House Bill 2 Update

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Deputy Secretary of Transportation
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House Bill 2 Update

- **February CTB** – Recommended draft measures
- **Late February/Early March** – Meetings in each district over next 3 weeks
- **March CTB** – Draft process presented to Board
- **March/April** – Public Comment on draft process
- **May CTB** – Revised process presented
- **June CTB** – Final process considered by Board
House Bill 2 Factors

- Law requires the following:
  - Quantifiable and objective measures
  - Analysis of a project’s benefits relative to its cost – essentially a benefit-cost analysis using the HB2 factors
  - Board to consider all modes of transportation
House Bill 2 Factors

- Factors required by law are:
  - Congestion mitigation
  - Economic development
  - Accessibility
  - Safety
  - Environmental quality
  - Regional transportation and land use (areas over 200K)
Guiding Principles for Measures

- Analyze what matters to people and has a meaningful impact
- Ensure fair and accurate benefit-cost analysis
- Transparent and understandable
- Must work for both urban and rural areas
- Must work for all modes of transportation
- Minimize overlap in measures
Process Used to Develop Measures

- Researched best practices from other state DOTs and MPOs
- Established sub-work group focused on measures
- Held peer exchange workshop
- Surveyed stakeholders
- Held outreach meetings with key stakeholders
- Additional outreach over coming months
Measure Characteristics

- Weight of measure in the factor (%)
- What (unit of measurement)
- When (time period of analysis – existing, 2025)
- Where (facility, corridor, region)
- How (model, manual calculation, GIS tools, information from project sponsor, other)
- How can a project impact the outcome of a measure
Safety Factor

• Recommend two measures
  – 50% of score - Reduction in the number of fatalities and severe injuries
  – 50% of score - Reduction in the rate of fatalities and severe injuries per 100 million vehicle miles traveled
Reduction in Number of Fatalities and Severe Injuries

- **What** - Measure the expected change of fatalities and severe injuries due to project
- **When** - Analyze change from existing conditions
- **Where** - Expected change would be analyzed along a specific facility
- **How** - FHWA and state crash modification factors will be used to determine the expected change due to project
- **Impact** – A number of treatments such as medians, turn lanes, sidewalks, roundabouts, and other improvements
Example 1 - Urban Two Way Stop to Roundabout Control (0.2 mi)

Expected reduction in fatalities and severe injuries of 78% based on FHWA crash modification factors.

Credit: FHWA
Example 2 - Urban Corridor Adaptive Traffic Signal Control at Eight Intersections (2.5 mi)

Expected reduction in fatalities and severe injuries of 8% based on FHWA crash modification factors

Credit: Charlottesville Stock Photography
Reduction in the rate of fatalities and severe injuries per 100M VMT

- **What** – Measure the expected change in the rate of fatalities and severe injuries per 100 million vehicle miles traveled due to project
- **When** – Analyze change from existing conditions
- **Where** – Facility level analysis
- **How** – FHWA and state crash modification factors will be used to determine the expected change due to project
- **Impact** – A number of treatments such as medians, turn lanes, sidewalks, roundabouts
Congestion Factor

• Recommend two measures
  – 50% of score - decrease in the person hours of delay in the corridor
  – 50% of score - increase in peak-period person throughput in the corridor
Person Hours of Delay

- **What** – Decrease in the number of person hours of delay in the corridor based on level of service E
- **When** – Analyze change between build and no-build in 2025
- **Where** – Corridor level analysis
- **How** – Highway capacity manual and regional models will be used to determine expected changes
- **Impact** – Capacity expansion, operational improvements, transit service, intersection improvements, and other improvements
Peak Period Person Throughput in Corridor

- **What** – Increase in the number of people expected to move through the corridor during the peak period
- **When** – Analyze change between build and no-build in 2025
- **Where** – Corridor level analysis – facility and related parallel facilities
- **How** – Regional models and statewide planning system would be used to determine expected change
- **Impact** – Capacity expansion, operational improvements, transit service, intersection improvements, and other improvements
## I-66 Inside the Beltway Study - Peak Period Person Throughput

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Congestion Factor

**Atlanta**
- Travel Time Index: 1.35
- Average travel time: 57.4 minutes
- Extra rush hour delay: 14.8 mins
- Travel time without traffic: 42.5 mins

**Chicago**
- Travel Time Index: 1.43
- Average travel time: 35.6 minutes
- Extra rush hour delay: 10.7 minutes
- Travel time without traffic: 24.9 minutes

Though Atlanta has a much lower (better) Travel Time Index (TTI), Chicago commuters spend 20 minutes less per peak period trip.
Accessibility Factor

- Recommend three measures
  - 60% of score - Increase in the cumulative access to jobs accessible within 45 minutes in a region
  - 20% of score - Increase in the cumulative access to essential destinations accessible within 30 minutes in a region
  - 20% of score - Increase in the access to travel options in a corridor
Increase Access to Jobs

• **What** – Increase in the cumulative access to jobs that can be reached within 45 minutes in a region
• **When** – Analyze change between build and no-build in 2025
• **Where** – Regional level of analysis – aggregated from “zone” level information
• **How** – GIS tool developed by consultant with information from regional models and statewide planning system would analyze impact of projects
• **Impact** – Increase travel speeds and/or reduce distance between home and work
Increase in Access to Essential Destinations

- **What** – Increase in the cumulative access to essential destinations that can be reached within 30 minutes in a region
  - Education, health care and recreational facilities
- **When** – Analyze change between build and no-build in 2025
- **Where** – Regional level analysis
- **How** – GIS tool with information from regional models and statewide planning system
- **Impact** – Increase travel speeds and/or reduce distance between home and essential destinations
Example: Accessibility by Mode for Rockville Pike in Maryland
Increase Access to Travel Options

- **What** – Degree to which project includes components to improve travel options
- **When** – Change compared to existing conditions
- **Where** – Corridor level analysis
- **How** – Project sponsors would include information to support award of points
  - GIS tools, regional models, the statewide planning system, and other tools may be used to verify sponsor information
Increase Access to Travel Options

- Project receives points based on whether it:
  - Provides connections between modes of transportation
  - Accommodates other modes of transportation
  - Provides real-time traveler information regarding use of alternatives routes or other modes of transportation
  - Enhances transportation demand management options

- Project points will be scaled based on the projected number of users
Environmental Factor

• Focus on social and natural factors
• Four recommended measures
  – 50% of score – Degree to which a project is likely to improve air quality and reduce greenhouse gas emissions
  – 40% of score – Change in number of jobs accessible within 45 minutes for disadvantaged populations
  – 10% of score – Change in the number of essential destinations accessible within 30 minutes for disadvantaged populations
Air Quality and Greenhouse Gas Emissions

• **What** – Degree to which a project includes components that reduces emissions of PM, NOX, CO and CO2
• **When** – Change compared to existing conditions
• **Where** – Corridor level analysis
• **How** – Project sponsors would include information to support award of points
  – Regional models, the statewide planning system, and other tools may be used to verify sponsor information
Air Quality and Greenhouse Gas Emissions

• Project receives points based on whether it:
  – Increases rail transit and/or passenger rail use
  – Encourages more pedestrian and/or bicycle activity
  – Encourages ridesharing and bus transit
  – Reduces delay at bottlenecks with above average truck traffic
  – Encourages shift of goods movement to rail from truck
• Project points will be scaled based on the number of users
Non-Auto Access to Jobs for Disadvantaged Populations

• **What** – Increase in the cumulative access to jobs that can be reached by disadvantaged populations within 45 minutes in a region

• **When** – Analyze change between build and no-build in 2025

• **Where** – Regional level analysis – aggregated from “zone” level information

• **How** – GIS tool with information from regional models and statewide planning system

• **Impact** – Increase travel speeds and/or reduce distance between home and work
Non-Auto Access to Essential Destinations for Disadvantaged Populations

- **What** – Increase in the cumulative access to essential destinations that can be reached by disadvantaged populations within 30 minutes in a region
- **When** – Analyze change between build and no-build in 2025
- **Where** – Regional level analysis
- **How** – GIS tool with information from regional models and statewide planning system
- **Impact** – Increase travel speeds and/or reduce distance between home and essential destinations
Economic Development Factor

- Recommend two measures
  - 70% based on support for new economic activity within project area
  - 30% based on freight efficiency and intermodal access

- First measures focus on new growth
- Second measures supports maintaining and enhancing existing economic growth
Support for New Economic Activity

- **What** – Degree to which project supports local economic development strategies and projects
- **When** – Changes compared to existing conditions
- **Where** – Corridor level analysis
- **How** – Project sponsor would provide information regarding steps taken toward specific economic development actions
  - Documentation would be required to verify information provided by sponsor
Support for New Economic Activity

• Project receives points based on whether it:
  – VEDP enterprise zones
  – PDC has passed resolution demonstrating that project supports adopted Comprehensive Economic Development Strategy
  – Whether development plans have been submitted for review
  – Whether development plans have been approved
  – Whether utilities have been extended/are in place/are programmed for development

• Project points would be scaled using a criteria to be determined – square footage, value, etc
Freight Efficiency and Intermodal Access

• *What* – Degree to which project improves freight efficiency and intermodal access
• *When* – Changes compared to existing conditions
• *Where* – Facility level analysis
• *How* – Variable – sponsor provided information and GIS verification
Freight Reliability and Intermodal Access

- Project receives points based on:
  - Degree to which it enhances access to existing/planned distribution/intermodal/manufacturing facilities
  - Degree to which it improves a primary truck freight route designated in the “National Network”
  - Degree to which it enhances access or reduces congestion at or adjacent to a Virginia port or air carrier airport

- Project points are scaled based on tonnage and value of freight impacted
Land Use Coordination Factor

- Required in areas over 200,000
  - NoVA, Hampton Roads, Richmond, Fredericksburg, Roanoke-Salem
- Links to HB3202 (2007) transportation-land use regional performance measures in Code:
  - Job-to-housing balance
  - Job and housing access to transit and pedestrian facilities
  - Transit and HOV usage
  - Per capita vehicle miles traveled
Land Use Coordination Factor

• **Recommend two measures**
  – 50% of score – Degree to which project will support transportation efficient land use patterns and local policies
  – 50% of score – Degree to which the regionally adopted long-range transportation plan reduces or minimizes growth in per capita vehicle miles traveled
Transportation Efficient Land Use Plans and Policies

- **What** – Degree to which project supports local plans and policies on transportation efficient land use
- **When** – Compared to existing conditions
- **Where** – Regional or corridor level of analysis
- **How** – Project sponsor would provide information regarding project’s impact on local plans and policies
  - Documentation would be required to verify information provided by sponsor
Transportation Efficient Land Use Plans and Policies

• Project receives points based on whether it:
  – Promotes walkable, mixed-use development
  – Promotes in-fill development
  – Supports development that will improve job-to-housing balance
  – Promotes locally designated urban development areas
  – Supports VDOT access management policies, where applicable

• Points would not be scaled
Decreased per capita VMT in Regional Plans

- **What** – Degree to which the adopted constrained long-range plan is projected to reduce or minimize growth in per capita vehicle miles traveled
- **When** – Year of analysis would vary from region to region based on most recently adopted plan
- **Where** – Regional level analysis
  - VMT attributable to pass-through trips would be excluded
- **How** – Regional model would analyze projects and land use patterns to determine projected change in per capita vehicle miles traveled
Next Steps

• **Stakeholder outreach meetings** being held in each district for feedback on draft measures

• **Key issues for discussion with stakeholders**
  – Do the proposed measures work for projects in your region?
  – How much should a measure be weighted in a factor areas?
  – Of the proposed weighting frameworks, does one work for your region? Why? Why not?
  – Are there measures that you believe should be re-considered?
March CTB Meeting

- Staff will provide a draft process for public comment, including:
  - Timeline for implementation
  - Application process, including information needed from sponsors
  - Weighting frameworks
  - Measures and how they will be calculated
- Public comment will be solicited at the spring Six-Year Improvement Program meetings