

ITEM 9 – Information

October 20, 2021

PBPP: Draft Transit Safety Targets

Background:

The board will be briefed on draft regional targets for transit safety performance measures, including fatalities, injuries, safety events, and system reliability, as required under the federal performance based planning and programming (PBPP) rulemaking for public transportation providers and MPOs. The board will be asked to approve the regional targets at its November meeting.



MEMORANDUM

TO: Transportation Planning Board
FROM: Eric Randall, TPB Transportation Engineer
SUBJECT: Performance-Based Planning and Programming (PBPP): 2021 Regional Transit Safety Targets - DRAFT
DATE: October 14, 2021

This memorandum provides an overview on implementation of the federal performance-based planning and programming (PBPP) target-setting requirements for the area of transit safety. Applicable providers of public transportation are required to annually set targets for four performance measures, following which metropolitan planning organizations (MPOs) are required to establish overall transit safety targets for their planning area.

TRANSIT SAFETY RULEMAKING

The Public Transportation Agency Safety Plan (PTASP) rule became effective on July 19, 2019, with one year for implementation. The rule applies to providers of public transportation that are recipients and sub-recipients of FTA Section 5307 funding and that fall under the safety jurisdiction of the Federal Transit Administration (FTA). Applicable providers of public transportation were required to develop and certify Public Transportation Agency Safety Plans. In addition, they are required to set annual targets for the four transit safety performance measures.

TRANSIT SAFETY PERFORMANCE MEASURES

FATALITIES	Total number of reportable fatalities and the rate per total vehicle revenue miles by mode
INJURIES	Total number of reportable injuries and the rate per total vehicle revenue miles by mode
SAFETY EVENTS (COLLISIONS, DERAILMENTS, FIRES, OR LIFE SAFETY EVACUATIONS)	Total number of reportable events and the rate per total vehicle revenue miles by mode
SYSTEM RELIABILITY	Mean distance between major mechanical failures by mode

TRANSIT SAFETY FOR THE NATIONAL CAPITAL REGION

The following providers of public transportation in the region are required to set transit safety targets in accordance with the PBPP requirements. These targets are required for each mode operated by the provider, including heavy rail, streetcar, commuter bus, bus, paratransit (demand response), and vanpool.

Regional recipients of FTA Section 5307 (urbanized area) funding and the modes they operate:

- WMATA: Metrorail, Metrobus, MetroAccess
- DDOT: DC Circulator, DC Streetcar
- MDOT-MTA: MTA Commuter Bus
- PRTC OmniRide: commuter bus, local bus, paratransit, vanpool

Regional sub-recipients of FTA Section 5307 funding, including:

- VanGo (Charles Co.)
- TransIT (Frederick Co.)
- Ride On (Montgomery Co.)
- The Bus (Prince George's Co.)

Note that while local bus systems in Suburban Maryland are sub-recipients of FTA funds through the State of Maryland's Locally Operated Transit systems (LOTS) funding programs, the local bus systems operated by jurisdictions in Northern Virginia do not receive federal funds and the PTASP rule is not applicable to them. In addition, commuter rail systems MARC and VRE have their safety regulated by the Federal Railroad Administration (FRA) and the PTASP rule does not apply to them.

CALCULATION OF REGIONAL SAFETY TARGETS

Targets for the region are based on those adopted or identified for each applicable provider of public transportation in the region. Measures are calculated for each mode:

- Number of Fatalities/Serious Injuries/Incidents – total number for all providers of that mode.
- Rate of Fatalities/Serious Injuries/Incidents – total number for all providers of the mode divided by the total number of Vehicle Revenue Miles (VRM) for that mode (reported in rate per 100,000 VRM).
- Mean Distance Between Failure (MDBF) – the total number of VRM for that mode divided by the total number of failures for all providers of the mode.

2021 REGIONAL TRANSIT SAFETY TARGETS – DRAFT

Based on the targets adopted or in the process of being adopted by each provider of public transportation, the following set of transit safety targets is proposed as draft targets for the region for 2021.

2021 Regional Transit Safety Targets – DRAFT

	Fatalities		Serious Injuries		Safety Events		Reliability
	Number	Rate	Number	Rate	Number	Rate	MDBF
Heavy Rail (HR)*	0	0	244	0.31	84	0.11	254,000
Streetcar Rail (SR) *	0	0	0	0.00	4	0.27	672
Urban Bus (MB)*	0	0	411	0.69	463	0.78	13,654
Commuter Bus (CB)	0	0	6	0.07	20	0.23	13,265
Demand Response (DR)	0	0	40	0.19	18	0.08	0
Vanpools (VP)	0	0	6	0.05	118	1.05	9500

Rate - Per 100,000 Vehicle Revenue Miles MDBF = Mean Distance Between Failures

* Includes preliminary measures not yet finalized by a provider



2021 TRANSIT AGENCY SAFETY TARGETS – DRAFT

Performance-Based Planning and Programming

Eric Randall
TPB Transportation Engineer

Transportation Planning Board
October 20, 2021



Presentation Items

- Transit Agency Safety Plans Rule
- Transit Safety Performance Measures
- Applicability
- Calculation of Regional Targets
- 2021 Regional Transit Safety Targets – **DRAFT**
- Adopted 2020 Regional Targets
- Next Steps



Federal Requirement – Transit Agency Safety Plans

- Federal Performance Based Planning and Programming (PBPP) regulations requires applicable providers of public transportation to develop and certify an agency safety plan
- Applicable transit providers are required to annually set targets for four (4) Transit Safety performance measures,
 - First annual targets adopted by transit providers in 2020, though could be waived due to pandemic
- MPOs have 180 days following to adopt Transit Safety targets for the metropolitan planning area (i.e., regional targets)



Transit Safety Performance Measures

	Performance Measures
Fatalities	Total number of reportable fatalities and the rate per total vehicle revenue miles by mode
Injuries	Total number of reportable injuries and the rate per total vehicle revenue miles by mode
Safety Events*	Total number of reportable events and the rate per total vehicle revenue miles by mode
System Reliability	Mean distance between major mechanical failures by mode

*Collisions, derailments, fires, or life safety evacuations



Applicable Regional Agencies

- Transit safety requirements apply to providers of public transportation that are recipients and sub-recipients of federal Section 5307 funding under FTA regulation
 - WMATA: Metrorail, Metrobus, MetroAccess
 - DDOT: DC Circulator, DC Streetcar
 - MDOT-MTA: MTA Commuter Bus
 - PRTC: Bus and paratransit
 - and local systems in Suburban Maryland:
 - VanGo (Charles Co.)
 - TransIT (Frederick Co.)
 - Ride On (Montgomery Co.)
 - The Bus (Prince George's Co.)



Calculation of Regional Safety Targets

Targets for the region based on those adopted or identified by each provider of public transportation

Measures are calculated for each mode:

- Number of Fatalities/Serious Injuries/Incidents – total number for all providers of that mode
- Rate of Fatalities/Serious Injuries/Incidents – total number for all providers of the mode divided by the total number of Vehicle Revenue Miles (VRM) for that mode (reported in rate per 100,000 VRM)
- Mean Distance Between Failure (MDBF) – the total number of VRM for that mode divided by the total number of failures for all providers of the mode

2021 Regional Transit Safety Targets - **DRAFT**

Draft targets for the region based on the adopted or preliminary measures for each mode

	Fatalities		Serious Injuries		Safety Events		Reliability
	Number	Rate	Number	Rate	Number	Rate	MDBF
Heavy Rail (HR)*	0	0	244	0.31	84	0.11	254,000
Streetcar Rail (SR) *	0	0	0	0.00	4	0.27	672
Urban Bus (MB)*	0	0	411	0.69	463	0.78	13,654
Commuter Bus (CB)	0	0	6	0.07	20	0.23	13,265
Demand Response (DR)	0	0	40	0.19	18	0.08	0
Vanpools (VP)	0	0	6	0.05	118	1.05	9,500

Rate - Per 100,000 Vehicle Revenue Miles

MDBF = Mean Distance Between Failures

* Includes preliminary measures not yet finalized by a provider



Adopted 2020 Regional Transit Safety Targets

Adopted by the TPB on November 18, 2020

Mode	Fatalities		Serious Injuries		Safety Events		Reliability
	Number	Rate	Number	Rate	Number	Rate	MDBF
Heavy Rail (HR)	0	0	324	0.38	95	0.11	7,000
Streetcar Rail (SR)	0	0	3	2.28	2	3.80	10,000
Urban Bus (MB)	0	0	452	0.74	602	0.98	21,645
Commuter Bus (CB)	0	0	12	0.19	185	3.00	11,593
Demand Response (DR)	0	0	69	0.00	207	0.97	48,422

Rate - Per 100,000 Vehicle Revenue Miles

MDBF = Mean Distance Between Failures



Observations

- Actual safety data is submitted by all transit providers in the region to the FTA's National Transit Database. Outcomes in 2020 were affected by reduced operations during the pandemic
 - Fatalities: 3 on Heavy Rail; 2 on Urban Bus
 - Serious Injuries: 11 on Heavy Rail; none on Urban Bus
 - Safety Events: up on Heavy Rail; down on Urban Bus
- For the 2021 targets
 - Added new mode: Vanpools
 - Zero fatalities for all modes: no change
 - Setting improved (lower) targets for Serious Injuries, Safety Events, Reliability (MDBF) for most modes



Next Steps

- Take any comments on draft regional transit safety targets
- November 17 – TPB adopt final regional transit safety targets

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National Capital Region
Transportation Planning Board

REGIONAL TARGETS FOR TRANSIT SAFETY

Performance-Based Planning and Programming

2021 Report - **DRAFT**



National Capital Region
Transportation Planning Board

Regional Targets for Transit Safety – 2021 Report Draft

September 24, 2020

ABOUT THE TPB

The National Capital Region Transportation Planning Board (TPB) is the federally designated metropolitan planning organization (MPO) for metropolitan Washington. It is responsible for developing and carrying out a continuing, cooperative, and comprehensive transportation planning process in the metropolitan area. Members of the TPB include representatives of the transportation agencies of the states of Maryland and Virginia and the District of Columbia, 23 local governments, the Washington Metropolitan Area Transit Authority, the Maryland and Virginia General Assemblies, and nonvoting members from the Metropolitan Washington Airports Authority and federal agencies. The TPB is staffed by the Department of Transportation Planning at the Metropolitan Washington Council of Governments (COG).

CREDITS

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Jurisdictional and transit agency staff from across the region.

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Executive Summary – 2021 Regional Transit Safety Targets

This report presents the transit safety targets developed for the region for adoption by the National Capital Region Transportation Planning Board (TPB) for 2021. The setting of annual transit safety targets is one of the requirements of the performance-based planning and programming (PBPP) rulemakings enacted by the federal government in accordance with the MAP-21 and FAST Act surface transportation acts. Once applicable providers of public transportation have each set their transit safety targets, MPOs have 180 days to adopt transit safety targets for their metropolitan planning area to comply with requirements.

The final rulemaking Public Transportation Agency Safety Plan (PTASP) was published by FTA on July 19, 2018. The effective date of this rule was July 19, 2019, with one year for applicable providers of public transportation to implement the rulemaking, by July 19, 2020.

“This final rule requires States and certain operators of public transportation systems that receive Federal financial assistance under 49 U.S.C. Chapter 53 to develop Public Transportation Agency Safety Plans based on the Safety Management System approach. Operators of public transportation systems will be required to implement the safety plans. The development and implementation of safety plans will help ensure that public transportation systems are safe nationwide.”¹

The issuance of this final rulemaking served as a capstone for a collection of rules making up the Public Transportation Safety Program, including the National Public Transportation Safety Plan Rule which defined the four transit safety performance measures for which providers of public transportation and MPOs have to set targets.

The PTASP final rule applies to providers of public transportation that are recipients and sub-recipients of FTA Section 5307 funding and that fall under the safety jurisdiction of the Federal Transit Administration (FTA). Applicable providers of public transportation are required to develop Public Transportation Agency Safety Plans, which include the process and procedures for implementing Safety Management Systems (SMS), and certify their safety plan by July 20, 2020. In addition, they were required to set initial targets for the four transit safety measures by July 20, 2020 (thereafter annually), following which Metropolitan Planning Organizations (MPOs) must set transit safety targets for the metropolitan planning area within 180 days.

In response to the COVID-19 pandemic, on April 23, 2020 the FTA announced that it would give providers of public transportation more time to meet the requirements of the PTASP regulation. The regulation set July 20, 2020 as the deadline for providers of public transportation to certify that they have established a compliant agency safety plan. FTA announced it would provide relief by refraining from taking any enforcement action until December 31, 2020 against providers that are unable to meet the July 20, 2020 deadline. The rulemaking is in effect for 2021.

¹ <https://www.federalregister.gov/documents/2018/07/19/2018-15167/public-transportation-agency-safety-plan> p/ 34418

Overview of Performance-Based Planning and Programming Requirements

Under the Moving Ahead for Progress in the 21st Century Act (MAP-21) and reinforced in the Fixing America's Surface Transportation (FAST) Act, federal surface transportation regulations require the implementation of performance management requirements through which states and metropolitan planning organizations (MPOs) will “transition to a performance-driven, outcome-based program that provides for a greater level of transparency and accountability, improved project decision-making, and more efficient investment of federal transportation funds.”

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have gradually issued a set of rulemakings, initially proposed and subsequently final, for the implementation of this performance-based planning and programming (PBPP) process. Each rulemaking lays out the goals of performance for a particular area of transportation, establishes the measures for evaluating performance, specifies the data to be used to calculate the measures, and then sets requirements for the setting of targets. Following issuance of these rulemakings, the TPB and the region's state DOTs, and transit agencies (as required) have taken actions to address (or comply with) these rulemakings.

Under the PBPP process, states, MPOs, and providers of public transportation must link investment priorities to the achievement of performance targets in the following areas.

1. Highway Safety
2. Highway Assets: Pavement and Bridge Condition
3. System Performance (Interstate and National Highway System, Freight Movement on the Interstate System, and the Congestion Mitigation and Air Quality Improvement Program)
4. Transit Asset Management
5. Transit Safety

The final Statewide and Metropolitan Planning Rule, published May 27, 2016, provides overall direction and guidance on requirements for implementation of PBPP, including specified measures and data sources, forecasting performance, target-setting, documentation in the statewide and metropolitan long-range transportation plans and Transportation Improvement Programs (TIPs), and reporting requirements.

States will typically measure performance and set targets on a statewide basis, and providers of public transportation will measure performance and set targets for their transit system. Depending upon the area of performance, targets may be set annually, biennially, or every four years. States and providers of public transportation must also develop supporting strategic plans for monitoring and improving performance in order to achieve their selected targets. In addition to quantitative targets, periodic narrative reports on performance will also be required. Target-setting is intended to be based on an agency's strategic plan and science-based methodology for forecasting performance based on measured trends and the funding available and programmed for projects that will affect performance.

The MPO is responsible for collecting this information to calculate measures and set targets for the metropolitan planning area as appropriate. MPOs have up to 180 days to adopt targets following the targets being set by state DOTs or providers of public transportation. MPOs must coordinate with the state DOTs and providers of public transportation in setting the metropolitan area targets, which should be based on the strategic plans and funded projects of the cognizant agencies.

Introduction to Transit Safety Performance and Target Setting

This report presents the transit safety targets being adopted by the National Capital Region Transportation Planning Board (TPB) for 2021. The setting of annual transit safety targets is one of the requirements of the rulemaking for Public Transportation Agency Safety Plans (PTASP).

The PTASP rule was published in the Federal Register on July 19, 2018. The effective date of the rule was July 19, 2019, with one year following for implementation. Each applicable provider of public transportation is required to adopt a Public Transportation Agency Safety Plan implementing the principles of Safety Management Systems (SMS). In addition, annual targets for safety performance must be set.

Transit Safety for the National Capital Region

The following providers of public transportation in the region are required to set transit safety targets in accordance with the PBPP requirements. These targets are required for each mode operated by the provider, including heavy rail, streetcar, commuter bus, bus, and paratransit (demand response).

Regional recipients of FTA Section 5307 funding and the modes they operate include:

- WMATA: Metrorail, Metrobus, MetroAccess
- DDOT: DC Circulator, DC Streetcar
- MDOT-MTA: MTA Commuter Bus
- PRTC OmniRide: commuter bus, local bus, and paratransit

Regional sub-recipients of FTA Section 5307 funding include:

- VanGo (Charles Co.)
- TransIT (Frederick Co.)
- Ride On (Montgomery Co.)
- The Bus (Prince George's Co.)

Note that while local bus systems in Suburban Maryland are sub-recipients of FTA funds through the State of Maryland's Locally Operated Transit systems (LOTS) funding programs, the local bus systems operated by jurisdictions in Northern Virginia do not receive federal funds and the PTASP rule is not applicable to them. In addition, commuter rail systems including MARC and VRE have their safety regulated by the Federal Railroad Administration (FRA) and the PTASP rule does not apply to them.

CALCULATION OF REGIONAL SAFETY TARGETS

Targets for the region are based on those adopted by each provider of public transportation.

Measures are calculated for each mode:

- Number of Fatalities/Serious Injuries/Safety Events: total number for all providers of that mode.
- Rate of Fatalities/Serious Injuries/Safety Events: total number for all providers of the mode divided by the total number of Vehicle Revenue Miles (VRM) for that mode (reported in rate)

per 100,000 VRM). VRM are the miles that vehicles are scheduled to be or actually traveled while in revenue service (i.e., doors open to customers, from first stop to last stop).

- Mean Distance Between Failure (MDBF): the total number of VRM for that mode divided by the total number of failures for all providers of the mode.

Figure 1 – Transit Safety Performance Measures

	Performance Measures
Fatalities	Total number of reportable fatalities and the rate per total vehicle revenue miles by mode
Injuries	Total number of reportable injuries and the rate per total vehicle revenue miles by mode
Safety Events*	Total number of reportable events and the rate per total vehicle revenue miles by mode
System Reliability	Mean distance between major mechanical failures by mode

The draft targets calculated for the region for the performance measures – for each mode of public transportation in the region – are shown in Figure 3.

Figure 2 – Draft 2021 Regional Transit Safety Targets

	Fatalities		Serious Injuries		Safety Events		Reliability
	Number	Rate	Number	Rate	Number	Rate	MDBF
Heavy Rail (HR)*	0	0	244	0.31	84	0.11	254,000
Streetcar Rail (SR) *	0	0	0	0.00	4	0.27	672
Urban Bus (MB)*	0	0	411	0.69	463	0.78	13,654
Commuter Bus (CB)	0	0	6	0.07	20	0.23	13,265
Demand Response (DR)	0	0	40	0.19	18	0.08	0
Vanpools (VP)	0	0	6	0.05	118	1.05	9500

Rate - Per 100,000 Vehicle Revenue Miles MDBF = Mean Distance Between Failures

Figure 3 – 2020 Regional Transit Safety Targets Adopted by the TPB on November 18, 2020

Mode	Fatalities		Serious Injuries		Safety Events		Reliability
	Number	Rate	Number	Rate	Number	Rate	MDBF
Heavy Rail (HR)	0	0	324	0.38	95	0.11	7,000
Streetcar Rail (SR)	0	0	0	0.0	4	0.27	672
Urban Bus (MB)	0	0	462	0.75	660	1.08	20,660
Commuter Bus (CB)	0	0	12	0.19	185	3.00	11,593
Demand Response (DR)	0	0	69	0.32	207	0.97	48,422

Rate - Per 100,000 Vehicle Revenue Miles MDBF = Mean Distance Between Failures

Additional Data - Transit Safety Data for the Region

In addition to the PBPP transit safety targets, the FTA collects safety and security data monthly from urban reporting transit systems through a module of the National Transit Database (NTD)². Definitions and criteria have some differences as well as more detail than the information used for developing the regional transit safety performance measures targets. All of the transit providers in the region report to the database, including the local bus systems in Northern Virginia. Figure 4 shows data for fatalities, injuries, and safety events for the years 2017 through 2020 from this database. This information is provided to assist in a regional review of safety on all transit systems irrespective of the federal requirements associated with PBPP.

² <https://www.transit.dot.gov/ntd/data-product/safety-security-time-series-data>

Figure 4 – NTD Safety & Security Time Series Data for the Region (2017-2020)

	# Fatalities				# Serious Injuries				# Safety Events			
	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
Heavy Rail (HR)												
Metrorail	0	3	2	3	50	56	85	11	68	86	99	237
Streetcar Rail (SR)												
DC Streetcar	0	0	0	0	10	0	0	0	1	0	0	0
Urban Bus (MB)												
Metrobus	0	0	0	1	363	351	349	0	211	270	270	213
DASH	0	0	0	0	0	0	0	0	0	0	0	6
ART	0	0	0	0	7	3	7	0	11	4	14	4
CUE	0	0	0	0	0	0	0	0	0	0	0	0
Fairfax Connector	0	0	0	1	15	10	24	0	11	23	38	26
Transit	0	0	0	0	0	0	2	0	0	0	1	4
VanGo	0	0	0	0	10	7	2	0	5	2	1	3
Ride On	1	1	0	0	58	47	30	0	39	57	44	43
The Bus	1	1	0	0	13	30	16	0	28	37	15	3
PRTC/OmniRide	0	0	0	0	1	0	1	0	1	1	2	1
Loudoun	0	0	0	0	1	0	2	0	2	0	3	0
DC Circulator	0	0	0	0	2	3	0	0	2	1	0	0
TOTAL	2	2	0	2	470	451	433	0	310	395	388	303
Commuter Bus (CB)												
MTA Commuter Bus	0	0	0	0	1	0	0	0	1	0	0	0
PRTC/OmniRide	0	2	0	0	7	4	0	0	9	8	2	0
Loudoun	0	0	0	0	1	1	1	0	1	3	7	1
TOTAL	0	2	0	0	8	4	0	0	10	8	2	0
Demand Response (DR)												
MetroAccess	0	0	0	0	50	28	20	0	33	20	17	19
Charles County	0	0	0	0	0	0	0	0	0	0	0	0
Frederick County	0	0	0	0	1	0	0	0	1	0	0	0
Prince George's County	0	0	0	0	1	0	2	0	2	0	3	0
PRTC				0				0				0
TOTAL	0	0	0	0	52	28	22	0	36	20	20	19
Vanpools (VP)												
PRTC	0	0	0	0	0	0	0	0	0	1	0	0