



COMMONWEALTH of VIRGINIA
Office of the
SECRETARY of TRANSPORTATION

House Bill 2 Update

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February 17, 2015



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**

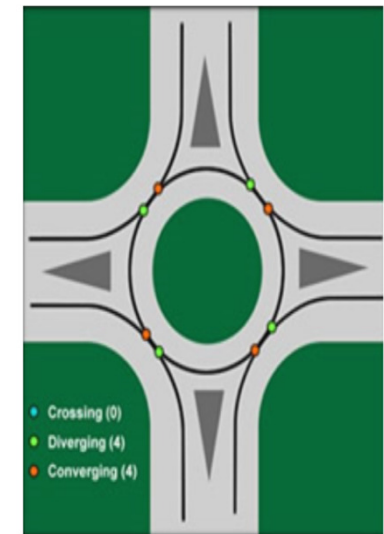
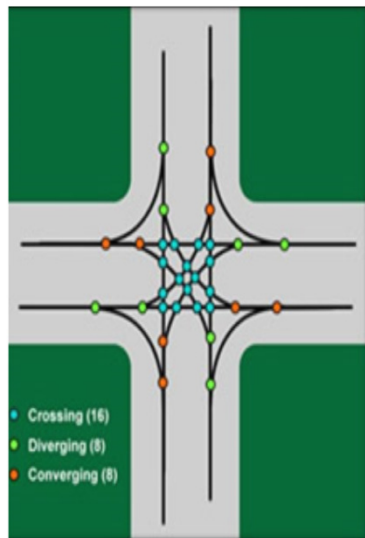
Reduction in Number of Fatalities and Severe Injuries

- ***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

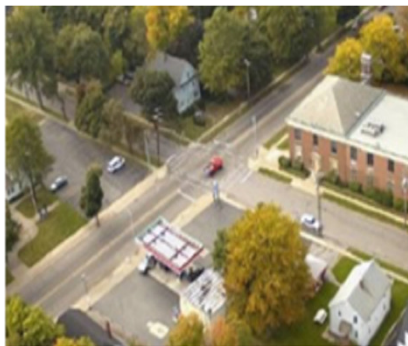
Example 1 - Urban Two Way Stop to Roundabout Control (0.2 mi)

Before

After



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



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



Credit: Charlottesville Stock Photography

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

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

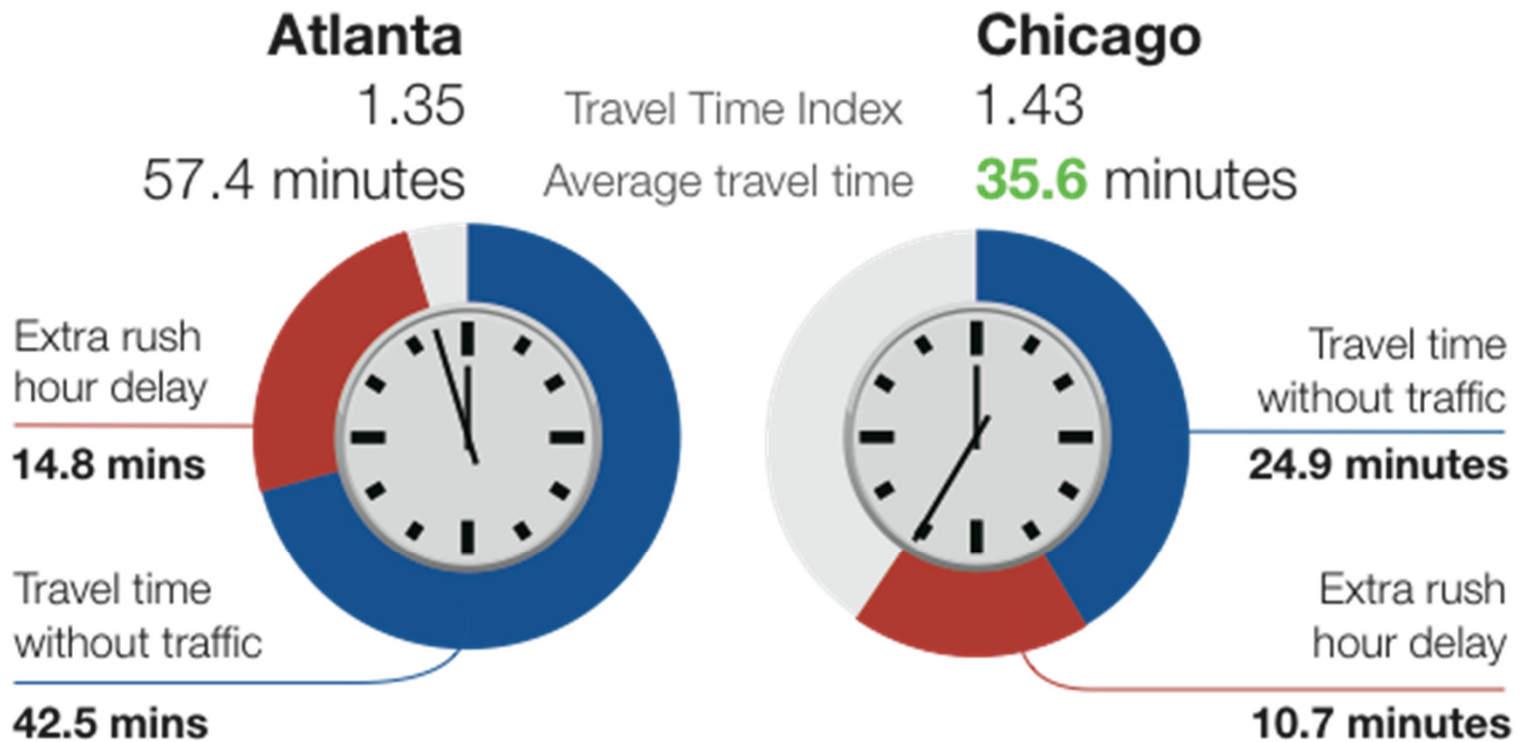
Peak Period Person Throughput in Corridor

- ***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

MOE	CLRP+	Option A	Option B1	Option B2	Option C1
<i>Daily Person Throughput</i>					
Beltway					
Rail	31,058	31,026	30,640	31,161	28,688
Bus	6,050	6,073	5,908	6,056	10,087
Auto	288,446	292,788	296,401	303,269	259,807
West of Glebe					
Rail	100,559	100,528	100,004	101,809	98,287
Bus	9,807	9,830	9,275	9,653	15,332
Auto	369,249	387,380	404,339	380,675	331,465
Clarendon					
Rail	127,713	127,673	126,815	129,300	124,151
Bus	14,498	14,525	14,182	14,150	19,566
Auto	392,804	405,358	428,921	391,373	354,490
Potomac River					
Rail	161,419	161,386	160,964	160,333	158,976
Bus	11,580	11,605	11,497	11,385	16,890
Auto	346,938	346,509	356,630	347,738	302,939

Congestion Factor



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

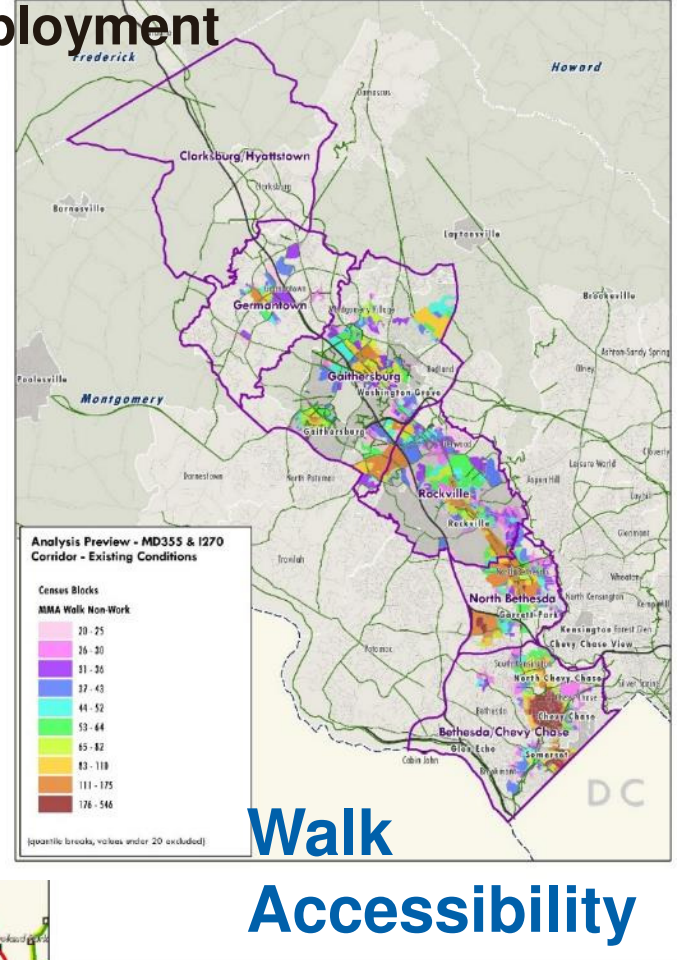
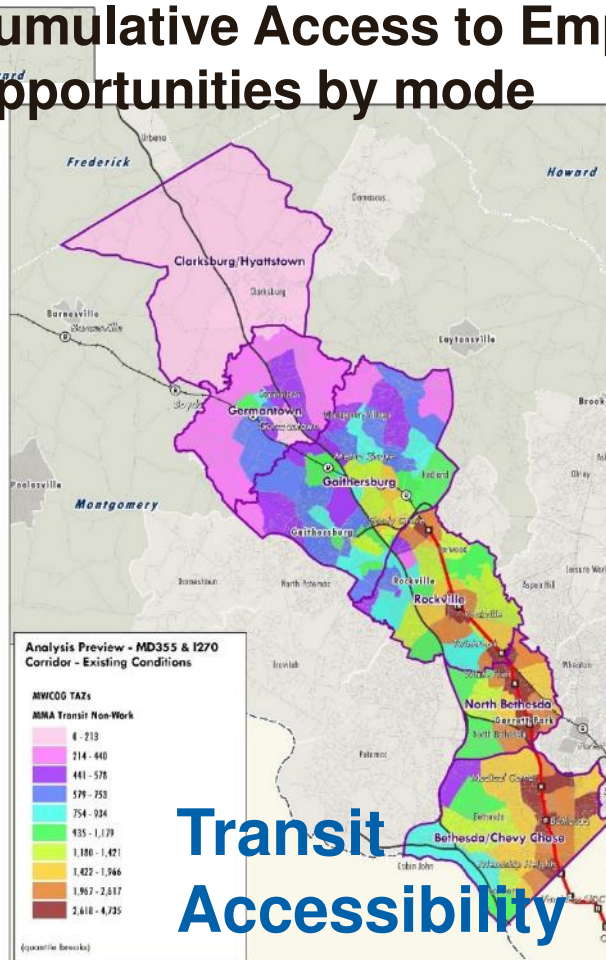
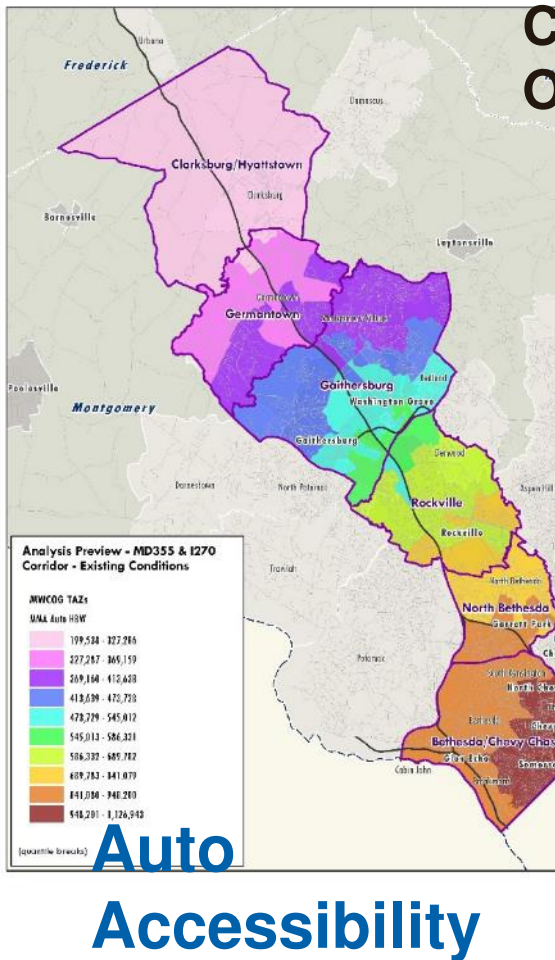
- ***What*** – Increase in the cumulative access to jobs that can be reached within 45 minutes in a region
- ***When*** – Analyze change between build and no-build in 2025
- ***Where*** – Regional level of analysis – aggregated from “zone” level information
- ***How*** – GIS tool developed by consultant 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

Cumulative Access to Employment Opportunities by mode



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**