRTP?

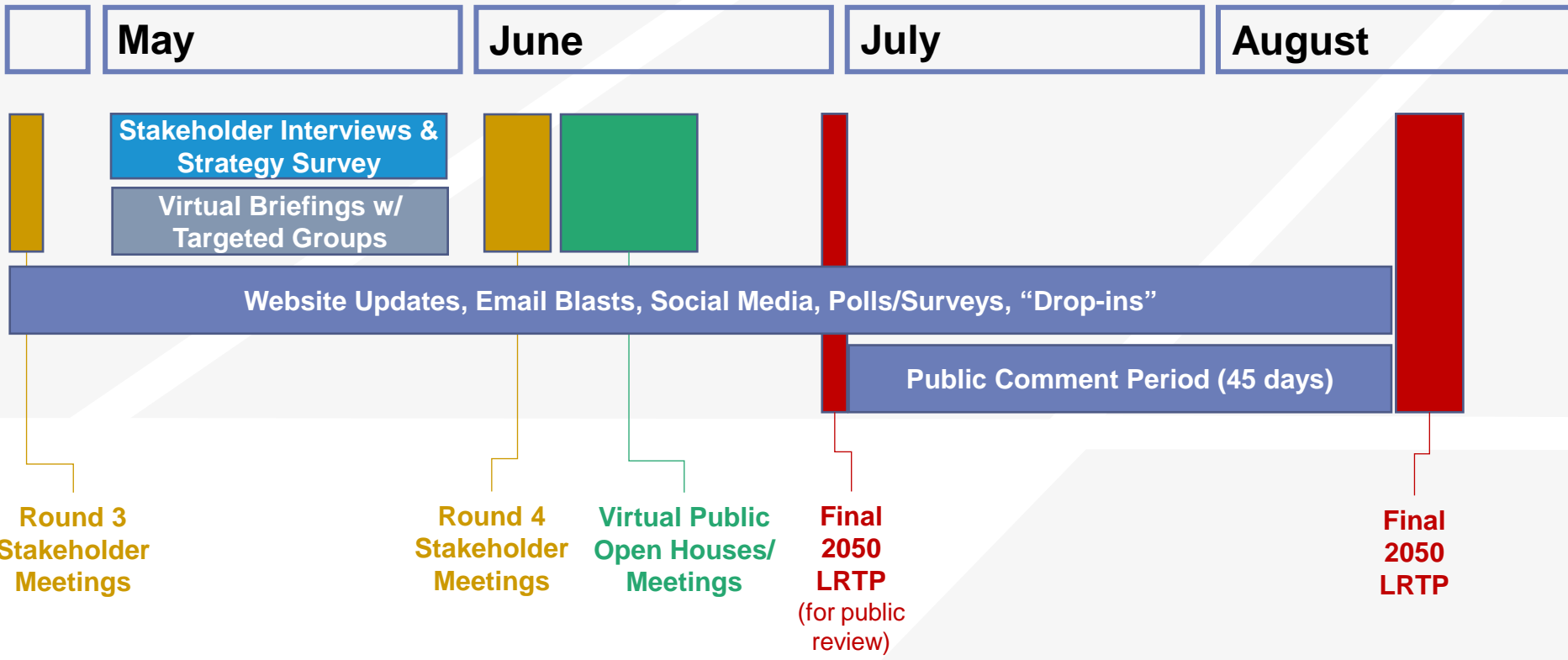


The WVLRTP aims to achieve the following goals and objectives:



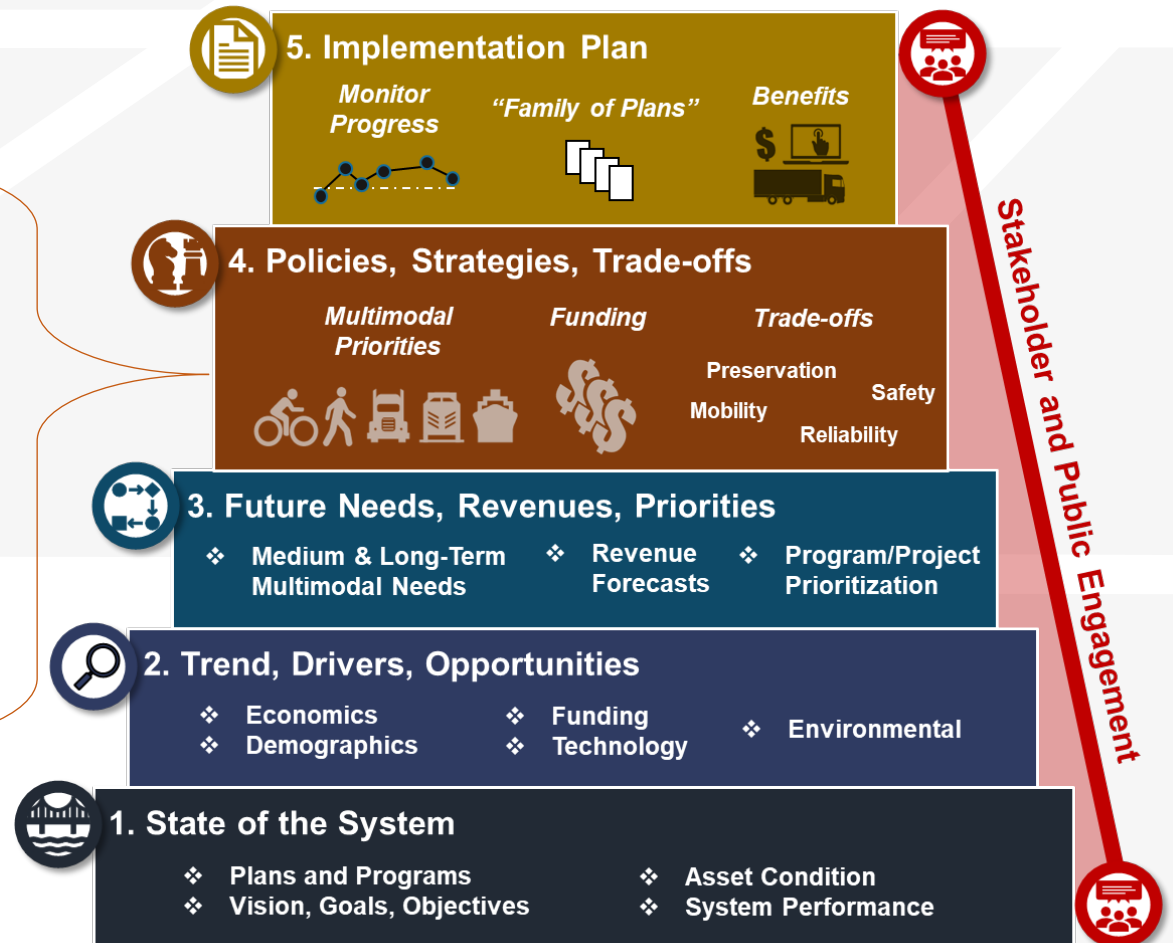
2050 LRTP Outreach

April – August

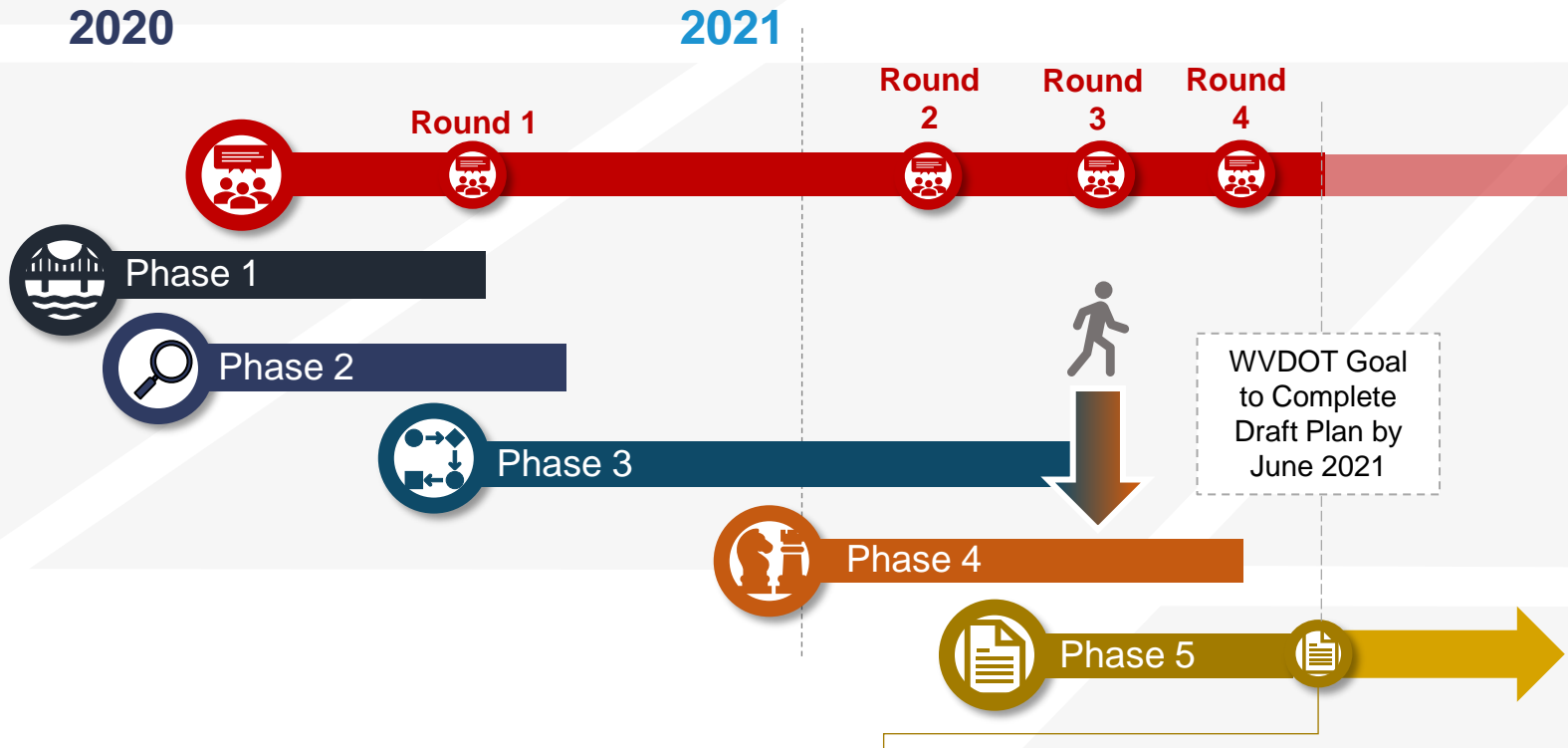


2050 LRTP Phase 4

1. Gap Assessment
2. Draft and Final Portfolios
3. Portfolio Assessment (trade-off tool, alignment with plan goals, stakeholder input, benefits)
4. Priority Portfolio (strategy/program prioritization and stakeholder input)
5. Portfolio Summary and Funding Implications



2050 LRTP Plan Schedule



2050 LRTP

Addresses Federal requirements and documents the LRTP process, recommendations, and prioritized strategies and projects

Implementation

WVDOT approach to put the 2050 LRTP into motion

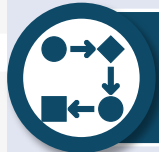


Needs Assessment



2050 LRTP

Overview – How This All Connects



Phase 3 – compare revenues against multimodal needs

NEEDS

define through models, experts, plans, studies



GAPS

grow by system deterioration, material cost, future uncertainties

REVENUES

forecast from current investment plans and changing revenue futures and risks



OPTIONS

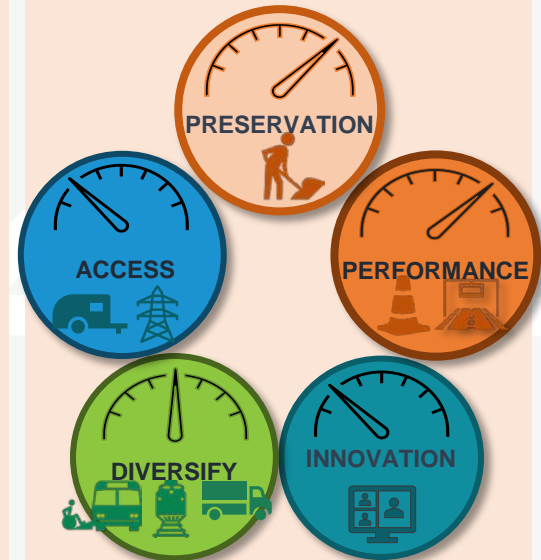
vary by alternate revenue scenario

TRADE-OFFS & PRIORITIES

- » Asset performance
- » System efficiency, reliability & safety
- » Technology supportive opportunities
- » Multimodal & intermodal connections, access
- » Transportation importance to jobs, healthcare, education

PORTFOLIOS

Basis to inform policies, programs, initiatives and outcomes for LRTP implementation



Phase 4 – identify policies, programs and projects to meet WV transportation goals



2050 LRTP Needs Assessment

Recent Statewide Plans and Programs

Prior LRTP, Freight, Asset, Rail, Bicycle, etc...

Asset Management Systems

Bridge and pavement needs through WVDOT models guided by baseline revenue and performance-based scenarios.

Metropolitan Planning Organization LRTPs

Multimodal project- specific improvements from eight urbanized regions including both fiscally-constrained and vision projects.

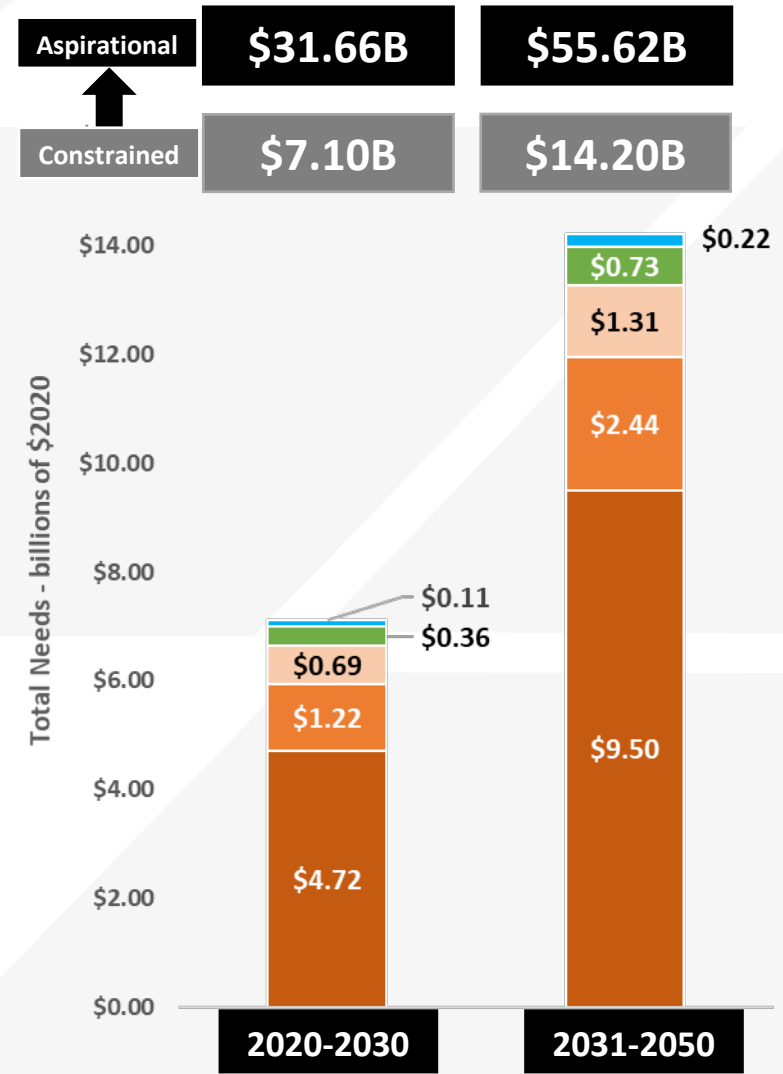
Subject Matter Experts (SMEs)

WVDOT staff who helped “ground truth” information.

Stakeholder Survey

Perspectives of 106 participants representing WVDOT, MPOs, Regional Planning and Development Councils, and other agencies.

Summary of Future Multimodal Needs



2050 LRTP

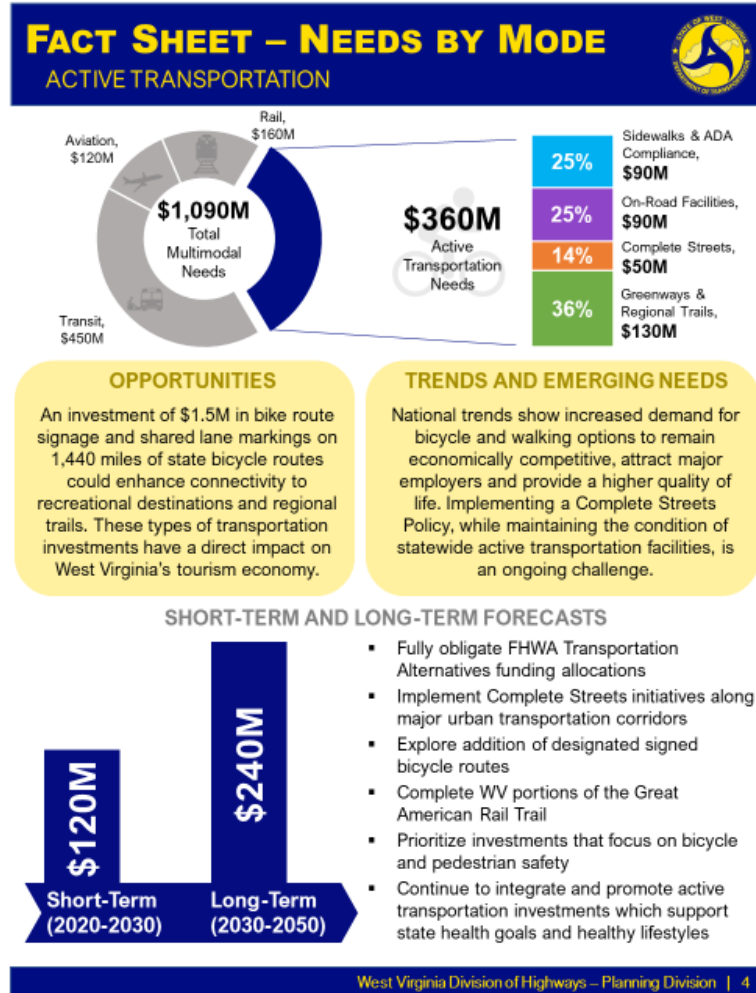
Needs Assessment – Report & Fact Sheets

Technical Report

details the complete story, sources, limitations, and outcomes

Fact Sheets (9 total)

- **Technical Summary**
distilled “at a glance” information in reader friendly format
- **Story Telling**
highlights mode, asset specific challenges and opportunities facing WV systems through WV data, tools and SME input
- **Resource Material for Partners, Public**
Packet for distribution to WVDOT planning partners and the public



2050 LRTP Needs Assessment Platform

Needs Assessment Platform (NAP)

Single, comprehensive inventory of multimodal transportation needs

Scalable, Updatable

“Live” database can be updated as future modal, system plans come online; place to track and update future LRTPs

Built to Query

Filter needs by timeframe, mode, sub-mode, source, goal, program, project type, constrained, aspirational. Forecasts of mode-specific, program-based or deterioration-based analyses.

Designed to Evolve

Future functionality could add geospatial reference, tailored reporting capabilities to respond to a variety of federal, state, or local partner inquiries.



Revenue Forecast



2050 LRTP Finance Plan

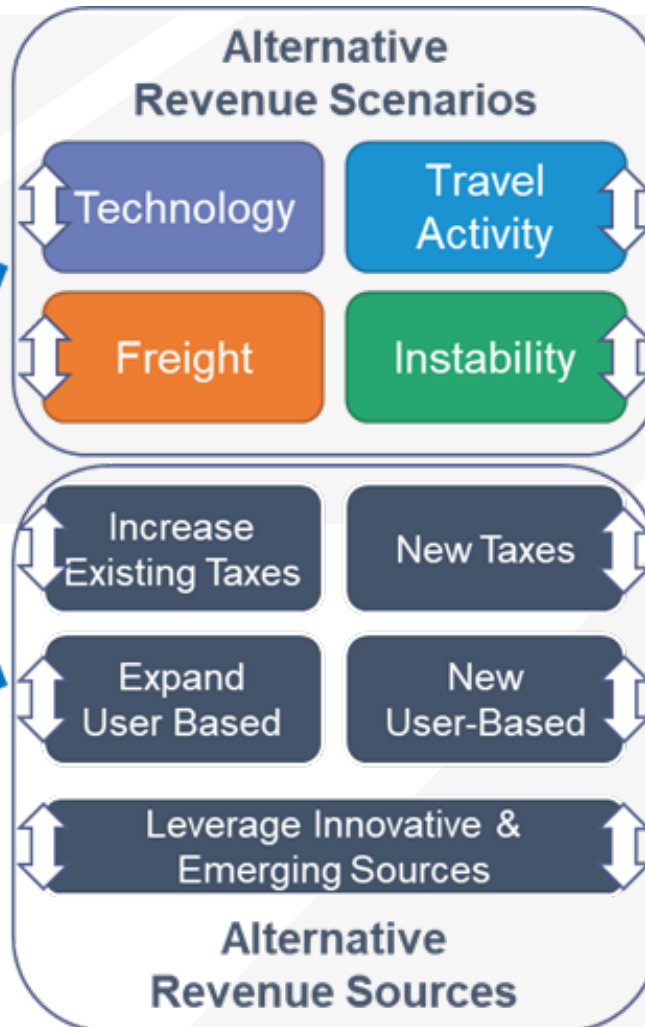
"Real" Population Growth

Stakeholder input guided subsequent tests off 1.78M estimated future population by 2050

Real Gradual economic recovery

Constrained Revenues

Continued estimating all available revenues for capital investment by excluding basic operating expenses



Alternative Scenarios Analyzed macroeconomic effect on revenue across: **Technology**, **Travel Activity**, **Freight**, and Unstable (**Instability**) scenarios

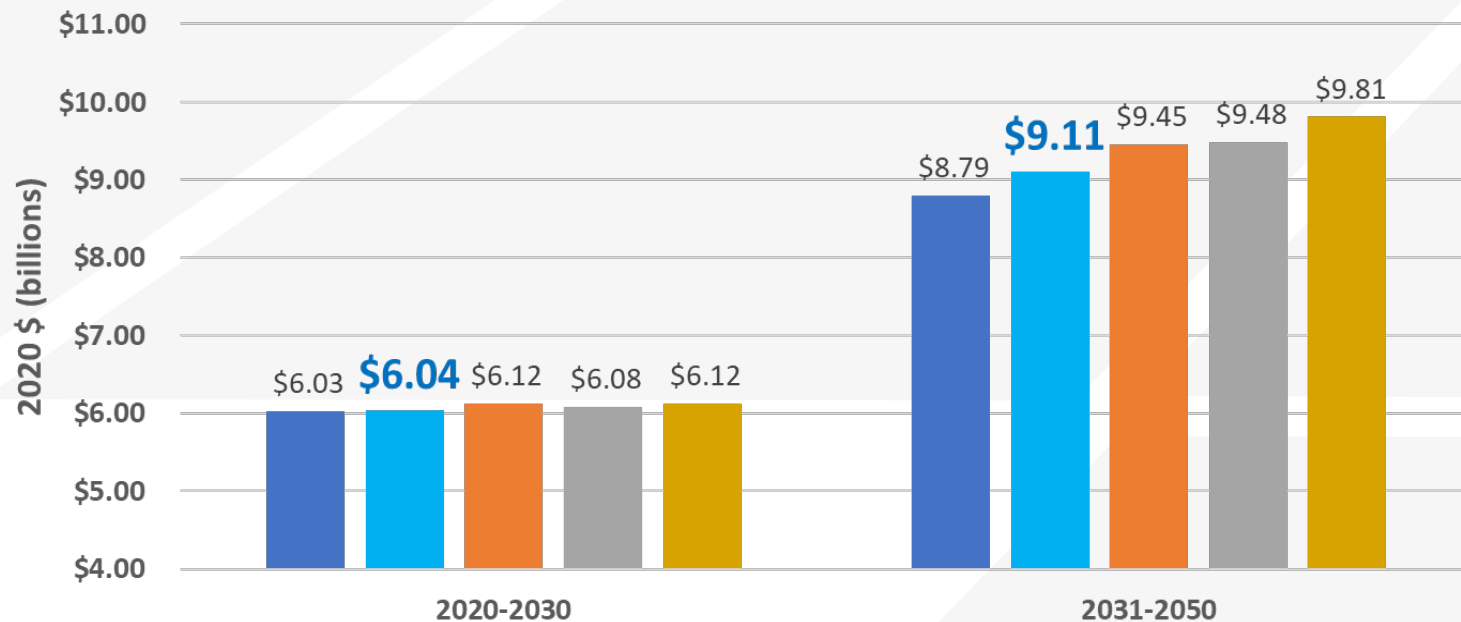
Alternative Sources Evaluated revenue outcomes from possible modifications and additions to amplify, diversify, and strengthen revenue sources



2050 LRTP

Revenue Forecast – Baseline Results

Total DOH Constrained Revenue (\$2020)



Baseline
Trend based on 2012-2020 and forecasts

Real
Gradual economic recovery

Rebuild
Return to 2012 population

Return
2000's growth rate

2 million
WVs population in 1950



2050 LRTP

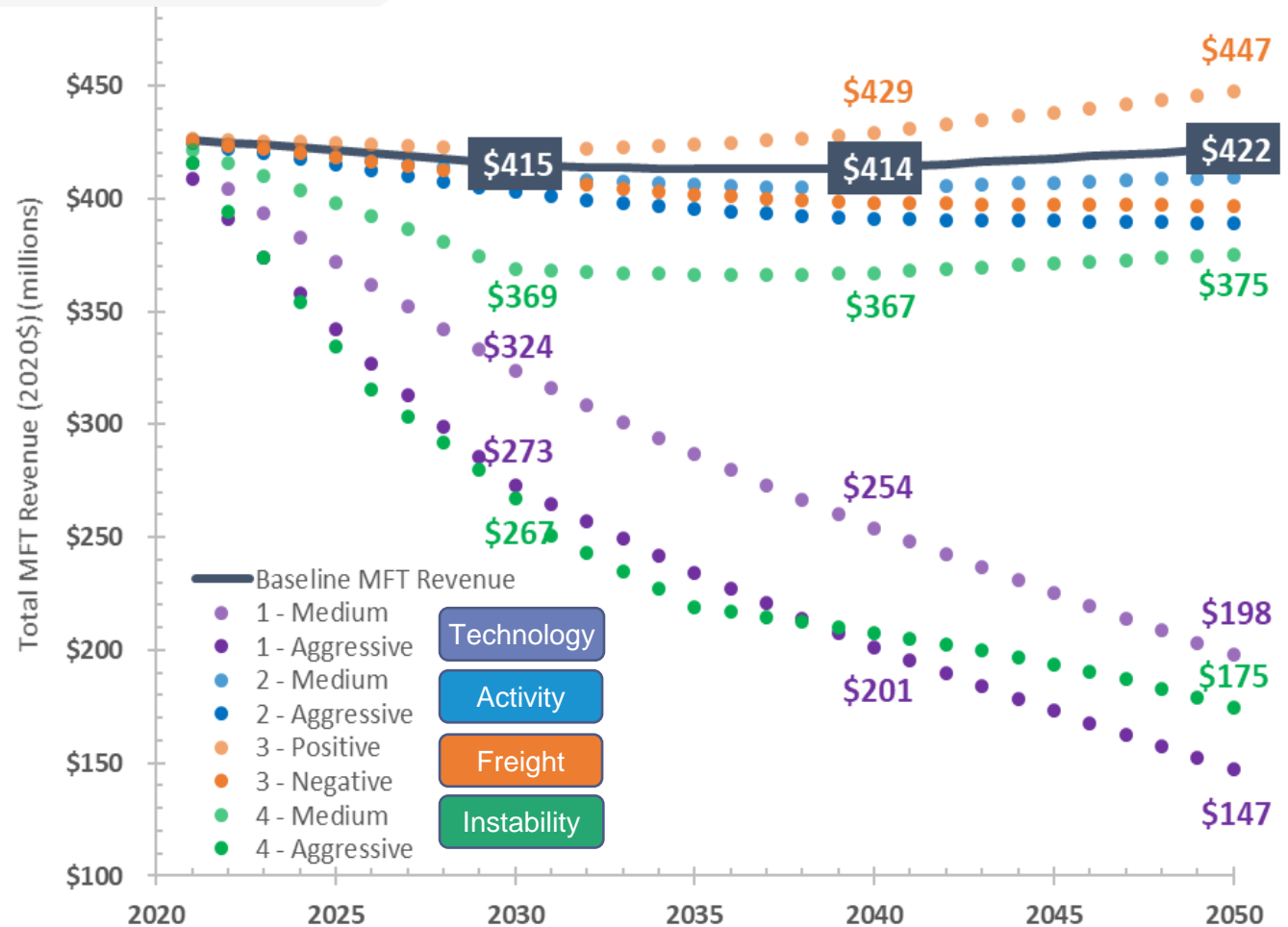
Revenue Forecast – Scenario Results

High EV market share (up to 40% by 2050) has largest effect on Motor Fuel Tax revenue

Changing travel activity may lead to revenue decreases (but models are variable)

Leveraging freight traffic growth can provide added revenues

Unexpected events and high inflation impacts both revenue and costs



2050 LRTP

Revenue Forecast – Sources Results

Increasing Existing Taxes

enables revenue to keep pace with cost increases

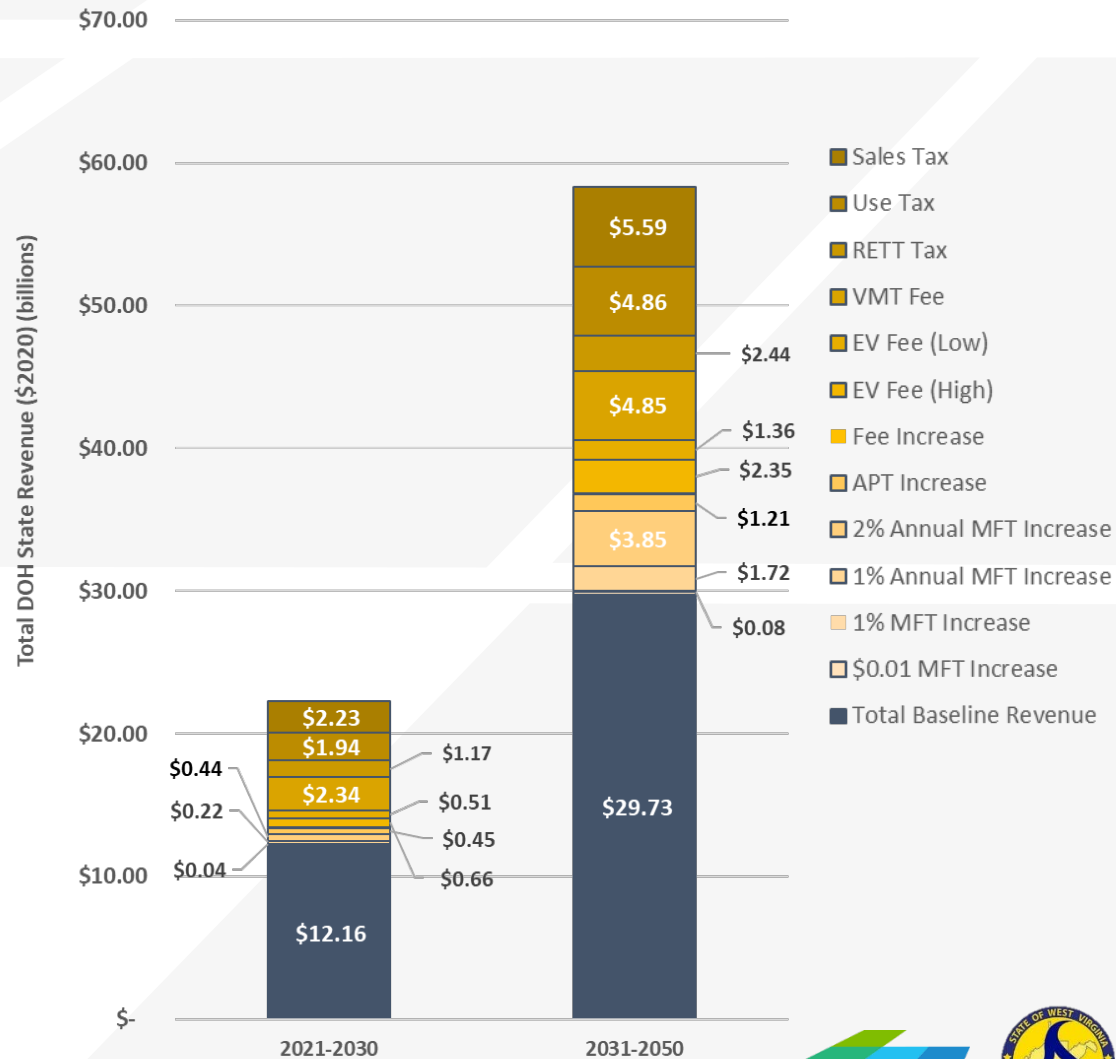
Adding New Fees offsets tax burden

EV fees offset losses to fuel taxes from fleet changes

Implementing VMT Fee

generates direct revenues for roads being used and could eventually replace MFT

Introducing new taxes outside transportation diversifies revenue sources and can provide significant yield



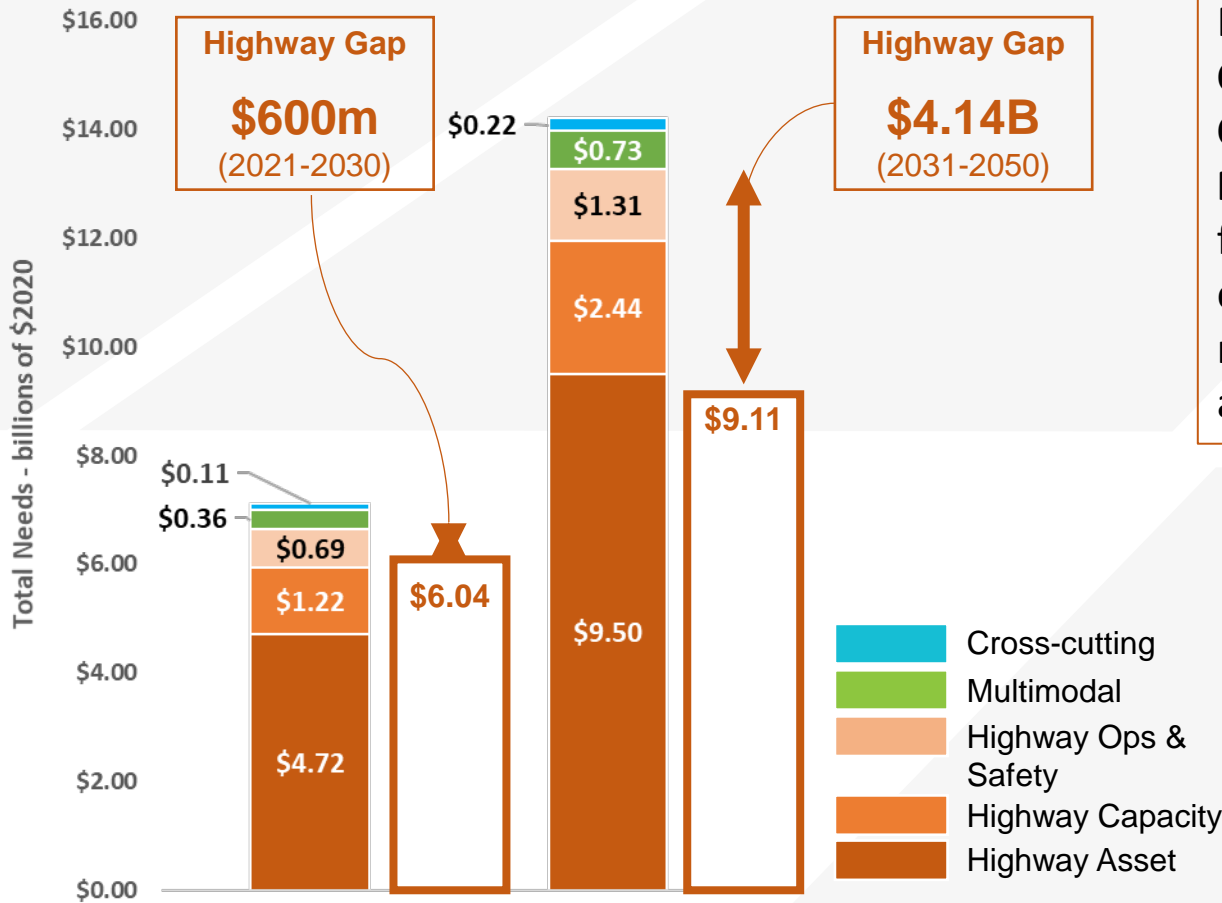
Gap Assessment



2050 LRTP

Gap Analysis – DOH Review

Constrained Needs vs. Constrained Revenues



Needs Exceed Revenues
 Focusing on **Constrained Needs vs. Constrained Baseline Revenues** provides a framework to compare existing and alternative revenues against **constrained** and **aspirational** needs

Platform for developing Portfolios & Strategies



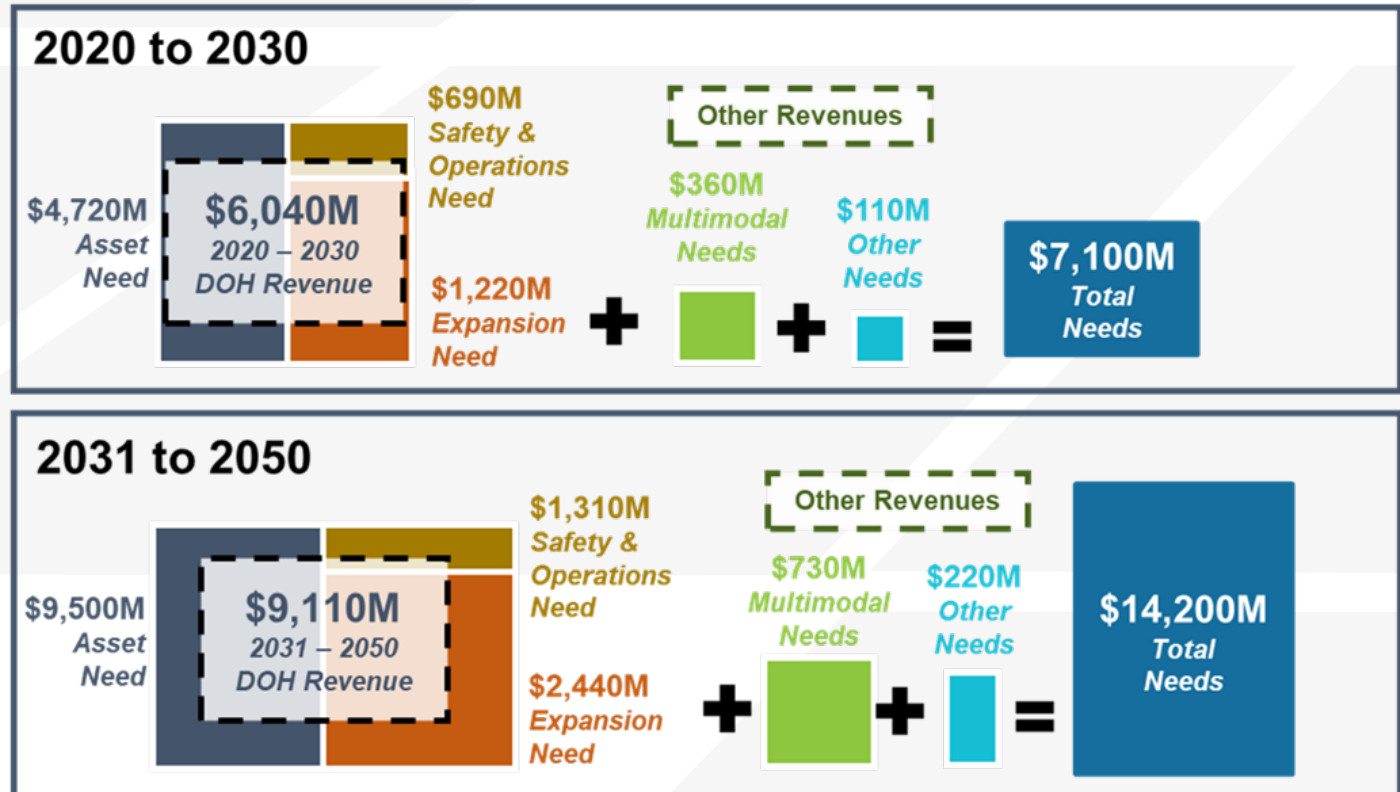
2050 LRTP

Gap Analysis – Multimodal Perspective

Time Grows Gap

Unaddressed needs increase if nothing is done.

Studying alternative future **Scenarios** alongside changes to revenue **Sources** supports portfolios, strategies, and prioritization



Ongoing Challenges to Funding Transportation As needs outpace revenues, the **2050 LRTP** helps WVDOT *prioritize* approaches to ensure timely repairs are made as future investments are planned across modes, timeframes, and systems.



2050 LRTP Gap Conclusions

Shaped by Goals & Objectives



As needs increase, costs continue to rise, assets continue to age, economy diversifies, and travel patterns change

Gap Increases

If WVDOT increases efficiency through new technology and best practices leading to lower costs and higher return on investment

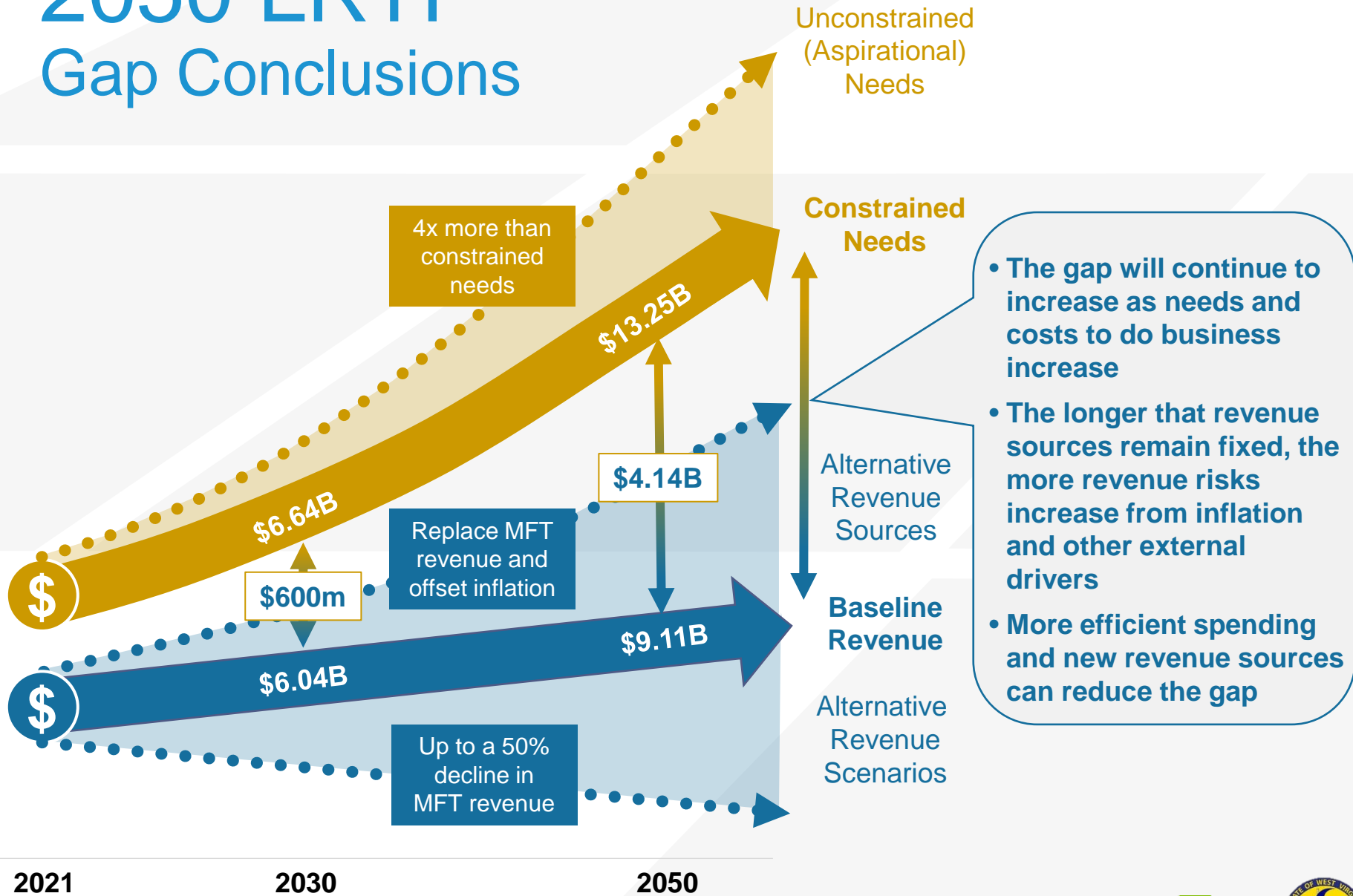
Gap Decreases

As revenues yield less (if sources remain constant) due to inflation, emerging trends and uncertainties

If modified and new revenue sources can limit the impact of trends that weaken existing revenue sources



2050 LRTP Gap Conclusions



Portfolio Development



Defining Portfolios



Focus on critical asset management needs by balancing asset preservation strategies across the entire system



Focus on highway safety and reliability needs, including behavioral and systemic safety improvements and operations and capacity strategies



Focus on existing and emerging technology opportunities to optimize program delivery, capitalize on opportunities, build new partnerships, and prepare for new technologies



Focus on increasing investment in multimodal options for passenger and freight trips to improve access to destinations and opportunities



Focus on serving disconnected communities and addressing network gaps to improve access to jobs, health care, recreation, and key industries



Portfolio Strategies



Preservation	Performance	Innovation	Diversify	Access
Preserve and comprehensively improve bridge conditions	Expand safety awareness which target driver behavior and decision making	Invest in asset condition and performance tools to better inform decisions	Integrate complete streets, regional trails, rail trails, on-road bicycle systems, and ADA compliance programs	Ensure rural roads are accessible, reliable, & resilient
Preserve and comprehensively improve pavement conditions	Deploy more countermeasures in the form of rumble strips, guardrails, retroreflective pavement markings	Expand coordination activities with activities with partner agencies and private sector	Modernize and market commercial service airports and expand general aviation opportunities	Provide convenient and understandable connections to WV recreational and heritage sites, including national and state parks
Deliver equitable and balanced asset management to foster local and regional commerce	Deploy localized roadway design improvements and enhancements	Support policy enabling electric, connected, and autonomous vehicle technologies	Ensure transit assets remain in working condition, improve passenger facilities, and expand and implement new flexible systems	Leverage technology to expand education opportunities especially in underserved communities
Ensure support facilities, vehicles, roadside assets are in good condition, and enhance quality and capacity of travel plazas and welcome centers	Expand statewide Intelligent Transportation Systems along high priority WV routes	Develop a statewide mobility plan and program that coordinates transit and other mobility services	Enhance passenger rail service and reliability and improve access to key destinations	Promote continued access to health programs & services for all citizens
Protect at risk assets and maintain stormwater facilities	Enhance operational, design, and access management features of high priority WV routes	Implement new innovative project delivery and management strategies	Collaborate with Class I and shortline railroads to improve rail crossings, address bottlenecks, and provide access to industries	Provide equal access to healthy and affordable food choices across developed & rural communities



Portfolio Performance

System Investment Outcomes



Balance of bridge to pavement condition



Optimize capacity in corridors and establish safer statewide and regional travel conditions



Technology enhances statewide travel and introduces new regional and local travel options



Intermodal, multimodal connectivity to industries, terminals and destinations enhance state economic opportunity



Target investment in key corridors and to underserved areas which stimulate regional, local economies

Change in Performance

*Relative to current state, degree of difference
By time period, by state and local scale*

% Poor, %Fair, %Good

Serious Injury & Fatality Rates

PAX & FRT Travel Time Reliability

PAX and FRT Travel Time Reliability

% Non-Highway Mode Share (PAX & FRT)

% Non-Motorized Mode Share

% Non-Highway Mode Share

PAX & FRT Travel Time Reliability



Portfolio Process



Portfolio Review – Framework



ALIGNMENT

- » System Condition
- » Safety and Security
- » Economic Vitality
- » Multimodal Mobility, Access, Reliability
- » Livable and Healthy Communities



PERFORMANCE

- » Safety – Crash Modification Factors
- » Assets – BMS/PMS Modeling
- » Reliability – Passenger and Freight Travel
- » Other – FTA Asset Management and Public Transit Asset Safety Plans; FRA Rules



READINESS

- » Status (Existing, Modified, New)
- » Address short- and long-term Gap
- » Resource Constraints
- » Policy/Regulatory Issues to Implement
- » Public Acceptance



RESILIENCY

- » Demographic, Economic, Technology Trends
- » Environmental Conditions, Natural Hazards
- » Federal or State Requirements?
- » Funding Changes?



Portfolio Review



Highway Preservation Portfolio

Guiding Principles



Focus on the most critical asset management needs including bridges, pavement, and roadside assets

- Strategies to support WV's most critical system condition and performance issues for pavement and bridges
- Strategies to maintain the optimal balance between NHS, non-NHS and Turnpike pavement and bridge performance against deterioration, traffic demand and limited funding resources
- Strategies which employ more innovative construction materials and methods to increase the durability of assets
- Strategies which increase treatment cycles to proactively extend service life and save repair/recovery costs over time



Highway Preservation Portfolio Considerations



Focus on the critical system performance issues

by balancing asset preservation across the entire system

- What funding mechanisms exist to inject extra funding into the bridge program to further reduce % poor condition and more long-term, achieve a more predictable and steady annual funding need and expectation to manage the state-wide system?
- How does the bridge program approach get communicated to stakeholders to obtain supportive buy-in for the best asset management practice methodology?
- How should WVDOH deal with its non-NHS and non-Federal aid eligible highway system?
- What is the proper amount to collect and within what timeframe for Non-NHS pavement condition data to maximize benefit cost to then process in the PMS for treatment recommendations?



Highway Performance Portfolio

Guiding Principles



Focus on addressing highway safety and reliability needs, including behavioral and systemic safety improvements and highway operations and capacity strategies

- **Maximize the statewide awareness of traffic safety programs** through education and outreach and the role of law enforcement and high-quality safety data
- **Leverage the focus on improving driver behavior** through deploying countermeasures to address critical issues and enhancing highway design practice
- **Optimize the use of existing and new technologies** to actively manage traffic in high-travel corridors and monitor conditions across the State
- **Strategically address existing and future system bottlenecks** through proven and innovative design and infrastructure



Highway Programs Portfolio Considerations



Focus on highway safety, operations, and reliability needs, balanced with asset preservation

- Do these strategies provide the right balance to maintain reliable statewide travel time and mobility while also addressing local safety needs?
- Do the strategies provide ample opportunity to strengthen existing state and local agency partners or facilitate new resource sharing arrangements?
- Do the strategies provide the right mix of near-term implementation tied to existing agency initiatives and programs? Do the strategies set the stage for longer term resource and priority setting direction?



Innovation Portfolio

Guiding Principles



Focus on existing and emerging technology opportunities to optimize asset preservation, safety, highway operations, and multimodal mobility and access

- Strategies which enhance agency response, data streams and communication with changing infrastructure conditions
- Strategies which can provide more real time information to transit providers and users through web and mobile applications
- Strategies which cultivate a “technology awareness” within all phases of project planning, design, operations and construction



Innovation Portfolio

Considerations



Focus on existing and emerging technology opportunities to optimize asset preservation, safety, highway operations, and multimodal mobility and access

- Fostering an innovation culture at WVDOT starts with building and deploying new management tools to streamline operations and focus on data-driven decisions and procedures. Could a standalone office coordinate these activities?
- A baseline of tools and procedures can foster more innovation, pilots, and new partners to explore new strategies and program delivery. Are there programs/policies in place that foster pilot tests and new partnerships?
- How does WVDOT market innovation, and can this help create potential for private investment?



Diversify Portfolio

Guiding Principles



Focus on increasing investment in multimodal options for passenger and freight trips to improve access to destinations and opportunities.

- Strategies which expand multimodal system connectivity to provide more equitable access for underserved communities and support enhanced freight movement statewide
- Strategies which focus on prioritizing investments in safety measures and related infrastructure for all travelers to improve operational efficiency (i.e., Bike/Ped, ADA compliance, Hwy/Rail crossings)
- Strategies which improve existing assets through management and maintenance, fleet replacements and expansions, and modern infrastructure improvements to meet future travel demand
- Strategies which invest in emerging technologies to support economic development opportunities and increase mobility options for all travelers



Diversify Portfolio

Considerations



Focus on increasing investment in multimodal options for passenger and freight trips to improve access to destinations and opportunities.

- Do the strategies provide a balance of transportation access to return on investment?
- Do the strategies allow for increasing partnerships with agencies/organizations to improve multimodal connectivity?
- Do the strategies leverage state funds to pursue Federal loans and grant applications thereby maximizing limited resources?
- Do the strategies provide a framework to maintain and improve current and future infrastructure needs, while also addressing economic development and growth?



Access Portfolio

Guiding Principles



Focus on serving disconnected communities and addressing network gaps to improve access to jobs, health care, recreation, and key industries

- Strategies **enhancing** reliability to underserved rural areas statewide to complement and compete with cities
- Strategies **closing** gaps of job opportunities, education, and health care across rural and urban areas
- Strategies **empowering** a healthy and thriving population who choose to invest in and bring talent to West Virginia



Access Portfolio Considerations



Focus on serving disconnected communities and addressing network gaps to improve access to jobs, health care, recreation, and key industries

- As many strategies will require coordination and collaboration with other state agencies, how can WVDOT's relationship across agencies be amplified to streamline implementation?
- Given existing services provide a wealth of value, can any be modified slightly to meet strategies without creating new programs?
- As some strategies might require new taxes and/or other public funding sources, how might the current political climate respond? Should strategies be reframed to ease adaption and assist acceptance?



Portfolios to Implementation Considerations

1. How should we **prioritize strategies**?

- Create a priority portfolio
- Group strategies into 3 tiers (top tier becomes the “priority portfolio” as the top 8-10 strategies)

2. 2050 LRTP Implementation Plan approach:

- **Within each Tier 1 strategy** will be targeted actions (executable specific policies, plans, programs, projects)
- **Within Tier 2 and Tier 3 strategy** will be recommendations for next steps (planning and policy development only)



Next Steps



2050 LRTP

Next Steps

- Overall strategy priority questions and specific strategy considerations
- **Leadership and Policy & Technical Team survey**
- Setup SME meetings to review portfolio strategies and prioritize
- Implement public outreach



Complete Needs Assessment, Finance Plan, Gap Assessment



By early May... Portfolio Fact Sheets, System Performance Report



By end of May... Final Portfolios, Strategies, and Draft Implementation Actions



May - June... SME interviews, Stakeholders input to Portfolios



May - June... Public Outreach



By mid June... Draft Implementation Plan



By end of June... release 2050 LRTP Plan for public comment

