State of Rhode Island

Performance Measures and Targets

State Transportation Improvement Program FFY 2018-2027

Appendix B

Adopted by the Rhode Island State Planning Council on August 29, 2019

RHODE ISLAND
STATEWIDE
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PROGRAM

Introduction

The 2012 surface transportation authorization Moving Ahead for Progress in the 21st Century Act (MAP-21), which was upheld by the 2015 Fixing America's Surface Transportation Act (FAST Act) directed Metropolitan Planning Organizations (MPOs) to develop Long Range Transportation Plans (LRTPs) and State Transportation Improvement Programs (STIPs) through a "performance-driven, outcome-based approach to planning." It required state Departments of Transportation, MPOs, and operators of public transportation to establish targets for performance measures in key areas, and to coordinate with one another when setting these targets.

The Federal Highway Administration (FHWA) now requires DOTs and MPOs to adopt performance targets for defined measures for the following national goal areas:

- Safety
- Infrastructure Condition
- System Reliability
- Freight Movement & Economic Vitality
- Congestion Reduction

The Rhode Island State Planning Council (RISPC), as MPO for the State of Rhode Island, has established targets in the areas of Safety, Pavement and Bridges, System Performance and Transit Asset Management as required by the U.S. Department of Transportation (USDOT). Rhode Island is not required to adhere to total emissions reduction as required in the Environmental Sustainability National Goal.

Federal Requirements

There are two primary federal requirements for incorporating performance management into the STIP. For all federally required targets, the State of Rhode Island must show that the STIP "makes progress towards achieving the performance targets" and that the STIP includes, "to the maximum extent practicable, a description of the anticipated effect of the STIP towards achieving the performance targets" (23 CFR§ 450.326).

The State of Rhode Island is required to demonstrate that project investments are being used to help meet performance targets and quantify the extent to which the investments are expected to assist in reaching those targets.

This Performance Measure and Target Appendix B is broken down by goal area as listed above and the supporting performance measures with each section provide the following information:

- ***Performance Measures***
  This includes an overview of the national goal areas and each of the federally-required metrics for that goal, a summary of the target setting process and Rhode Island's most recent established targets.

- ***Performance Assessment***
  Each goal area includes an overall assessment of the anticipated impact of the FFY2018-2027 STIP on achieving performance targets and a discussion of related efforts related to specific targets.

The chart below summarizes performance measures and provides target adoption status.

Table 1 -- Performance Measures and Targets for STIP Inclusion

Goal Area	Measures	Target Setting Status
Safety Performance	Number of fatalities Rate of fatalities per 100 vehicle miles traveled; Number of serious injuries; Rate of serious injuries per 100 vehicle miles traveled; Number of nonmotorized fatalities and nonmotorized serious injuries combined	2019 Safety Targets Adopted by the State Planning Council on February 14, 2019
Pavement and Bridge Asset	Percent NHS Bridges in good and poor condition; NHS Bridge 2- and 4-Year Target percent in good and poor condition; Percent Interstate pavement in good and poor condition; Percent Non-Interstate NHS pavement in good and poor condition; Interstate NHS 4-Year Target percent in good and poor condition; Non-Interstate NHS 2- and 4-Year Target percent in good and poor condition	2020 and 2022 Pavement and Bridge Targets Adopted by the State Planning Council on October 11, 2018
System Performance and Freight	Interstate travel time reliability; Non-Interstate travel time reliability; Truck travel time reliability	2019 and 2021 System Performance and Freight Targets Adopted by the State Planning Council on November 8, 2018
Congestion Mitigation and Air Quality	Peak hour excessive delay per capita; Percent of non-single occupancy vehicle travel; Total emissions reduction	Not Applicable for Rhode Island during this performance period
Transit Asset Management	Transit Asset Management (TAM) Plans (rolling stock, equipment, facilities, infrastructure);	2020 and 2022 TAM Targets Adopted by the State Planning Council on March 14, 2019

Safety Performance

The Rhode Island Strategic Highway Safety Plan (SHSP) guides the State's efforts in outlining broad long-term goals for safety to achieve zero fatalities. The SHSP is a five-year plan led by RIDOT and is reviewed annually. The goal of the Rhode Island Strategic Highway Safety Plan is for Rhode Island to continue to move "Toward Zero Deaths" and halving serious injuries by 2027.

Traffic Safety project programming in the STIP is based on meeting established goals using a data-driven analysis to determine if current investments are yielding the results in the State's SHSP and for the federally required performance targets.

Performance Measures and Targets: Safety

In addition to the SHSP, the State of Rhode Island establishes Highway Safety Improvement Program (HSIP) safety targets and reports them for the upcoming calendar year in the HSIP annual report that is submitted to FHWA by September 30th each year. Targets are applicable to all public roads, regardless of functional classification or ownership.

The targets established for number and rate of fatalities, and number of serious injuries must be identical to those established for the National Highway Transportation Safety Agency (NHTSA) Highway Safety Grant program in the annual Highway Safety Plan. The Rhode Island MPO has chosen to adopt and support the safety targets set by the RIDOT. On February 14, 2019 the Rhode Island State Planning Council adopted safety performance targets for the five categories of fatality and serious injury data represented in the table below.

Table 2 -- Safety Performance Measures and Targets

Safety Measure	CY 2017 Baseline	CY 2019 Target
Number of fatalities	59	57
Rate of fatalities per 100 million VMT	0.751	0.720
Number of serious injuries	392	369
Rate of serious injuries per 100 million VMT	5.005	4.710
Number of non-motorized-fatalities and non-motorized serious injuries	86.6	85

Performance Assessment: Safety

The FFY2018-2027 STIP includes a myriad of projects that will help RIDOT meet its Safety Performance Targets, including the follow notable line items:

- **9609 – Roadway Departure Mitigation**
  Vehicles departing their lane and/or roadway contribute to more than one-third of fatalities and serious injuries on Rhode Island roads. In this STIP, $33M is allocated to making improvements to keep vehicles from departing the roadway and minimize the crash severity if they do depart their lane. Most of the improvements RIDOT incorporates are part of FHWA's Proven Safety Countermeasures list which projects a 25% decrease in roadway departure crashes.

- **9601 – Intersection Safety Improvements**
  More than 25% of fatalities and serious injuries on Rhode Island roads involve a vulnerable road user (pedestrian and/or bicyclist). This STIP includes $30M for improvements at signalized and unsignalized intersections and mid-block crossings. In addition to mitigating severe vehicle crashes at intersections, these projects will enhance the visibility of pedestrians at crossings while increasing driver compliancy.

  Most of the improvements RIDOT incorporates are part of FHWA's Safe Transportation for Every Pedestrian (STEP) EDC initiative as well as their Proven Safety Countermeasures list. With the implementation of these improvements, intersection-related severe crashes are project to decrease by as much as 20%, and crashes involving vulnerable users at crossings are projected to de crease by as much as 35%.

Safety improvements are also incorporated into other projects throughout the STIP, most notably major bridge and pavement projects. Line items located in those programs which are likely to generate positive safety impacts include **Bridge Group 75T 5B (I)**, which will replace the Providence I-95 Northbound Viaduct, including safety improvements that will reduce conflicting weaves and congestion.

Pavement and Bridge Asset Performance

The Pavement and Bridge Condition Performance Measures Final Rule, effective May 20, 2017, establishes six measures to monitor to carry out the National Highway Performance Program (NHPP). The overall goal of these performance areas is to improve the condition of existing pavement and bridge assets.

States are required to establish 2-year and 4-year targets for Pavement Condition and Bridge Condition reporting progress on a biennial basis beginning in May 2018. MPOs are required to establish 4-year targets for those same measures within 180 days of the DOT's target setting.

MPOs have the option to support the DOT's targets or to establish their own for each of the pavement and bridge measures. The Rhode Island State Planning Council has chosen to adopt and support the bridge and pavement targets set by RIDOT.

Pavement Condition Targets

RIDOT's pavement-specific asset management objective is to maximize the usable life of pavement structures through innovative design, timely preservation, and regular maintenance. The table below details the performance targets associated with each pavement type.

Table 3 -- Pavement Condition Measures and Targets

	Measure	Pavement Condition	Baseline (% in 2018)	2-Year Target (% in 2020)	4-Year Target (% in 2022)
All State-Owned Pavement	HPMS	Good	22.00%	24.10%	23.20%
		Fair	66.90%	64.80%	65.50%
		Poor	11.10%	11.10%	11.30%
Interstate NHS	HPMS	Good	55.05%	-	55.00%
		Fair	44.95%	-	41.00%
		Poor	0.00%	-	4.00%
Non-Interstate NHS	HPMS	Good	21.80%	10.00%	10.00%
		Fair	37.40%	70.00%	70.00%
		Poor	40.80%	20.00%	20.00%
All Other NHS Owners	HPMS	Good	4.39%	0.00%	0.00%
		Fair	72.74%	40.00%	30.00%
		Poor	22.87%	60.00%	70.00%

Bridge Condition Targets

According to the FHWA, Rhode Island's bridges rank worst in the nation. For this reason, the central focus of the RhodeWorks program is to use a data-driven, asset management-based protocol to update the State's entire bridge inventory to a state of good repair. Bridge conditions are determined by the lowest rating of the deck, superstructure, substructure, or culvert, rated on a 0 to 9 scale. If any component of a bridge is in "poor" condition-designated by a rating of 4 or lower-the entire bridge is assigned a rating of "Poor".

In October 2018, RIDOT established performance targets for bridges on the National Highway System (NHS) classified in Good and Poor condition, as required under MAP-21 and the FAST Act. Those targets are reported below, along with additional information for all RIDOT bridges.

Table 4 -- Bridge Condition Measures and Targets

	Bridge Condition Classification	Baseline (% as of 2018)	2-Year Target (% in 2020)	4-Year Target (% in 2022)
National Bridge Inventory - NHS	Good	13.10%	14.00%	16.00%
	Fair	63.00%	60.00%	63.00%
	Poor	24.00%	26.00%	21.00%
All RIDOT Bridges	Good	22.21%	Not Available	
	Fair	58.21%		
	Poor	19.57%		

State of Good Repair Targets

While there is no national standard for a State of Good Repair, RIDOT has developed asset-specific definitions in coordination with FHWA. For the purposes of RIDOT's 2019 Transportation Asset Management Plan (TAMP), RIDOT defined assets in a state of good repair as "pavement or bridge in fair or good condition."

For an inventory of assets to be considered in a State of Good Repair, RIDOT must meet its targets for network condition for the network to achieve a State of Good Repair. The Table 5, on the next page, summarizes the asset- and inventory-level state of good repair targets for bridges and pavement.

Table 5 -- Bridge and Pavement State of Good Repair Targets

Asset Class	State of Good Repair Criteria Individual Asset Level	State of Good Repair Criteria Asset Class Inventory Level
Bridge	"Good" rating (7 or higher) for all bridge components	No more than 10% of bridges rated "Poor."
Pavement	PSHI rating of 70 or higher, which is an HPMS rating of "Fair."	No more than 20% of all non-Interstate NHS pavement rated "Poor" by HPMS. Less than 4% of all Interstate NHS rated poor by HPMS

Performance Assessment: Bridge and Pavement Conditions

The figures below present three **performance scenarios:**

1. **Optimal Performance,** a scenario which prioritizes achieving and maintaining a state of good repair for **all** bridge assets, and **only NHS** pavement assets;
2. **Planned Performance,** a scenario which reflects the Department's currently planned and projected investment levels between 2018 and 2027; and
3. **Deteriorating Performance,** a scenario which reflects an investment level that would allow the conditions of the state's bridge and pavement network to deteriorate so rapidly that RIDOT's investments do not meaningfully impact network-level asset conditions.

As shown in the figures below, the planned and projected investment levels in the FFY 2018-2027 STIP allows the State to maintain its Pavement condition performance for all NHS assets. In addition, currently planned investment levels will allow Rhode Island to reach its 90% bridge sufficiency target by 2025.

Figure 1 -- Pavement Performance Scenarios

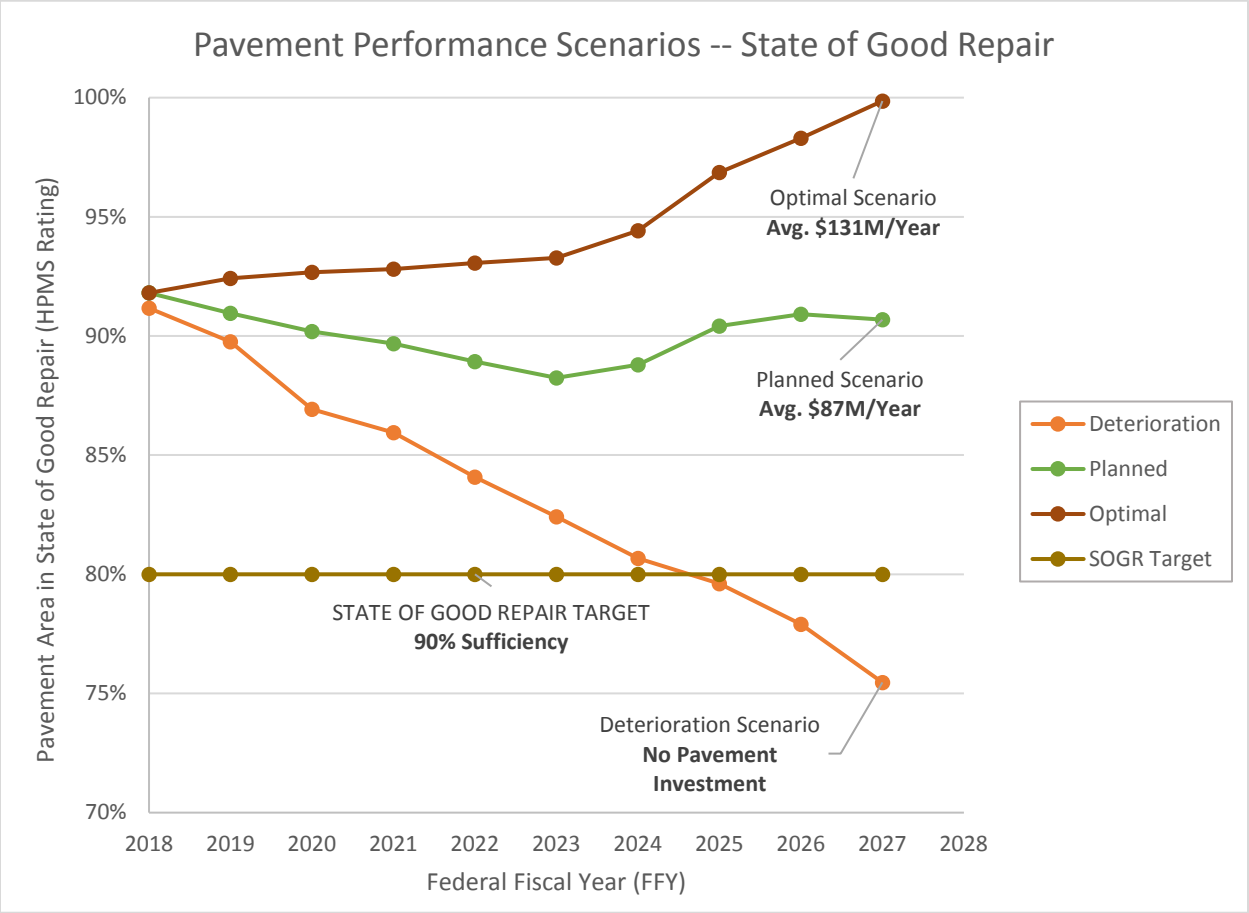
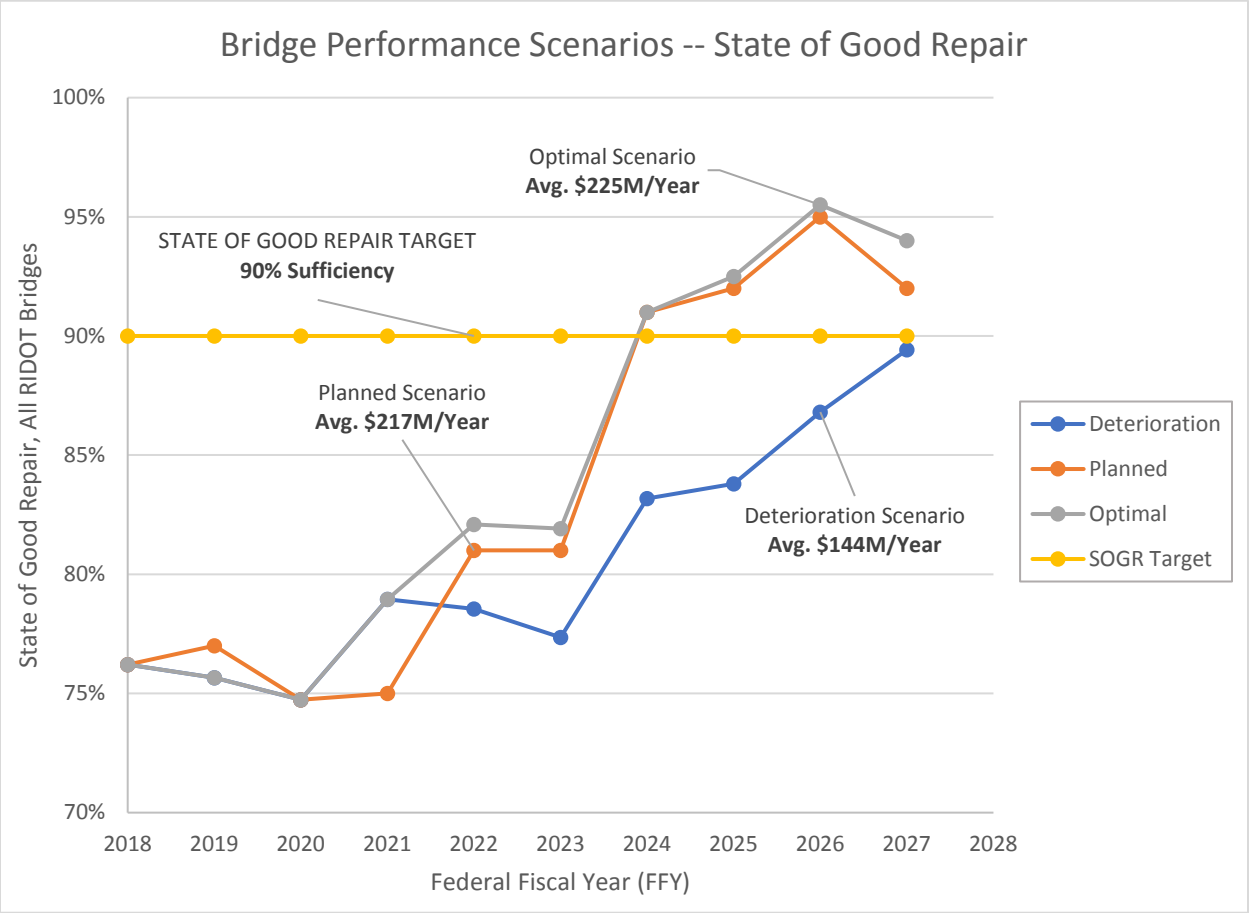


Figure 2 -- Bridge Performance Scenarios as of July 2019



System Performance Measures

The System Performance Final Rule, effective, May 20, 2017, establishes six measures in three performance areas to carry out the National Highway Performance Program (NHPP), the National Highway Freight Program (NHFP), and Congestion Mitigation and Air Quality Program (CMAQ). The overall goal of these performance areas is to promote effective use of Federal transportation funds in addressing congestion and highway capacity needs, as well as reducing emissions from the transportation system.

The CMAQ emissions reduction measure is applicable only to those areas designated as nonattainment or maintenance for ozone, carbon monoxide or particulate matter. The CMAQ traffic congestion measures are applicable only to those nonattainment areas that are also in urbanized areas of over 1 million people. Rhode Island does not need to comply with these requirements.

Performance Measures and Targets: System

On November 8, 2018, the Rhode Island State Planning Council approved and adopted the following System Performance targets set by RIDOT and presented to the MPO as shown in Table 6 below. The targets were developed using the Rhode Island Statewide Model (RISM). Reliability targets do decrease from the 2017 baseline in upcoming years. The influencing factors on that trend include socioeconomic changes, the number of incidents on highways, on-going highway construction projects which impact highway capacity, number of work zones involving lane closures, and precipitation levels in Rhode Island.

Table 6 -- System Performance Measures

System Performance Measures	CY 2017 Baseline	CY 2019 Target	CY 2021 Target
Percent of Person-Miles Traveled on Interstate NHS that is Reliable	78.2%	71.1%	71.2%
Percent of Person-Miles Traveled on Non-Interstate That is Reliable	86.5%	77.6%	77.3%
Truck Travel Time Reliability	1.72	1.94	1.96

Performance Assessment: System

Several projects of regional significance are scheduled for completion in the FFY 2018-2027 STIP that will contribute to RIDOT's continued pursuit of system performance improvements within the ten-year period covered by this STIP. Notable contributing projects include:

- **Bridge Group 75T 5B (I):** The Providence Viaduct I-95 Northbound Project will generate significant travel time savings for thousands of daily users. As a result of this project, all three performance measures above will likely improve.
- **Route 6/10 Project:** The reconstruction of this pivotal interchange will impact travelers throughout the Providence metropolitan region, improving traffic flows, reducing congestion, and improving travel time reliability.
- **Bridge Group 57TB:** The rehabilitation of the northern span of the Washington Bridge, which carries I-195 Westbound, this project will reduce congestion between Providence and the Massachusetts state line, improving access to I-95 North- and Southbound.
- **Reconstructing the Pell Bridge Approaches:** This two-phase project will reconfigure the ramps connecting Newport to the Pell Bridge, a critical East-West gateway for residents of Aquidneck Island and the surrounding area. This project will also reduce congestion and improve traffic flows.

The figures below show system performance by month from 2017 through June 2019. The source of these measures is the NPMRDS travel time dataset.

Figure 3 -- Interstate Reliability Performance

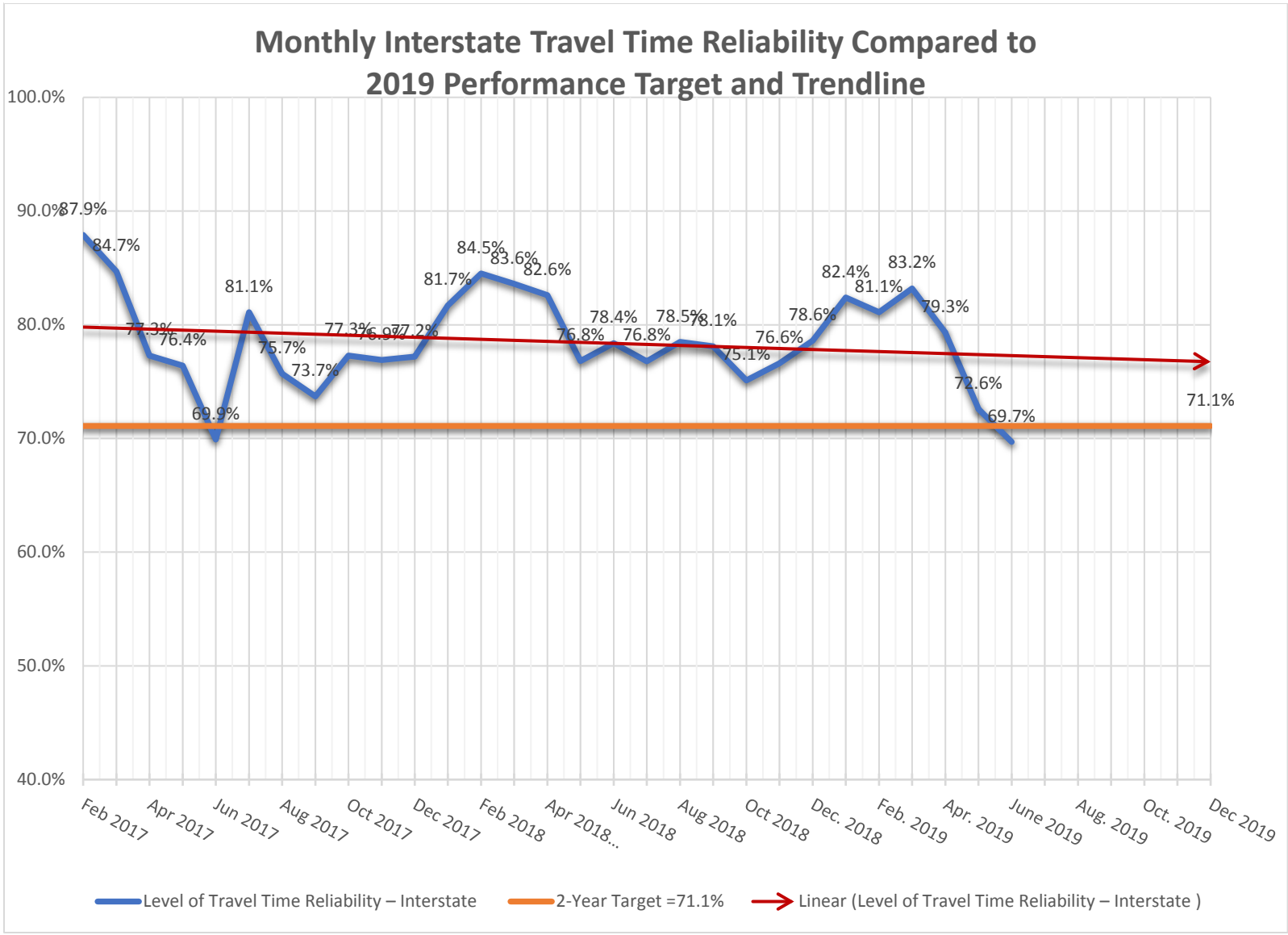


Figure 4 – Non-Interstate Reliability Performance

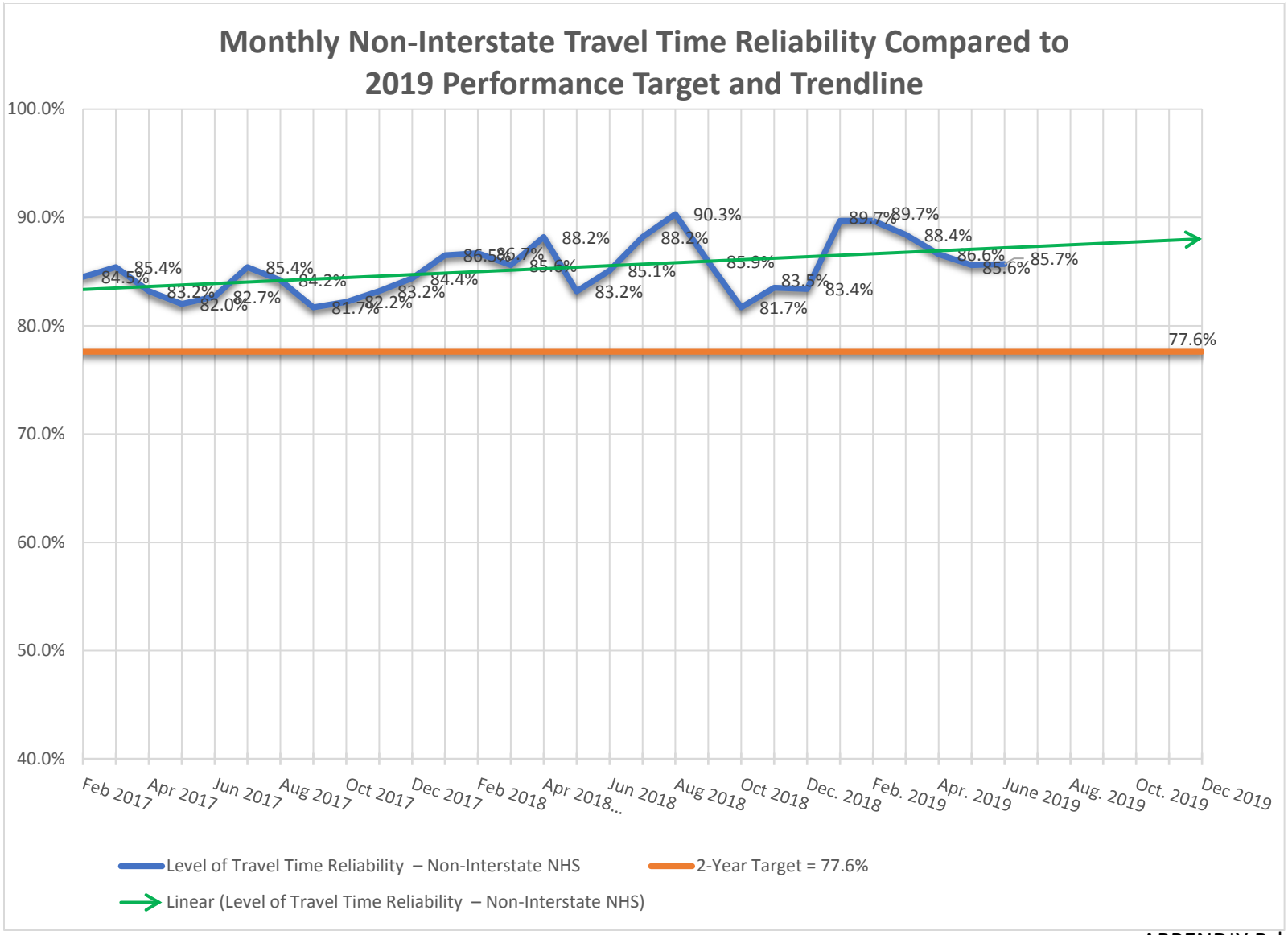
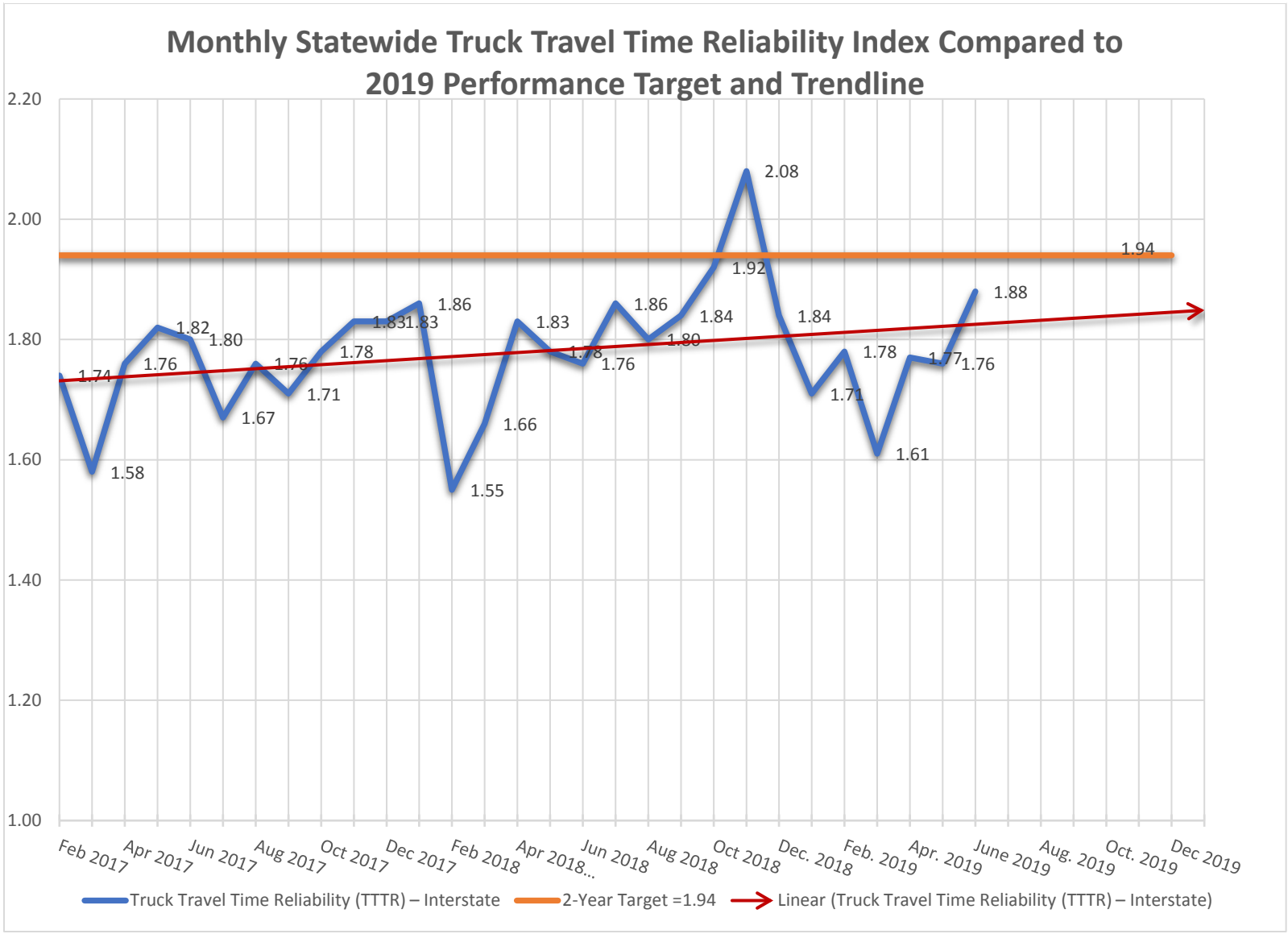


Figure 5 -- Truck Travel Time Reliability Performance



Transit Asset Management Measures

MAP-21 and the FAST Act mandated the Federal Transit Administration (FTA) to develop a rule establishing a strategic and systematic process of operating, maintaining, and improving public capital assets effectively through their entire life cycle. The Transit Asset Management (TAM) Final Rule 49 CFR part 625 became effective Oct. 1, 2016 and established four performance measures. The performance management requirements outlined in 49 CFR 625 Subpart D are a minimum standard for transit operators. Providers with more data and sophisticated analysis expertise are allowed to add performance measures and utilize those advanced techniques in addition to the required national performance measures, which include the following:

1) Rolling Stock - means a revenue vehicle used in providing public transportation, including vehicles used for carrying passengers on fare-free services.
2) Equipment - means an article of non-expendable, tangible property has a useful life of at least one year.
3) Facilities - means a building or structure that is used in providing public transportation.
4) Infrastructure - means the underlying framework or structures that support a public transportation system.

The goal of the Transit Asset Management performance measures is to maintain and improve transit assets in Rhode Island.

Performance Measures and Targets: Transit Asset Management

For each asset category, the performance measure is a characterization of the percentage of the number of assets that are not in a state of good repair. For facilities, the performance measure is the percentage of facilities within an asset class, rated below condition 3 on the Transit Economic Requirements Model (TERM) scale. For equipment and rolling stock, the performance measure is the percentage of vehicles that have met or exceeded their useful life benchmark (ULB).

The Rhode Island State Planning Council approved and adopted on March 14, 2019 the Transit Asset Management targets set by RIPTA and presented to the MPO as shown in Table 7 on the following page.

Table 7. Transit Asset Management Measures and Targets

Transit Asset Management Measure	2018 Baseline	2020 Target	2022 Target
Facilities- Admin/Maintenance. The percentage of facilities that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale	**20%**	**0%**	**0%**
Facilities – Passenger and Parking. The percentage of facilities that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale	**100%**	**0%**	**0%**
Rolling Stock – Bus. The percentage of revenue vehicles (by type) that exceed the useful life benchmark (ULB)	**16%**	**16%**	**2%**
Rolling Stock – Cutaway Bus (Paratransit). The percentage of revenue vehicles (by type) that exceed the useful life benchmark (ULB)	**48%**	**48%**	**0%**
Rolling Stock – Cutaway Bus (Flex). The percentage of revenue vehicles (by type) that exceed the useful life benchmark (ULB)	**35%**	**35%**	**35%**
Equipment. The percentage of non-revenue service vehicles (by type) that exceed the UBL.	**40%**	**51%**	**60%**

Performance Assessment: Transit Asset Management

The Transit Asset Management rule requires Transit Agencies to set targets for their assets by January 1, 2017 for the following fiscal year, and MPOs to set regional targets 180 days after that. The targets deal with 4 broad areas of asset categories; Equipment, Rolling Stock, Infrastructure, and Facilities.

Recipients of public transit funds—which can include states, local authorities, and public transportation operators—are required to establish performance targets for safety and state of good repair; to develop transit asset management and transit safety plans; and to report on their progress toward achieving targets. Public transportation operators are directed to share information with the Division of Statewide Planning and the RIDOT so that all plans and performance reports are coordinated.

In Rhode Island, the Rhode Island Public Transit Authority (RIPTA) is the authorized public transit provider for the state for bus services. RIPTA is responsible for setting performance targets. The

Rhode Island State Planning Council, as the MPO, can then choose to adopt the same or different targets.

The table below identifies performance measures outlined in the National Public Safety Transportation Plan, released by the **Federal Transit Administration (FTA)**, and in the final rule for transit asset management.

Table 8. National Public Safety Transportation Plan Performance Measures

NATIONAL GOAL	TRANSIT PERFORMANCE AREA OF ASSET CATEGORY	PERFORMANCE MEASURE	RIPTA PERFORMANCE TARGET	RIPTA ADOPTION DATE	TARGET SETTING CYCLE
Safety	Fatalities	Total number of reportable* fatalities and rate per total vehicle revenue miles by mode	TBD	TBD	Annual
	Injuries	Total number of reportable* injuries and rate per total vehicle revenue miles by mode	TBD	TBD	Annual
	Safety Events	Total number of reportable* events and rate per total vehicle revenue miles by mode	TBD	TBD	Annual
	System Reliability	Mean distance between major mechanical failures by mode	TBD	TBD	Annual
Infrastructure Condition	Equipment	Percentage of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	56%	June 2018	Annual
State of Good Repair: Transit	Rolling Stock	Percentage of revenue vehicles within a	16%	June 2018	Annual

NATIONAL GOAL	TRANSIT PERFORMANCE AREA OF ASSET CATEGORY	PERFORMANCE MEASURE	RIPTA PERFORMANCE TARGET	RIPTA ADOPTION DATE	TARGET SETTING CYCLE
Asset Management		particular asset class that have met or exceeded their ULB			
	Infrastructure	Percentage of track segments with performance restrictions	0%	June 2018	Annual
	Facilities	Percentage of fatalities within an asset class rated below 3.0 on the FTA Transit Economic Requirements Model scale	0%	June 2018	Annual

State of Good Repair Goals and Objectives

RIPTA, as a Tier I provider, and as a recipient of federal financial assistance under 49 U.S.C. Chapter 53, should adhere to the established Transit Asset Management (TAM) Plan to guide the agency in reaching a State of Good Repair. To meet this, the following goals and objectives are adopted:

1) *Ensure that RIPTA's services are provided and maintained in a sustainable manner.*

a) Consider the risks and consequences of action, and inaction, when prioritizing asset replacement or repair, and when identifying and allocating funding sources.

b) Incorporate complete asset lifecycle costs into long-term financial planning to achieve cost-effective asset management planning.

c) Inform decision-making by planning for, reporting, and considering future lifecycle costs of new services and assets including when considering upgrades and expansions to existing physical infrastructure.

2) Safeguard assets, including employees and physical assets, by implementing asset management strategies and directing appropriate resources to these strategies.

a) Develop employee capacity and competency in asset management practices and promote agency-wide stewardship of asset management strategies and governance.

b) Identify and apply consistent criteria in prioritizing funding of asset management projects throughout RIPTA.
c) Annually allocate appropriate financial and operational resources to implement asset management strategies and devote resources to prioritized projects.

3) Demonstrate transparent and responsible asset management processes that align with best practices and federal standards.

a) Annually review and update all asset management plans to ensure assets are managed, valued, and depreciated in accordance with Generally Accepted Accounting Principles (GAAP) and federal standards.
b) Ensure alignment amongst RIPTA's annual operating and capital budgets, and Rhode Island's Transportation Improvement Program to inform decision makers.

4) Meet federal legislative requirements.

a) Develop Asset Management Plans that include, at a minimum:
    i) Capital asset inventories
    ii) Condition assessments
    iii) Risk-based decision-making, and
    iv) Investment prioritization.
b) Establish performance targets in relation to State of Good Repair measures, as required by the FTA.

Conclusion

In conclusion, the performance measures established by the RISPC include Highway Safety, Highway (Pavement and Bridge) Asset Management, System Performance, and Transit Asset Management. The purpose of these measures is to comply with FHWA requirements that DOTs and MPOs adopt performance targets for defined measures under MAP-21 and the FAST Act.

Appendix B shows that the FFY 2018 -2027 STIP makes progress towards achieving the performance targets and that the STIP includes, "to the maximum extent practicable, a description of the anticipated effect of the STIP towards achieving the performance targets" per 23 CFR§ 450.326.

RIDSP, RIDOT, and RIPTA have coordinated in analyzing the performance measures detailed in Appendix B. These performance goals and assessments detailed above give the State of Rhode Island a performance-based approach to tracking progress toward better transit and transportation services.