

Chapter 2: Goals and Performance Measures



Where Do We Want to Go? How Can We Get There?

The BRTB has adopted nine goals, with supporting strategies, performance measures, and performance targets. Together, these goals, strategies, measures, and targets will help the BRTB to guide, and to gauge the effectiveness of, transportation investments over the 2020-2040 period.

In developing goals, strategies, measures, and targets, the BRTB considered:

- federal, state, regional, and local requirements and policies, including MAP-21 (the federal authorizing legislation) and its regulations (described in Chapter 1)
- factors that could affect how the region's transportation systems will perform over the next 25 years (discussed in Appendices B and C)
- comments and recommendations from the public at large and from BRTB advisory groups, including the Public Advisory Committee.

Appendix D lists the specific strategies the BRTB has adopted to advance regional goals and to make progress toward meeting performance targets.

Definitions

- A **goal** is a broad aspiration or guiding principle for the region (e.g., "Improve system safety").
- A **strategy** is an approach or policy to help the region implement a goal (e.g., "Eliminate hazardous or substandard conditions in high-crash locations and corridors").
- A **performance measure** is a specific metric the region can use to assess progress toward achieving a goal (e.g., "Decrease number of highway fatalities").
- A **performance target** is a specific level to be reached within a certain time frame (e.g., "Decrease number of highway fatalities to zero by 2040").



Regional Transportation Goals

Improve System Safety

Make conditions safer for pedestrians, bicyclists, transit riders, and motorists.

Improve and Maintain the Existing Infrastructure

Improve the conditions of existing transportation facilities; systematically maintain and replace transportation assets as needed.

Improve Accessibility

Help people of all ages and abilities to access specific destinations.

Increase Mobility

Help people and freight to move reliably and efficiently.

Conserve and Enhance the Environment

Pass on to future generations the healthiest natural and human environments possible.

Improve System Security

Provide a secure traveling environment for everyone; improve the region's ability to respond to natural or man-made disasters.

Promote Prosperity and Economic Opportunity

Support the revitalization of communities, the development of activity centers, and the movement of goods and services.

Foster Participation and Cooperation Among Stakeholders

Enable all interested and affected parties to participate and cooperate to find workable solutions.

Promote Informed Decision Making

Ensure that adopted transportation policies and performance measures guide the regional decision making process.



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Regional Performance Measures and Targets

Consistent with MAP-21's emphasis on performance-based planning, the BRTB has established several performance measures and targets. These will enable the BRTB to monitor and evaluate, over time, the performance of the region's transportation system relative to the regional goals. Shown below are the adopted measures and targets for the region.

Regional Performance Measures – Emphasis Areas Required by MAP-21

System Safety – Roadways (the following safety measures apply to all public roads)

- Reduce serious injuries¹ per 100 million vehicle miles traveled (VMT) to 3.0 by 2040.
- Reduce fatalities per 100 million VMT to zero by 2040.
- Reduce number of serious injuries to 676 by 2040.
- Reduce number of fatalities to zero by 2040.

System Safety – Transit (the following measure applies to both MTA and local transit agencies)

- Reduce number of preventable crashes² per 100,000 revenue vehicle miles to zero by 2040.

System Conditions – Roadways and Bridges

- Maintain portion of state-owned roadway miles with acceptable ride quality³ at 82% or above.
- Maintain portion of structurally deficient state and local bridges below 5.0%.

System Conditions – Transit

- Maintain average age of MTA and local transit agency bus fleets⁴ below 7.0 years.

System Performance – Congestion

- Maintain portion of VMT in congested conditions⁵ on state-owned arterials during the evening peak hour (5-6 PM) below 25%.

System Performance – Freight

- Maintain average truck turnaround time at Seagirt Marine Terminal below 58 minutes.

System Performance – Emissions

- Maintain levels of VOC, NOx, PM_{2.5}, and CO emissions at levels less than motor vehicle emission budgets in the State Implementation Plan.

1 Definition of "serious injury" based on the concept of "suspected serious injury (A)" as identified in the latest edition of the Model Minimum Uniform Crash Criteria (MMUCC), available at <http://www.mmucc.us/>.

2 A preventable crash is one in which a transit vehicle driver does not do everything that could have been done to avoid a crash.

3 Pavement ride quality is determined by measuring the pavement longitudinal surface profile and calculating International Roughness Index (IRI). The acceptable rate shown is percentage of directional miles with an IRI less than 170 inches per mile in the right wheelpath on state-maintained routes that are at least one mile long.

4 Local bus only; excludes commuter bus, express bus, and paratransit vehicles.

5 A congested condition exists when the Travel Time Index (TTI) is greater than 1.3. TTI is the average travel time of a trip during peak period divided by travel time during off-peak (free-flow) conditions.

Measures Beyond MAP-21 Requirements – Accessibility

- Increase percentage of urban area⁶ state-owned directional roadway miles that have sidewalks (both sides of the roadway) to 25% by 2040.
- Increase bicycle/walk-to-work mode share⁷ to 5.0% by 2040.
- Increase average weekday MTA and local agency transit ridership (all modes) to 500,000 by 2040.

System Performance Report – State of the System

The following tables show the state of the region’s transportation assets and system conditions:

System Safety – Roadways						
	2009	2010	2011	2012	2013	Targets (2040)
Serious injuries per 100 million VMT	6.52	5.51	5.70	4.70	4.40	3.0
Fatalities per 100 million VMT	0.96	0.77	0.78	0.88	0.73	0
Number of serious injuries	1,616	1,381	1,424	1,182	1,098	676
Number of fatalities	238	193	195	221	184	0

System Safety – Roadways: Number of Fatalities by Mode					
	2009	2010	2011	2012	2013
Driver	143	117	127	139	101
Occupant	33	29	22	40	28
Pedestrian	58	44	42	39	52
Bicycle	4	3	3	2	3

System Safety – Transit: Preventable Crashes per 100,000 Revenue Vehicle Miles						
	2009	2010	2011	2012	2013	Target (2040)
Total, all modes	3.58	4.07	3.32	4.47	3.07	0
Local bus	2.41	3.49	2.61	2.43	1.49	
Light rail	0.03	0.13	0.13	0.24	0.03	
Metro (subway)	0.00	0.11	0.10	0.06	0.00	
Paratransit / taxi access	1.14	0.34	0.48	1.74	1.55	

⁶ Urban area as defined by the U.S. Census Bureau.

⁷ Mode share data from the American Community Survey (U.S. Census).

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System Conditions – Roadways and Bridges						
	2010	2011	2012	2013	2014	Targets
Percentage of state-owned roadway miles with acceptable ride quality	82%	82%	83%	81%	82%	Maintain at 82%
Percentage of structurally deficient state and local bridges	7.3%	6.9%	6.6%	5.9%	5.5%	Maintain below 5.0%

System Conditions – Transit (MTA and Local Transit Agencies)						
	2009	2010	2011	2012	2013	Target (2040)
Average age of local bus fleets (years)	5.6	4.6	4.5	4.1	n/a	Maintain below 7.0

System Performance – Congestion						
	2010	2011	2012	2013	2014	Target
Percentage of VMT in congested conditions on state-owned arterials (PM peak hour)	n/a	24%	26%	25%	25%	Maintain below 25.0%

System Performance – Freight						
	2010	2011	2012	2013	2014	Target
Average truck turnaround time at Seagirt Marine Terminal (minutes)	56.2	54.8	56.0	54.9	54.3	Maintain below 58.0



System Performance – Emissions (modeled)								
	2017	2017 Target	2025	2025 Target	2035	2035 Target	2040	2040 Target
NOx (tons per summer day)	50.7	106.8	25.9	106.8	18.2	106.8	18.2	106.8
VOC (tons per summer day)	26.5	41.2	18.2	41.2	12.0	41.2	11.6	41.2
CO (tons per winter day)	381.0	1,689.8	271.1	1,689.8	197.1	1,689.8	194.9	1,689.8
Direct PM _{2.5} (tons per year)	887	1,218.60	538	1,051.39	448	1,051.39	441	1,051.39
NOx (tons per year)	19,294	29,892.01	10,002	21,594.96	7,742	21,594.96	7,344	21,594.96

Accessibility - Pedestrian / Bicycle						
	2009	2010	2011	2012	2013	Targets (2040)
Percentage of urban area directional roadway miles that have sidewalks	n/a	16.4%	16.5%	16.9%	17.3%	25.0%
Bicycle/walk-to-work mode share	n/a	2.9%	2.9%	3.0%	n/a	5.0%



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Accessibility – Transit: Average Weekday Ridership (MTA and Local Transit Agencies)						
	2009	2010	2011	2012	2013	Target (2040)
Total, all modes	354,193	351,518	377,228	382,903	366,360	500,000

Accessibility – Transit: Average Weekday Ridership by Mode					
	2009	2010	2011	2012	2013
MTA bus (local)	232,945	232,399	241,300	242,730	227,648
MTA bus (commuter)	n/a	n/a	17,104	17,024	16,863
MTA light rail	27,824	26,358	27,582	27,253	27,537
MTA MARC train	32,458	32,604	32,785	33,696	36,685
MTA Metro (subway)	45,564	44,938	48,532	51,018	50,712
MTA mobility / paratransit	3,644	4,032	4,469	5,113	5,586
MTA mobility (taxi)	1,077	808	925	1,044	1,329
Local agencies [* – Carroll County and Annapolis data not available for 2011/2012.]	10,682	10,380	4,531*	5,026*	n/a



Future Performance Monitoring

In cooperation with the Maryland Department of Transportation and its modal agencies, as well as its other state agency partners, the BRTB will continue to monitor the performance of the region's transportation systems throughout the life of this update of the plan. Toward this end, the BRTB has stipulated that BMC staff shall report annually on progress relative to performance measures and targets.

In addition, as the U.S. DOT publishes the remaining final MAP-21 performance measure regulations, the BRTB and BMC staff will reevaluate, as needed, the measures and targets contained within this plan and will determine if any revisions are necessary to remain in compliance with federal requirements.