CDTC NEW VISIONS 2050
System Performance Report

May 15, 2020

Capital District Transportation Committee

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1 Background

Pursuant to the Moving Ahead for Progress in the 21st Century Act (MAP-21) and carried through into the Fixing America's Surface Transportation (FAST) Act, Metropolitan Planning Organizations (MPOs) must employ a transportation performance management approach in carrying out their federally-required planning and programming activities. Chapter 23 part 150(b) of the *United States Code* [23USC §150(b)] includes the following seven national performance goals for the Federal-Aid Highway Program:

- Safety – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- Capital Assets Condition – To maintain the highway infrastructure and transit capital asset systems in a state of good repair.
- Congestion Reduction – To achieve a significant reduction in congestion on the National Highway System (NHS)
- System Reliability – To improve the efficiency of the surface transportation system.
- Freight Movement and Economic Vitality – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- Environmental Sustainability – To enhance the performance of the transportation system while protecting and enhancing the natural environment
- Reduced Project Delivery Delays – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practice

On the public transportation side, transportation performance management shall be utilized to advance the general policy and purposes of the public transportation program as included in 49USC §5301(a) and (b).

Source: FHWA Performance Based Planning and Programming Guidebook, September 2013

The CDTC New Visions 2050 Plan was adopted on September 4, 2020. Metropolitan transportation plans (MTPs) adopted or amended after the following dates must include performance targets for the measures associated with the following performance management rulemakings:

May 27, 2018 – Highway Safety Improvement Program (HSIP) and Highway Safety

October 1, 2018 – Transit Asset Management

May 20, 2019 – Pavement and Bridge Condition

May 20, 2019 – System Performance/Freight/Congestion Mitigation & Air Quality Improvement (CMAQ) Program

July 20, 2021 – Transit Safety

2 HSIP and Highway Safety

2.1 Baseline Conditions

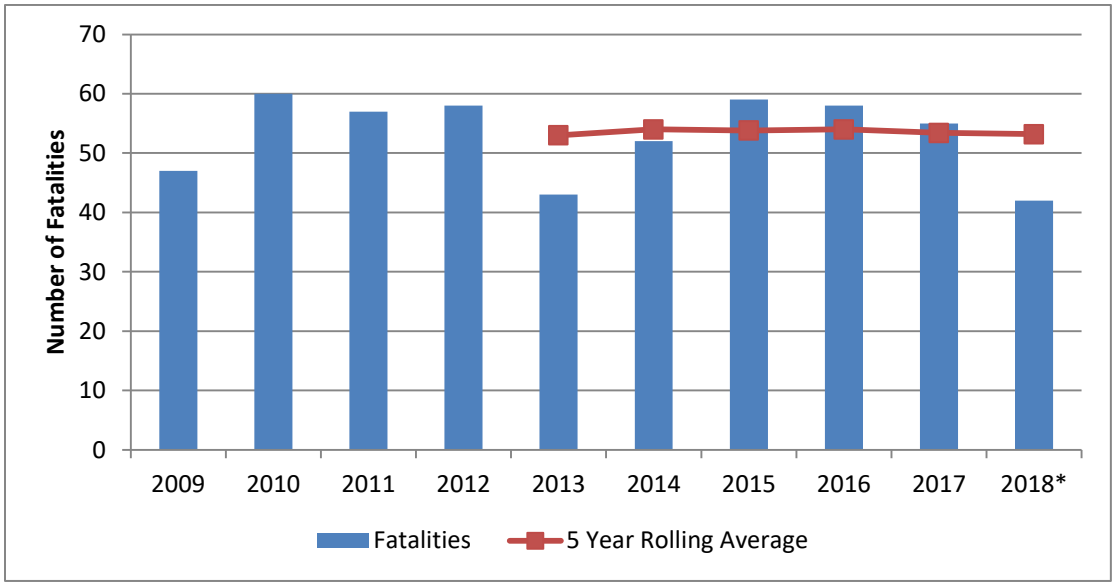
CDTC is required to take formal action on the proposed NYSDOT safety performance measures and targets, agreeing to plan and program projects that contribute toward the achievement of NYSDOT's targets. To monitor the region's performance, CDTC reviews crash data and tracks progress in each safety performance measure. Given the relatively low number of crashes in the four-county region when compared to the state (in 2018, nearly 62% of the entire state's fatalities and personal injuries occurred in New York City and Long Island), the percent change in the 5-year rolling average of crash data is more relevant when tracking performance than the annual numbers. CDTC's Safety Performance Measure Summary in Table 1 and the charts in Figures 1 through 5 provide the trend data for each performance measure through 2018, the most recent year for which the official crash data is available.

Table 1 – CDTC Area Safety Performance Summary

Performance Measures	2018 NYSDOT % Reduction Target	CDTC 2011-2015 5-Year Average	CDTC 2014-2018* 5-Year Average	CDTC 2018 % Change
Number of Fatalities	- 5.0%	54	53	- 1.8%
Rate of Fatalities (Fatalities per 100 Million VMT)	- 3.0%	0.67	0.64	- 4.5%
Number of Serious Injuries	- 6.0%	614	655	6.7%
Rate of Serious Injuries (Serious Injuries per 100 Million VMT)	- 5.0%	7.6	7.9	3.8%
Number of Non-motorized Fatalities and Non-motorized Serious Injuries	- 1.0%	98	101	1.1%

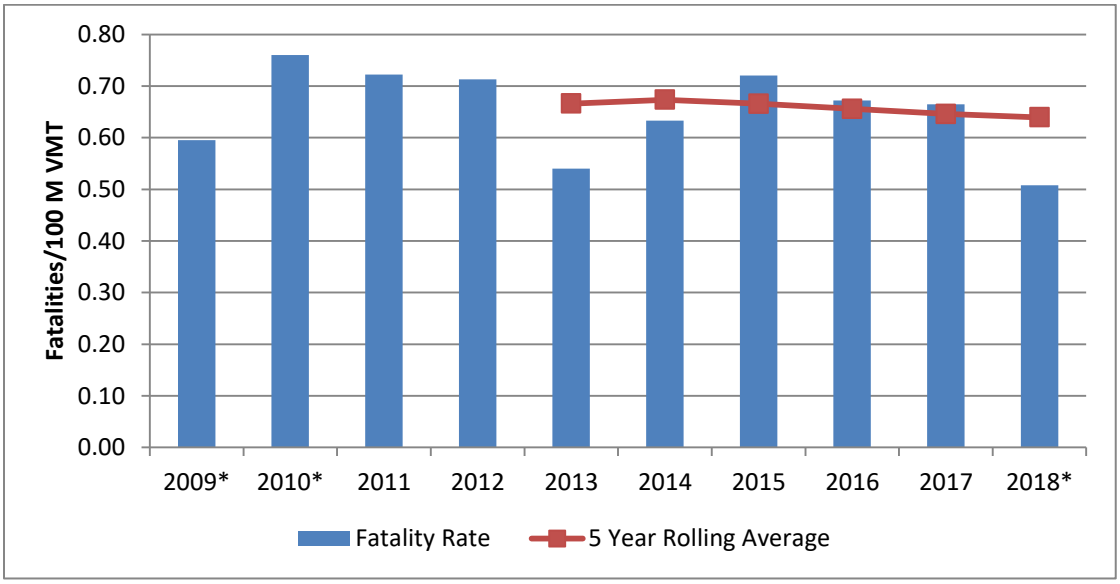
**2018 fatality data is preliminary and subject to change. Sources: FARS, FARS Annual Report File (2018), TSSR and the Highway Performance Monitoring System (HPMS) for vehicle miles travelled data.*

Figure 1 – Number of Capital Region Fatalities



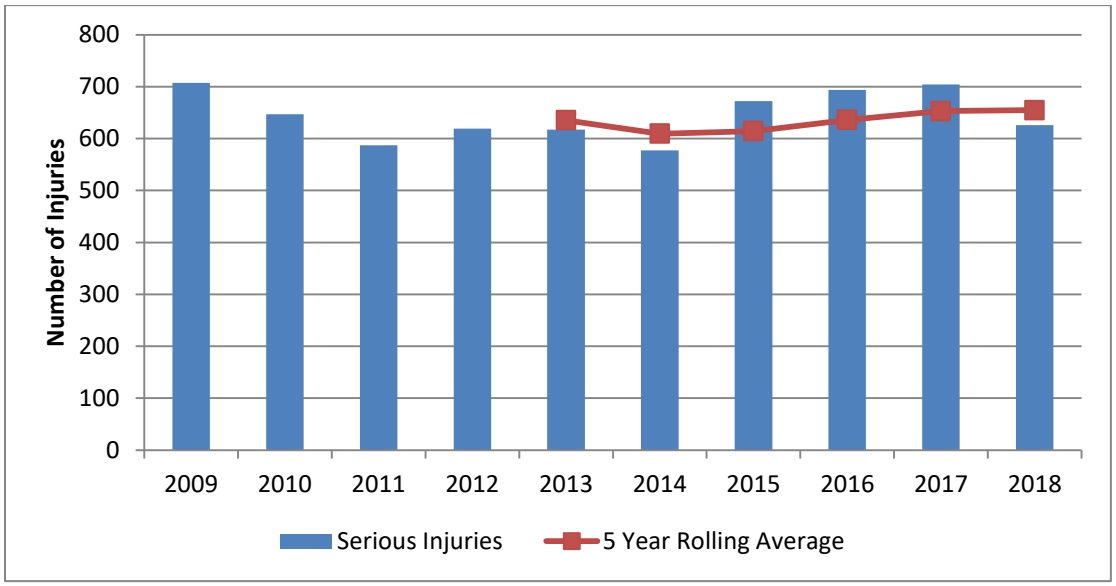
*Sources: FARS, FARS Annual Report File. * 2018 FARS data is preliminary.*

Figure 2 – Rate of Capital Region Fatalities / 100 Million Vehicle Miles Traveled



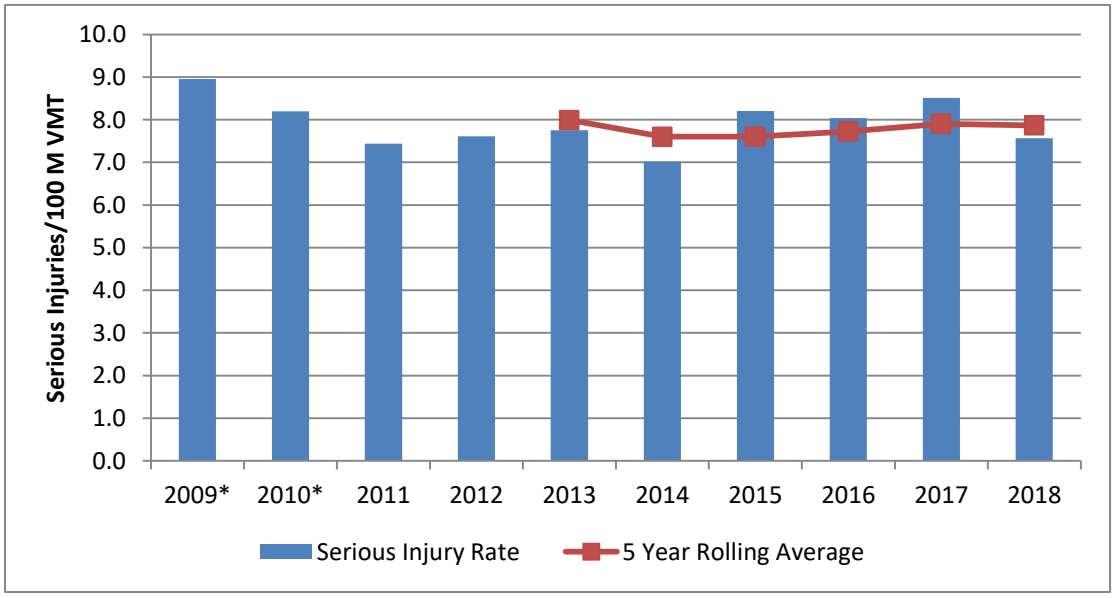
Data Source: FARS, FARS Annual Report File, Highway Performance Monitoring System.
**2018 FARS data is preliminary.*

Figure 3 – Number of Capital Region Serious Injuries



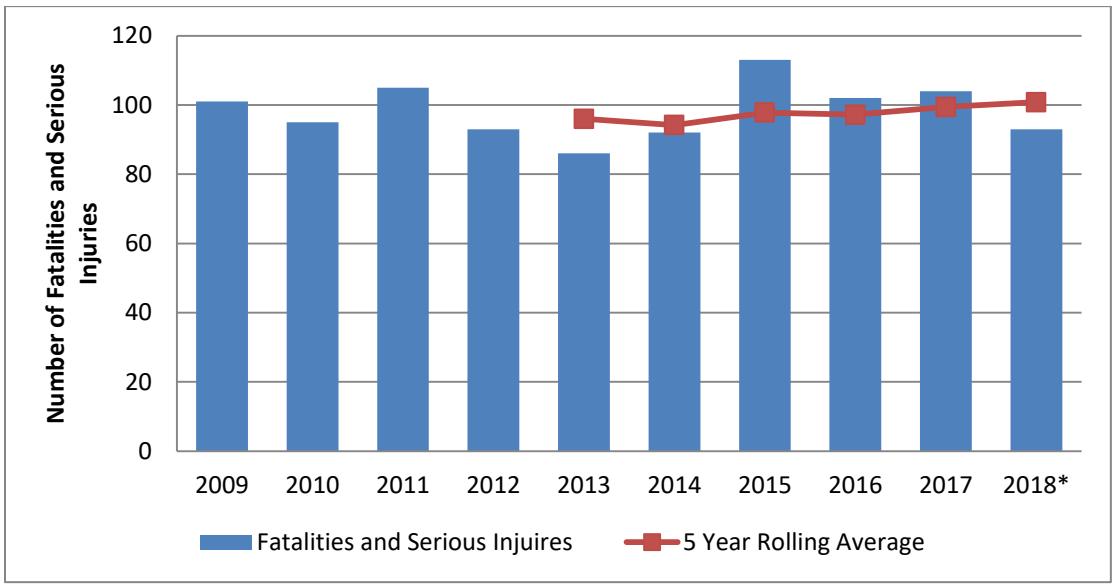
Data Source: ITSMR TSSR

Figure 4 – Capital Region Serious Injuries / 100 Million Vehicle Miles Traveled



Data Source: ITSMR TSSR, Highway Performance Monitoring System

Figure 5 – Number of Capital Region Non-motorized Fatalities and Serious Injuries



*Data Sources: FARS, FARS Annual Report File, ITSRM TSSR. *2018 FARS data is preliminary.*

2.2 Performance Targets

On March 15, 2016, the Federal Highway Administration (FHWA) published the final rule for the HSIP and Safety Performance Management (Safety PM) Measures in the *Federal Register* with an effective date of April 14, 2016.

The 2017 New York Strategic Highway Safety Plan (SHSP) is intended to reduce "the number of fatalities and serious injuries resulting from motor vehicle crashes on public roads in New York State." The SHSP guides the New York State Department of Transportation (NYSDOT), the MPOs, and other safety partners in addressing safety and defines a framework for implementation activities to be carried out across New York State. The NYSDOT Highway Safety Improvement Program (HSIP) annual report documents the statewide performance targets.

CDTC agreed to support the NYSDOT statewide 2020 targets for the Safety PM measures listed in Table 2 based on five year rolling averages per Title 23 Part 490.207 of the *Code of Federal Regulations* on December 5, 2019 via Resolution #19-4.

Table 2 – New York State 2020 Safety Performance Targets

Performance Measures	% Reduction	2020 NYSDOT Target
Number of Fatalities	- 4.0%	1,040.4
Rate of Fatalities (Fatalities per 100 Million Vehicle Miles Traveled (VMT))	- 4.0%	0.826
Number of Serious Injuries	- 2.0%	11,017.0
Rate of Serious Injuries (Serious Injuries per 100 Million VMT)	- 2.0%	8.709
Number of Non-motorized Fatalities and Non-motorized Serious Injuries	- 4.0%	2,626.8

2.3 Description of Progress

Key findings in the review of CDTC's regional safety performance data include:

1. The number and rate of fatalities are trending downward.
2. The number and rate of serious injuries are trending upward although 2018 experienced a decline in both categories.
3. The number of non-motorized fatalities and non-motorized serious injuries has trended upward overall.

While progress has been made to reduce fatalities, the region only met one of the state's five 2018 safety targets based on the available crash data. The state may have set ambitious targets in 2018 compared to those set in 2020, but what is of greater concern to the region is the overall increase in serious injuries. While many factors contribute to these numbers and CDTC's influence is not as significant as that of its member agencies, CDTC may need to offer more support to its members through strategic safety programs that could assist with reversing upward trends.

3 Transit Asset Management

The Federal Transit Administration (FTA) published a final Transit Asset Management (TAM) rule on July 26, 2016. The rule applies to all recipients and subrecipients of Federal transit funding that own, operate, or manage public transportation capital assets. The rule defines the term "state of good repair," requires that public transportation providers develop and implement TAM plans, and establishes State of Good Repair (SGR) standards and performance measures for four transit asset categories: rolling stock, transit equipment, transit infrastructure, and facilities. Table 3 below identifies the federal transit asset performance measures.

Table 3 - FTA TAM Performance Measures

Asset Category	Performance Measure and Asset Class
Rolling Stock	Percentage of revenue vehicles within a particular asset class that have either met or exceeded their useful life benchmark
Equipment	Percentage of non-revenue, support-service and maintenance vehicles that have met or exceeded their useful life benchmark
Infrastructure	Percentage of track segments with performance restrictions
Facilities	Percentage of facilities within an asset class rated below condition 3.0 on the Transit Economic Requirements Model (TERM) scale

3.1 Baseline Conditions

Table 4 presents the baseline performance/conditions for transit assets in the CDTC planning area. For additional information on asset condition, targets, TAM Policy and a full list of CDTA assets please see the CDTA Transit Asset Management Plan, released in October 2018.

Table 4 - Baseline Transit Asset Performance/Condition

Asset Category - Performance Measure	Asset Class	Useful Life Benchmark (Years)	Baseline Condition
Rolling Stock			
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Bus - Articulated Bus	14	0%
	Bus - BRT	14	0%
	Bus – Hybrid (30ft)	14	0%
	Bus – Hybrid (40ft)	14	0%
	Bus – Large Bus (30ft)	14	0%
	Bus – Large Bus (40ft)	14	29%
	Over-the-Road Bus – Commuter Service (40-45ft)	14	36%
	Cutaway Bus – Medium Bus (26-29ft)	10	0%
	Minibus – Small Bus (20-25ft)	10	16%
	Trolleybus	13	33%
Equipment			
Age - % of non-revenue vehicles within a particular asset class that have met or exceeded their ULB	Automobile – Car/Van/SUV	8	76%
	Automobile – Non-Revenue	8	N/A
	Automobile – Truck Light Duty	8	100%
	Automobile – Truck Medium Duty	8	25%
	Automobile – Truck Heavy Duty	8	67%
	Automobile – Truck Heavy Heavy Duty	8	0%
	Automobile – Non-Revenue Service Truck	8	N/A

Asset Category - Performance Measure	Asset Class	Useful Life Benchmark (Years)	Baseline Condition
	Automobile – Non-Revenue Forklift	8	N/A
Infrastructure			
% of track segments with performance restrictions (as applicable)	Rail fixed guideway track	N/A	N/A
Facilities			
Condition - % of facilities with a condition rating below 3.0 on the FTA TERM Scale	Administration & Maintenance - Albany Transportation Building (110 Watervliet Avenue)	N/A	0%
	Administration & Maintenance - Albany Planning & Marketing Building (85 Watervliet Avenue)	N/A	0%
	Administration & Maintenance - Troy Transportation Building	N/A	0%
	Administration & Maintenance - Schenectady Transportation Building	N/A	0%
	Administration & Maintenance - Rensselaer Rail Station	N/A	0%
	Administration & Maintenance - Saratoga Rail Station	N/A	0%

3.2 Performance Targets

Public transportation providers set transit asset targets annually and must provide the targets to each MPO in which the transit provider's projects and services are programmed in the MPO's Transportation Improvement Program (TIP). MPOs must then set targets after transit agencies set initial targets, and again when updating subsequent LRTPs. MPOs can either agree to program projects that will support the transit provider's targets or set their own separate regional targets for the MPO's planning area.

The transit asset performance targets listed in Tables 5-7, were set by CDTA on April 13, 2018 and CDTC agreed to support these transit asset targets on June 7, 2018 via Resolution #18-2.

Table 5 – Transit Asset Targets – Rolling Stock

Rolling Stock Performance Measure		Percentage of revenue vehicles within an asset class that have either met or exceeded their Expected Useful Life (instead of the Useful Life Benchmark) – Measures state of good repair					
Type	**Asset Class – Rolling Stock (Revenue Vehicles by Mode)**	**Useful Life Benchmark (ULB) Category**	**Quantity in FY 2020**	**ULB (Years)**	**Expected Useful Life (Years)**	**2019 & 2020 Target**	**FY 2020 % Exceeding Expected Useful Life**
Transit Coach	Bus – Articulated (60 foot)	Articulated Bus	9	14	12	10%	0%
	Bus – BRT	Bus	15	14	12	10%	0%
	Bus - Hybrid (30 foot)	Bus	8	14	10	10%	100%
	Bus - Hybrid (40 foot)	Bus	64	14	12	10%	9%
	Bus - Large Bus (30 foot)	Bus	8	14	10	10%	100%
	Bus - Large Bus (40 foot)	Bus	134	14	12	10%	6%
Transit Commuter	Bus - Commuter Service (40-45 foot)	Over-the-Road Bus	14	14	12	10%	36%
	Bus - Medium Bus (26-29 foot)	Cutaway Bus	2	10	7	10%	50%
Paratransit	Bus - Small Bus (20-25 foot)	Minibus	30	10	5	10%	10%
Trolley	Trolley	Trolleybus	7	13	10	10%	14%

Source: CDTA

Table 6 – Transit Asset Targets – Equipment

Equipment Performance Measure		Percentage of revenue vehicles within an asset class that have either met or exceeded their Expected Useful Life (instead of the Useful Life Benchmark) – Measures state of good repair					
Type	**Asset Class - Equipment (Non-revenue support, service and maintenance vehicles)**	**Useful Life Benchmark (ULB) Category**	**Quantity in FY 2020**	**ULB (Years)**	**Expected Useful Life (Years)**	**2019 & 2020 Target**	**FY 2020 % Exceeding Expected Useful Life**
Non-Revenue	Car/Van/SUV	Automobile	25	8	5	20%	40%
	Non-Revenue	Automobile	2	8		20%	50%
	Truck - (1) Light Duty	Automobile	0	8	5	20%	0%
	Truck - (2) Medium Duty	Automobile	6	8	7	20%	100%
	Truck - (3) Heavy Duty	Automobile	4	8	10	20%	50%
	Truck - (4) Heavy Heavy Duty	Automobile	1	8	12	20%	100%
Service Truck	Non-Revenue	Automobile	1	8		20%	
Forklift	Non-Revenue	Automobile	6	8		20%	
Wheel Polisher	(blank)	(blank)	1	8		20%	

Source: CDTA

Table 7 – Transit Asset Targets – Facilities

Facilities Performance Measure		Percentage of assets with condition rating below 3.0 on FTA TERM Scale[1] - Measures facility condition		
Type	**Asset Class – Facilities (Maintenance and administrative facilities, passenger stations (buildings) and parking facilities)**	**TERM Condition Assessment 2020**	**2019 & 2020 Target**	**% Exceeding TERM Scale 3.0**
Administration & Maintenance	Albany Transportation Building (110 Watervliet Avenue)	4	20%	0%
	Albany Planning & Marketing Building (85 Watervliet Avenue)	4	20%	0%
	Troy Transportation Building	4	20%	0%
	Schenectady Transportation Building	4	20%	0%
	Rensselaer Rail Station	4	20%	0%

[1] The FTA's Transit Economic Requirements Model (TERM) uses a scale of 1 (poor) to 5 (good) to report facility condition. FTA's Performance Asset Management Guidebook provides details on the methodology. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Facility%20Performance%20Assessment%20Guidebook.pdf

Facilities Performance Measure		Percentage of assets with condition rating below 3.0 on FTA TERM Scale[1] - Measures facility condition		
Type	**Asset Class – Facilities (Maintenance and administrative facilities, passenger stations (buildings) and parking facilities)**	**TERM Condition Assessment 2020**	**2019 & 2020 Target**	**% Exceeding TERM Scale 3.0**
	Saratoga Rail Station	4	20%	0%

Source: CDTA

3.3 Description of Progress

New Visions 2050 directly reflects the goals, objectives, performance measures, and targets as they are described in other public transportation plans and processes, including the CDTA Transit Asset Management Plan, released in October 2018. In addition to the transit asset measures and targets listed above, CDTC also identified additional transit performance objectives and measures unique to the CDTC planning area as part of the New Visions 2040 update. These measures are outlined further in section 7.10.

To support the State of Good Repair of capital assets and progress towards TAM performance targets, CDTC's 2019-2024 TIP reserves highly competitive, National Highway Performance Program and Surface Transportation Block Grant Program funds for transit projects in two regional set-asides:

1. RG 131 – Bus Rapid Transit ($19.4 M over five years): The Hudson River Corridor BRT Phase 1 (T107) and Washington/Western BRT Phase 1 (T109) projects were funded from RG 131.
2. RG 130 – Travel Demand Management (TDM) & Multimodal ($3.0 M over five years). The TDM Multimodal Implementation (T108) was funded from RG 130.

CDTA can request use of set-aside funding by submitting a TIP amendment for a new project.

4 Transit Safety

On July 19, 2019, the Public Transportation Agency Safety Plan (PTASP) Final Rule became effective and will require CDTA to develop a Safety Plan with safety performance measures and targets. The rule applies to all operators of public transportation systems that are recipients and sub-recipients of federal financial assistance under the Urbanized Area Formula Program (Section 5307). However, FTA is deferring applicability of this requirement for operators that only receive funds through FTA's Enhanced Mobility of Seniors and Individuals with Disabilities Formula Program (Section 5310) and/or Rural Area Formula Program (Section 5311).

The PTASP and performance targets must be shared with CDTC by July 20, 2020 and must be referenced in CDTC's Transportation Improvement Program and Metropolitan Transportation Plan updated or amended after July 20, 2021. For more information on the PTASP Final Rule and baseline safety performance data for the CDTC planning area please see the *New Visions 2050 Transit White Paper*.

5 Pavement and Bridge Condition Measures (PM2)

FHWA published the Pavement and Bridge Condition Performance Measures Final Rule in January 2017. This rule, which is also referred to as the PM2 rule, establishes six performance measures for pavement

and bridge condition on Interstate and non-Interstate National Highway System (NHS) roads. The PM2 measures are:

- Percent of Interstate pavements in good condition;
- Percent of Interstate pavements in poor condition;
- Percent of non-Interstate NHS pavements in good condition;
- Percent of non-Interstate NHS pavements in poor condition;
- Percent of NHS bridges (by deck area) classified as in good condition; and
- Percent of NHS bridges (by deck area) classified as in poor condition.

5.1 Pavement Condition Measures

The four pavement condition measures represent the percentage of lane-miles on the Interstate and non-Interstate NHS that are in good condition or poor condition. The PM2 rule defines NHS pavement types as either, asphalt, jointed concrete, or continuously reinforced concrete pavement (CRCP), and defines five pavement condition metrics that states are to use to assess pavement condition:

- International Roughness Index (IRI) – an indicator of roughness; applicable to all three pavement types.
- Cracking percent – percentage of the pavement surface exhibiting cracking; applicable to all three pavement types.
- Rutting – extent of surface depressions; applicable to asphalt pavements only.
- Faulting – vertical misalignment of pavement joints; applicable to jointed concrete pavements only.
- Present Serviceability Rating (PSR) – a quality rating that is applicable only to NHS roads with posted speed limits of less than 40 miles per hour, for example toll plazas and border crossings. A state may choose to collect and report PSR for applicable segments as an alternative to the other four metrics.

For each pavement metric, a threshold is used to establish good, fair, or poor condition. Table 8 lists the thresholds. Using these metrics and thresholds, pavement condition is assessed for each 0.1 mile section of the through travel lanes of mainline highways on the Interstate or the non-Interstate NHS, as follows:

- Asphalt segments are assessed using the IRI, cracking, and rutting metrics, while jointed concrete segments are assessed using IRI, cracking, and faulting. For these two pavement types, each segment is rated good if the rating for all three metrics are good, and poor if the ratings for two or more metrics are poor.
- Continuous concrete segments are assessed using the IRI and cracking metrics. A segment is rated good if both metrics are rated good, and poor if both metrics are rated poor.
- If a state collects and reports PSR for any applicable pavement segments, those segments are rated according to the PSR scale in Table 8.

For all three pavement types, sections that are not good or poor are rated fair.

Table 8 - Pavement Condition Metric Performance Thresholds

Metric Rating	Good	Fair	Poor
IRI (inches/mile) (Applies to all pavements)	< 95	95 – 170	> 170
Cracking Percent (%) (Applies to all pavements)	< 5	CRCP: 5 – 10 Jointed: 5 – 15 Asphalt: 5 – 20	CRCP: > 10 Jointed: > 15 Asphalt: > 20
Rutting (inches) (for asphalt only)	< 0.20	0.20 – 0.40	> 0.40
Faulting (inches) (for jointed concrete only)	< 0.10	0.10 – 0.15	> 0.15

The good/poor pavement condition measures are expressed as a percentage and are determined by summing the total lane-miles of good or poor highway segments and dividing by the total lane-miles of all highway segments on the applicable system. Pavement in good condition suggests that no major investment is needed. Pavement in poor condition suggests major reconstruction investment is needed in the near term.

5.2 Bridge Condition Measures

The two bridge condition performance measures refer to the percentage of bridges by deck area on the NHS that are in good or poor condition. Bridge owners are required to inspect bridges on a regular basis and report condition data to FHWA. The measures assess the condition of four bridge components: deck, superstructure, substructure, and culverts.

Each bridge component has a metric rating threshold to establish good, fair, or poor condition, as shown in Table 9. Each bridge on the NHS is evaluated using these ratings. If the lowest rating of the four metrics is greater than or equal to seven, the structure is classified as good. If the lowest rating is less than or equal to four, the structure is classified as poor. If the lowest rating is five or six, it is classified as fair.

Table 9 – Bridge Condition Performance Rating Thresholds

Metric Rating	Good	Fair	Poor
Deck	≥ 7	5 or 6	≤ 4
Superstructure	≥ 7	5 or 6	≤ 4
Substructure	≥ 7	5 or 6	≤ 4
Culvert	≥ 7	5 or 6	≤ 4

The bridge condition measures are expressed as the percent of NHS bridges in good or poor condition. The percent is determined by summing the total deck area of good or poor NHS bridges and dividing by the total deck area of the bridges carrying the NHS. Deck area is computed using structure length and either deck width or approach roadway width.

Bridges in good condition suggests that no major investment is needed. Bridges in poor condition are safe to drive on; however, they are nearing a point where substantial reconstruction or replacement is needed.

Pavement and Bridge Condition Performance Target Requirements

Performance for the PM2 measures is assessed over a series of four-year performance periods. The first performance period began on January 1, 2018 and runs through December 31, 2021. NYSDOT must report baseline performance and targets at the beginning of each period and update performance at the midpoint and end of each performance period.

The PM2 rule requires state DOTs and MPOs to establish performance targets for all six measures and monitor progress towards achieving the targets. States must establish:

- Four-year statewide targets for the percent of Interstate pavements in good and poor condition;
- Two-year and four-year statewide targets for the percent of non-Interstate NHS pavements in good and poor condition; and
- Two-year and four-year targets for the percent of NHS bridges (by deck area) in good and poor condition.

MPOs must establish four-year targets for all six measures by either agreeing to program projects that will support the statewide targets or setting quantifiable targets for the MPO's planning area.

The two-year and four-year targets represent expected pavement and bridge condition at the end of calendar years 2019 and 2021, respectively.

NYSDOT Pavement and Bridge Condition Baseline Performance and Established Targets

This system performance report discusses performance for each applicable target as well as the progress achieved by the MPO in meeting targets in comparison with system performance recorded in previous reports. The federal performance measures are new and therefore, performance of the system for each measure and associated targets have only recently been assessed and developed. Accordingly, this first LRTP system performance report highlights performance for the baseline period of 2017. NYSDOT will continue to monitor pavement and bridge condition performance and report to FHWA on a biennial basis. Future system performance reports will discuss progress towards meeting the targets since this initial baseline report.

NYSDOT established statewide PM2 targets on May 20, 2018. CDTC was then required to establish PM2 targets no later than November 16, 2018. CDTC agreed to support NYSDOT's PM2 performance targets on September 6, 2018 via resolution #18-4. By adopting NYSDOT's targets, CDTC agrees to plan and program projects that help NYSDOT achieve these targets.

Table 10 presents baseline performance for each PM2 measure for New York and for the CDTC planning area as well as the two-year and four-year statewide targets established by NYSDOT.

Table 10 - Pavement and Bridge Condition (PM2) Performance and Targets

Performance Measures	New York Performance (Baseline)	CDTC Performance (2017)**	New York 2-year Target (2019)	New York 4-year Target (2021)
Percent of Interstate pavements in good condition	N/A*	34.1%	N/A*	47.3%
Percent of Interstate pavements in poor condition	N/A*	0.0%	N/A*	4.0%
Percent of non-Interstate NHS pavements in good condition	36.7%	18.7%	14.6%	14.7%
Percent of non-Interstate NHS pavements in poor condition	26.7%	7.8%	12.0%	14.3%
Percent of NHS bridges (by deck area) in good condition	22.8%	29.9%	23.0%	24.0%
Percent of NHS bridges (by deck area) in poor condition	10.6%	11.7%	11.6%	11.7%

**For the first performance period only (January 1, 2018 through December 31, 2021), baseline condition and 2-year targets are not required for the Interstate pavement condition measures.*

***CDTC Data Sources: NYSDOT Pavement Inventory File 2017, NYSDOT Bridge File 2017 and NBI Bridge File 2017: NYSDOT pavement surface score ratings >=8 equate to federal measure 'good', surface score rating <=5 equate to federal measure 'poor'. The federal bridge regulation defines three classes for bridge condition assessment using the lowest of the four NBI ratings (Deck, Superstructure, Substructure and Culverts) on a 0-9 Scale, Good when the lowest rating is ≥7, Fair if lowest rating is 5 or 6, and Poor if lowest rating is ≤4.*

The CDTC planning region contains over 1,300 lane miles of NHS pavement and over 400 NHS bridges. Within the region, the NHS system carries over 50% of total vehicle miles traveled. Prior to the adoption of statewide targets CDTC staff evaluated the regions baseline performance in respect to each proposed performance measure using the most recent pavement and bridge data available. CDTC determined that regional metrics for the proposed measures aligned with statewide metrics and it was reasonable to adopt statewide targets.

New Visions 2050 supports preservation of the transportation system, identifies infrastructure needs within the CDTC planning area, and recommends funding for targeted pavement and bridge condition improvements. New Visions 2050 is based on a principal of infrastructure preservation and renewal and highlights that priority by identifying strategies that recommend devoting significant TIP resources to infrastructure preservation and renewal, supporting less costly and shorter-term road and bridge repairs for the foreseeable future and maximizing investments in pavement and bridges in the short term. CDTC also integrated the evaluation of PM2 and other federal performance measures into the TIP project merit evaluation process as part of the 2019-24 TIP update process. As part of this update, approximately 40% of newly programmed projects were part of the NHS system. These projects made up over 70% of new dollars programmed during the update.

On or before October 1, 2020, NYSDOT will provide FHWA and CDTC a detailed report of pavement and bridge condition performance covering the period of January 1, 2018 to December 31, 2019. NYSDOT and CDTC will also have the opportunity at that time to revisit the four-year PM2 targets.

6 System Performance, Freight, and Congestion, Mitigation & Air Quality Improvement Program Measures (PM3)

On January 18, 2017, FHWA published the system performance, freight, and Congestion, Mitigation and Air Quality Improvement Program (CMAQ) Performance Measures Final Rule in the *Federal Register*. This third FHWA performance measure rule (PM3), which has an effective date of May 20, 2017, established six performance measures to assess the performance of the NHS, freight movement on the Interstate System, and traffic congestion and on-road mobile source emissions for the CMAQ Program. The performance measures are:

For the National Highway Performance Program (NHPP)

- Percent of person-miles on the Interstate system that are reliable, also referred to as Level of Travel Time Reliability (LOTTR);
- Percent of person-miles on the non-Interstate NHS that are reliable (LOTTR);

For the National Highway Freight Program (NHFP)

- Truck Travel Time Reliability Index (TTTR);

For the CMAQ Program

- Annual hours of peak hour excessive delay per capita (PHED);
- Percent of non-single occupant vehicle travel (Non-SOV); and
- Cumulative two-year and four-year reduction of on-road mobile source emissions for CMAQ funded projects (CMAQ Emission Reduction).

The three CMAQ performance measures listed above are applicable only to designated nonattainment areas or maintenance areas for National Ambient Air Quality Standards by the Environmental Protection Agency. The Capital District Transportation Committee meets all current air quality standards and is not subject to establishing targets for these performance measures. The remaining performance measures are described below.

LOTTR Measures

Travel time reliability refers to the consistency or dependability of travel times on a roadway from day to day or across different times of the day. For example, if driving a certain route always takes about the same amount of time, that segment is reliable. It may be congested most of the time, not congested most of the time, or somewhere in between, but the conditions do not differ very much from time period to time period. On the other hand, if driving that route takes 20 minutes on some occasions but 45 minutes on other occasions, the route is not reliable.

The LOTTR is defined as the ratio of the longer travel times (80th percentile) to a normal travel time (50th percentile) over applicable roads during four time periods that cover the hours of 6 a.m. to 8 p.m. each day (AM peak, Mid-day, PM peak, and weekends). The LOTTR ratio is calculated for each roadway segment. The segment is reliable if its LOTTR is less than 1.5 during all four time periods. If one or more time periods have a LOTTR of 1.5 or above, that segment is unreliable.

The two LOTTR measures are expressed as the percent of person-miles traveled on the Interstate or non-Interstate NHS system that are reliable. By using person-miles, the measures take into account the total number of people traveling in buses, cars, and trucks over these roadway segments. To obtain total person-miles traveled, the length of each segment is multiplied by an average vehicle occupancy for each type of vehicle on the roadway.

The sum of person-miles on reliable segments is divided by the sum of person-miles on all segments to determine the percent of person-miles traveled that are reliable.

TTTR Measure

The TTTR measure assesses travel time reliability for trucks traveling on the Interstate. A TTTR ratio is generated by dividing the 95th percentile truck travel time by a normal travel time (50th percentile) for each segment of the Interstate system over five time periods throughout weekdays and weekends (AM peak, Mid-day, PM peak, weekend, and overnight). The time periods cover all hours of the day.

For each Interstate segment, the highest TTTR value among the five time periods is multiplied by the length of the segment. The sum of these length-weighted segments is then divided by the total length of Interstate to generate the TTTR Index.

Travel Time Data

The travel time data used to calculate the LOTTR and TTTR measures is provided by FHWA via the National Performance Management Research Data Set (NPMRDS). This dataset contains historical travel times, segment lengths, and Annual Average Daily Traffic (AADT) for Interstate and non-Interstate NHS roads.

PM3 Performance Target Requirements

Performance for the PM3 measures is assessed over a series of four-year performance periods. States must report baseline performance and targets during the first part of the performance period and update performance at the midpoint and end of each performance period.

For the LOTTR and TTTR measures, the first performance period began on January 1, 2018 and runs through December 31, 2021.

The PM3 rule requires state DOTs and MPOs to establish performance targets for each measure and monitor progress towards achieving the targets. NYSDOT must establish two-year and four-year state targets for the Interstate LOTTR, TTTR, Non-SOV Travel, and CMAQ Emission Reduction measures. For the non-Interstate NHS LOTTR and PHED measures, NYSDOT must establish four-year targets.

Within 180 days of NYSDOT establishing targets, MPOs must establish four-year performance targets for both LOTTR measures, the TTTR measure, and, if applicable, the CMAQ Emission Reduction measure. MPOs establish targets by either agreeing to program projects that will support the State's targets or setting quantifiable targets for the MPO's planning area.

The two-year and four-year targets represent expected performance at the end of calendar years 2019 and 2021, respectively.

NYSDOT PM3 Baseline Performance and Established Targets

This system performance report discusses performance for each applicable target as well as the progress achieved by the MPO in meeting targets in comparison with system performance recorded in previous reports. The federal performance measures are new and therefore, performance of the system for each measure and associated targets have only recently been assessed and developed. Accordingly, this first LRTP system performance report highlights performance for the baseline period prior to 2018.

NYSDOT will continue to monitor performance and report to FHWA on a biennial basis. Future system performance reports will discuss progress towards meeting the targets since this initial baseline report.

NYSDOT established PM3 targets on May 20, 2018. In consultation with the New York MPOs, NYSDOT subsequently recalculated and amended the State's LOTTR targets after discovering an error in the formula used to determine the 2018 baseline. CDTC was required to establish PM3 targets no later than November 16, 2018. CDTC agreed to support NYSDOT's PM3 performance targets for Interstate LOTTR and Non-Interstate LOTTR on December 6, 2018 via resolution # 18-6 and PM3 targets for TTTR on September 6, 2018 via resolution #18-4. By adopting NYSDOT's targets, CDTC agrees to plan and program projects that help NYSDOT achieve the State's targets.

Table 11 presents baseline performance for the LOTTR and TTTR measures for New York and for the CDTC planning area as well as the two-year and four-year targets established by NYSDOT.

Table 11 – System Performance and Freight (PM3) Performance and Targets

Performance Measures	New York Performance (Baseline)	CDTC Performance (2018)	New York 2-year Target (2019)	New York 4-year Target (2021)
Percent of person-miles on the Interstate system that are reliable (Interstate LOTTR)	81.3%	94.4%	73.1%	73.0%
Percent of person-miles on the non-Interstate NHS that are reliable (Non-Interstate NHS LOTTR)	77.0%	86.2%	N/A	63.4%
Truck travel time reliability index (TTTR)	1.38	1.41	2.00	2.11

The CDTC planning region contains over 1,300 lane miles of NHS roadways and over 800 lane miles of Interstates. Using Person Hours of Excessive Delay (PHED) as a measure, CDTC identified the following major delay corridors on the NHS in the CDTC planning area.

Delay corridors include:

- Northway, Exit 2 – 7, Colonie
- Northway Exit 9, Clifton Park
- Wolf Road, Colonie
- Alternate Route 7, Troy / Colonie
- Hoosick Street, Troy
- Route 5, Albany / Colonie
- Route 9, Colonie
- Route 50, Saratoga Springs

Specific to freight performance, the TTTR index does indicate some truck travel time reliability issues in the Capital District. The data supports investments in operational improvements and incident management along I-87/Adirondack Northway, from NYST Exit 24 to Clifton Park; I-90 from NYST Exit 24 to I-787; I-787 from Exit 3 to Exit 5; and at the NYS Thruway toll plazas at Exits 23, 24, 25, and 25A.

The CDTC 2050 LRTP addresses system performance and freight reliability, identifies infrastructure needs within the CDTC planning region, and provides funding for targeted improvements. The New Visions Plan addresses operations, congestion management travel reliability in a number of ways and provides a framework for improving regional environmental quality. The CDTC New Visions Plan policy is to address congestion not by widening roadways, but rather to implement ITS and TDM improvements. ITS (Intelligent Transportation System) improvements include signal improvements, signal coordination and advanced traffic management improvements. TDM (Travel Demand Management) refers to efforts to reduce auto travel and congestion by improving transit access, bicycle and pedestrian access, providing opportunities for carpooling and telecommuting, and other strategies.

On or before October 1, 2020, NYSDOT will provide FHWA and CDTC a detailed report of performance for the PM3 measures covering the period of January 1, 2018 to December 31, 2019. NYSDOT and CDTC will also have the opportunity at that time to revisit the four-year PM3 targets.

7 New Visions 2050 Performance

The CDTC New Visions Plan has always used some form of performance indicators to describe the goals of individual program areas and potential outcomes of the Plan. As part of the New Visions 2040 update process, CDTC bolstered their commitment to performance based planning and programming in response to the Fixing America's Surface Transportation (FAST) Act, which requires Metropolitan Planning Organizations (MPOs) to use a transportation performance management approach in carrying out their federally-required planning and programming activities. CDTC developed a comprehensive list of objectives and corresponding performance measures for each New Visions program area, identifying over 50 individual metrics to measure the performance of the New Visions Plan. The identified New Visions performance measures are integrated into TIP project selection, project development, linkage studies and various other areas of CDTC activities.

The identified performance measures are key metrics that represent the performance of each program area. Each program area can be traced back to the 13 New Visions Planning and Investment principals that guide CDTC's planning process. Improving conditions of New Visions performance measures indicate the adherence to the planning and investment principals and progress towards New Visions 2050 goals. Figure 7 on the following page illustrates how the identified performance measures fit into the New Visions process.

Some measures have been changed or modified from the original measures identified in New Visions 2040 based on input from New Visions Working Groups or lack of available data for the previously identified measure. New Visions 2050 is the first plan that includes data for the identified metrics. In many cases historic data was unavailable and limited the ability to identify current trends.

A baseline value, performance goal and current trend have been identified for each performance measure. The baseline value cites the most recent data available for each metric, the performance goal is the desired future change in the metric, and the current trend indicates whether historic data shows that the measure is improving declining, or has no trend, as indicated by the performance dial in Figure 6.

Figure 6 – New Visions Performance Dial

The following sections outline the objectives, measures, baseline conditions, performance goals, and current trends for each program area. Each section also includes a discussion of CDTC efforts and progress towards New Visions Goals.

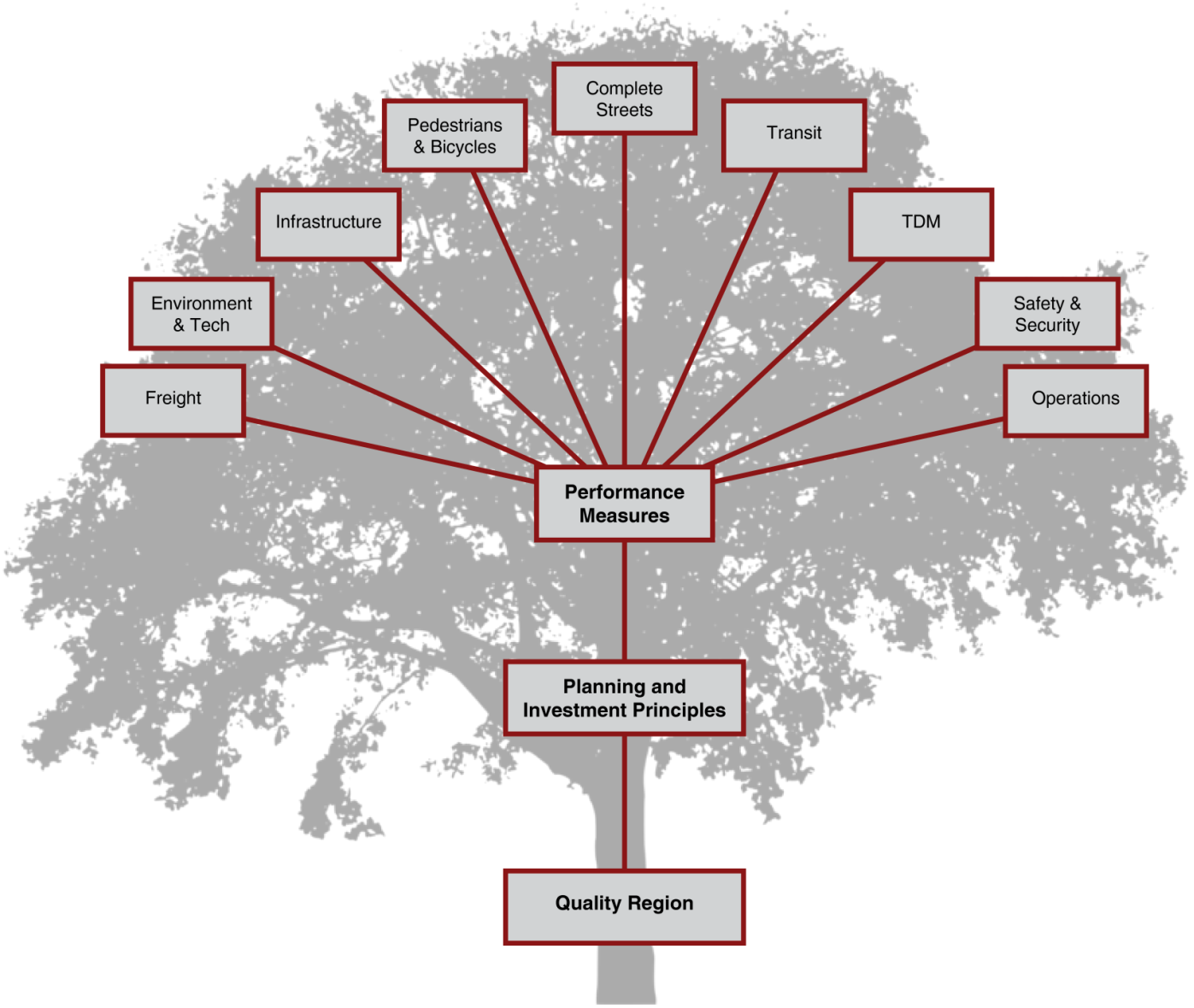
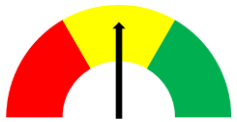


Figure 7 – New Visions Performance Tree

7.1 Quality Region

1. **Objective:** Evaluate projects and investments to improve Community Quality of Life. Funding should be programmed so that projects with positive quality of life impacts are favored over projects with neutral or negative impacts.
   - **Measure:** Measure the percentage of programmed projects with positive quality of life impacts, rating each project by using objective, qualitative, and descriptive criteria.
2. **Objective:** Evaluate projects and investments to improve the economy. Funding should be programmed so that projects with positive economic development impacts are favored over projects with neutral or negative impacts.
   - **Measure:** Measure the percentage of programmed projects with positive economic development impacts, rating each project by using objective, qualitative, and descriptive criteria.
3. **Objective:** Evaluate projects and investments to improve all communities. Funding should be programmed fairly to all populations (urban, suburban, and rural, disadvantaged populations, people with disabilities, etc.).
   - **Measure:** Measure the percentage of programmed projects with positive environmental justice impacts, rating each project by using objective, qualitative, and descriptive criteria.

Quality Region Performance Measures			
Performance Measures	Baseline Value (19-24 TIP)	Performance Goal 2050	Current Trend
% of Programmed TIP Projects with Positive Quality of Life impacts	72%	Maintain Current Percentage	
% of Programmed TIP Projects with positive Economic Development Impacts	100%	Maintain Current Percentage	

Quality Region Performance Measures			
Performance Measures	Baseline Value (19-24 TIP)	Performance Goal 2050	Current Trend
% of Programmed TIP Projects with positive Environmental Justice Impacts	56%	Increase Current Percentage	

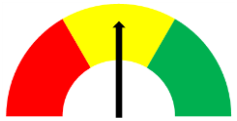
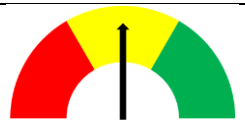
Description of Progress

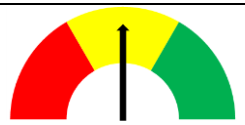
CDTC integrates regional quality of life into all aspects of planning and programming and emphasizes that fair and equitable investment in all transportation modes and programs are needed to make the Capital District a Quality Region. CDTC provides technical assistance and funding to municipalities to develop plans that are consistent with Smart Growth and Complete Streets principles and incorporates Environmental Justice review into the Linkage Program studies and TIP project selection process.

CDTC directly considers Quality Region Performance Measures as part of the candidate Transportation Improvement Program (TIP) funding merit evaluation process. A project is awarded merit points if it is has elements that are consistent with improving local land use compatibility, advances smart growth principals, improves Environmental Justice areas or makes ADA improvements. Data has only been collected for two TIP update cycles so identifying a clear trend is difficult, however, the baseline values from the most recent TIP update indicate the majority of projects funded have a positive impact on regional quality of life.

7.2 Environment and Technology

1. **Objective:** Reduce greenhouse gas emissions and energy consumption in the Capital District at the Regional level and at the municipal level
   - **Measure:** Greenhouse gas emissions from Transportation by County
   - **Measure:** Petroleum Consumption per capita
2. **Objective:** Reduce Emissions that contribute to ozone pollution in the atmosphere
   - **Measure:** Percent of programmed projects with a positive impact on greenhouse gas (GHG) emissions
   - **Measure:** Volatile Organic Compound (VOC) and Nitrogen Oxide (NOx) emissions from transportation
3. **Objective:** Working in support of Capital Clean Communities, increase petroleum displacement from VMT reduction, hybrid electric vehicles, idle reduction, fuel economy, off-road vehicles, alternative fuels and vehicles (including Ethanol, Biodiesel, Propane, Electric and Natural Gas).
   - **Measure:** Petroleum Displacement from transportation (Gallon Gas Equivalents)

Environment and Technology Performance Measures			
Performance Measures	Baseline Value	Performance Goal 2050	Current Trend
Greenhouse gas emissions from Transportation by County (Metric Tons Carbon Dioxide Equivalent)	Albany County – 6,404,578 Rensselaer County – 1,681,270 Saratoga County – 3,160,107 Schenectady County – 1,528,096 (2010 data)	Decrease Baseline Value	
Petroleum Consumption per capita	68.5 (Statewide)	Decrease Baseline Value	

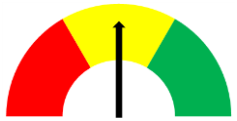
Environment and Technology Performance Measures			
Performance Measures	Baseline Value	Performance Goal 2050	Current Trend
Percent of programmed projects with a positive impact on greenhouse gas (GHG) emissions	33% (2019-24 TIP)	Increase Baseline Value	
Volatile Organic Compound (VOC) and Nitrogen Oxide (NOx) emissions from transportation	Air Quality Attainment	To maintain attainment status, VOC and NOx must remain under 100 tons per year.	
Petroleum Displacement from transportation (gallon gas equivalent)	4,881,023	Increase Baseline Value	

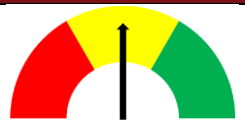
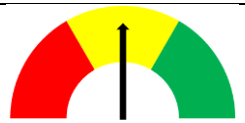
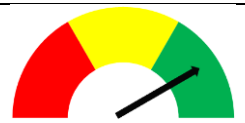
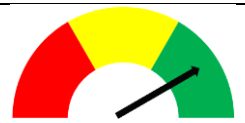
Description of Progress

CDTC provides technical assistance and funding to municipalities to develop plans that are consistent with Smart Growth principles and progress towards the Environment and Technology performance measures. Support for walking and bicycling infrastructure and mixed-use and transit-oriented development is common in communities throughout the Capital District and growing in demand as the need to reduce GHGs and transportation costs become more urgent, globally and throughout NYS. In addition to land use planning, other strategies to reduce the use of petroleum fuels in the region have included education and outreach related to alternative fuels and advanced vehicle technologies, and prioritizing infrastructure projects that are estimated to reduce energy use. The Capital District Clean Communities Coalition (CDCC), a United States Department of Energy (USDOE) Clean Cities program, is hosted by CDTC and coordinates training, events, and other educational opportunities for fleets and the public throughout the year on available alternative fuels, advanced vehicle technologies (ex. electric vehicles), and fueling infrastructure. Additionally, the percent of TIP projects estimated to have a positive impact on GHG emissions increased from the 2016-21 TIP to the 2019-24 TIP. This includes projects that support alternative modes or reduce congestion. For more detail on Environment and Technology Performance Measures please see the *New Visions 2050 Environment & Technology White Paper*.

7.3 Bicycle and Pedestrian

1. **Objective:** Improve safety; reduce the number of vehicle crashes involving bicyclists and pedestrians.
   - **Measure:** Injuries and fatalities resulting from crashes involving bicyclists and pedestrians
2. **Objective:** Increase number of bicycle and pedestrian trips (esp. commuting trips) in the Capital Region.
   - **Measure:** Percent of Bike and Walk to work trips
3. **Objective:** Reduce obesity rates, heart disease and other chronic illness in the Capital Region.
   - **Measure:** Rate of adult obesity, heart disease and other chronic illnesses in the Capital Region.
4. **Objective:** Increase economic activity related to walking and biking.
   - **Measure:** Expenditures from trail tourism.
5. **Objective:** Increase funding for bicycle and pedestrian projects, particularly on the on-road portions of the bicycle and pedestrian priority networks**.**
   - **Measure:** TIP program funding.
6. **Objective:** Improve access to walking and biking
   - **Measure:** Total Miles of bicycle and pedestrian infrastructure.

Bicycle and Pedestrian Performance Measures			
Performance Measures	Baseline Value	Performance Goal 2050	Current Trend
Injuries and fatalities resulting from crashes involving bicyclists and pedestrians	503 (2018)	Decrease Baseline Value	

Bicycle and Pedestrian Performance Measures			
Performance Measures	Baseline Value	Performance Goal 2050	Current Trend
Percent of Bike and Walk to work trips.	3.82% (2016 ACS)	Increase Baseline Value	
Rate of adult obesity in the Capital Region	Albany – 25.3% Rensselaer – 31.5% Schenectady – 28.9% Saratoga – 25.7%	Decrease Baseline Value	
Expenditures from trail tourism	$15.4 Million	Increase Baseline Value	
Bicycle and Pedestrian Network Set-Aside TIP funding.	$6.5 Million (2019-24 TIP)	Maintain Baseline Value	
Total Miles of bicycle and pedestrian infrastructure.	1,395 miles (2019 data)	Increase Baseline Value	

Description of Progress

CDTC supports progress towards the Bicycle and Pedestrian performance measures through a variety of programs and funding mechanisms. The Capital Coexist Traffic Safety Ambassador Grant, also known as the "Mini-Grant" program began in 2016 in order to expand CDTC's bicycle and pedestrian education efforts and leverage the relationships and resources being expended within communities on bicycle and pedestrian

programming. Since 2016, CDTC has done an annual solicitation for projects. The grant is unlike any other funding support CDTC provides, with a maximum of $5,000 and eligible recipients include local governments, first responders, businesses and non-profit organizations. Proposed projects that target underserved or particularly vulnerable populations, like children or seniors are prioritized for funding. Since 2016, more than $100,000 has been invested in 32 different projects.

CDTC creates, purchases, and distributes various educational materials that promote bicycle and pedestrian safety. A mix of print materials has been created for a variety of road users – bicyclists, pedestrians, and drivers – and a range of age groups. Child-size reflective safety vests, LED bike lights and LED bracelets have also been purchased branded with the CDTC logo or See! Be Seen! Messaging, and distributed throughout the Capital District at events. These materials can be requested through an order form on the CDTC website. Many requests come from schools that participate in National Walk to School (October) and National Bike to School Day (May). Below are examples of print materials created by CDTC and by other organizations that CDTC reprints and makes available upon request.

The CDTC TIP includes a "Bicycle and Pedestrian Network Set-Aside" which sets aside designated funding for projects that prioritize the criteria for the CDTC Bicycle and Pedestrian Priority Network and make significant improvements for walking and bicycling. A $6.5 million set-aside was approved in the 2019-24 TIP, the largest set-aside specifically for bicycle and pedestrian infrastructure projects to date. For more detail on Bicycle and Pedestrian Performance Measures please see the *New Visions 2050 Bicycle and Pedestrian White Paper*.

7.4 Complete Streets

1. **Objective:** Make transportation investments based on a complete streets framework which supports the convenient and safe travel of all people – of all ages and abilities as appropriate to a facility's community context.
   - **Measure:** Number of communities in the region adopting complete streets policies via governing body action.
   - **Measure:** Number of CDTC complete streets training sessions held and number of attendees.
   - **Measure:** Number of funded TIP projects including complete streets features.
   - **Measure:** Number of municipalities that maintain year-round usability.
   - **Measure:** Number of municipalities utilizing a checklist for project development.

Complete Streets Performance Measures			
Performance Measures	Baseline Value	Performance Goal 2050	Current Trend
Number of communities in the region adopting complete streets policies via governing body action.	8 (2019)	Increase Baseline Value	
Number of CDTC complete streets training sessions held and number of attendees.	8 (2019)	Increase Baseline Value	
Number of funded TIP projects including complete streets features.	20 (2019-24 TIP)	Increase Baseline Value	
Number of municipalities that maintain year-round usability.	NA	NA	This performance measure is new to New Visions 2050 and tracking

Complete Streets Performance Measures			
Performance Measures	Baseline Value	Performance Goal 2050	Current Trend
			has not yet begun.
Number of municipalities utilizing a checklist for project development.	2	Increase Baseline Value	

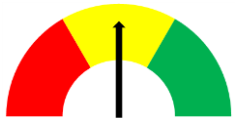
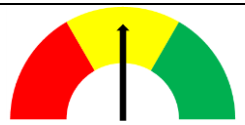
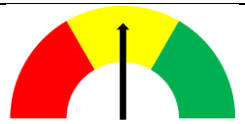
Description of Progress

Progress towards complete streets performance goals has been positive. CDTC's Complete Streets Educational and Technical Workshop series helps transportation planning practitioners and decision makers identify and overcome complete streets policy and implementation barriers. To date, CDTC has held two (2) rounds of the workshop series and provided training to over 150 people.

CDTC has also incentivized implementation of complete streets by modifying the TIP Project Candidate Merit Evaluation Process. The complete streets category allows for a maximum of five points for projects that are transformative, replacing infrastructure which primarily serves high or moderate speed through traffic with a facility that fully or substantially implements complete street design, with 8 or more complete streets elements. The category deducts up to two points for projects that remove three or more complete streets features. CDTC staff is also in the process of drafting Complete Streets Design guidelines applicable throughout the Capital Region in order to provide regional partners with consistent guidance on complete streets design. In addition, there has been increased coordination between NYSDOT and municipalities, and NYSDOT has fully integrated its Capital Projects Complete Streets Checklist into the project design process. For more detail on Complete Streets Performance Measures please see the *New Visions 2050 Complete Streets White Paper*.

7.5 Regional Operations

1. **Objective:** Reduce travel delay and improve travel reliability by implementing congestion management actions and operations.
   - **Measure:** Reliability - Level of Travel Time Reliability Interstate(LOTTR – Interstate)
   - **Measure:** Reliability – Level of Travel Time Reliability – Non-Interstate (LOTTR – Non-Interstate)
   - **Measure:** Peak Hours of Excessive Delay (Person Hours)

Regional Operations Performance Measures			
Performance Measures	Baseline Value	Performance Goal 2050	Current Trend
Level of Travel Time Reliability Interstate (LOTTR – Interstate)	94.4% (2019)	Increase Baseline Value	
Level of Travel Time Reliability – Non-Interstate (LOTTR – Non-Interstate)	86.2% (2019)	Increase Baseline Value	
Peak Hours of Excessive Delay (Person Hours)	6,909,602 Hours (2019)	Increase Baseline Value (by no more than 20%)	

Description of Progress

Progress towards Regional Operations performance goals has been positive New Visions 2050 addresses operations, congestion management travel reliability in a number of ways and provides a framework for improving regional environmental quality. The CDTC New Visions Plan policy is to address congestion not by widening roadways, but rather to implement ITS and TDM improvements. ITS (Intelligent Transportation System) improvements include signal improvements, signal coordination and advanced traffic management improvements. TDM (Travel Demand Management) refers to efforts to reduce auto travel and congestion by improving transit access, bicycle and pedestrian access, providing opportunities for carpooling and telecommuting, and other strategies. For more detail on Regional Operations Performance Measures please see the *New Visions 2050 Regional Operations White Paper*.

7.6 Infrastructure

1. **Objective:** Maintain the region's roadways, bridges, trails, sidewalks, and transit system in a state of good repair using a performance-based management strategy.

Pavement Categories

1. All National Highway System (NHS) roads
2. Interstate NHS Roads
3. State Owned Federal Aid Roads
4. Non-State Owned Federal Aid Roads
5. Local (Non-Federal Aid Roads

Pavement Measures

- **Pavement Measure:** Percent Good Pavement
- **Pavement Measure:** Percent Fair Pavement
- **Pavement Measure:** Percent Poor Pavement

ADA Compliance Categories

1. Sidewalks
2. Intersections

- ***ADA Measure:** Percent ADA Compliant

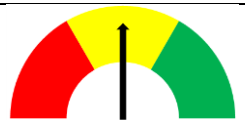
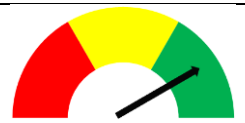
*There is currently no data for this performance measure. CDTC is evaluating how this metric can be accurately measured regionally.

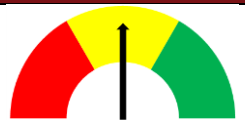
Bridge Categories

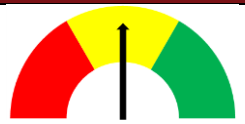
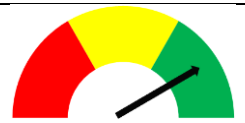
1. NYSDOT Interstate
2. NYSDOT Non-Interstate
3. NYS Thruway
4. Local
5. Other

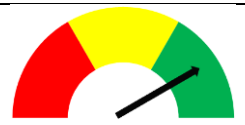
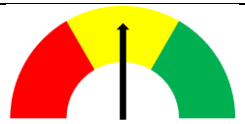
Bridge Measures

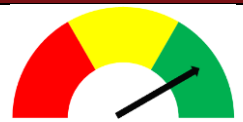
- **Bridge Measure:** Percent Number of Deficient Bridges
- **Bridge Measure:** Percent Deck area of Deficient Bridges
- **Bridge Measure:** Percent Number of Structurally Deficient Bridges
- **Bridge Measure:** Percent Deck area of Structurally Deficient Bridges
- **Bridge Measure:** Percent Deck area of Good Condition Bridges
- **Bridge Measure:** Percent Deck area of Poor Condition Bridges

Infrastructure Performance Measures – All National Highway System Roads			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Good Pavement	69%	Increase Baseline Value	
Percent Fair Pavement	17%	Decrease Baseline Value	
Percent Poor Pavement	3%	Maintain Baseline Value	

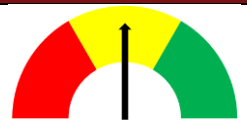
Infrastructure Performance Measures – Interstate National Highway System Roads			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Good Pavement	84%	Increase Baseline Value	

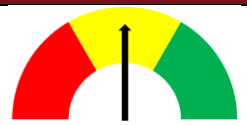
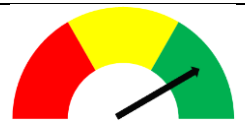
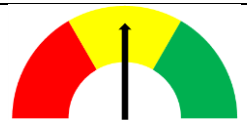
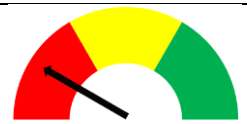
Infrastructure Performance Measures – Interstate National Highway System Roads			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Fair Pavement	3%	Decrease Baseline Value	
Percent Poor Pavement	0%	Maintain Baseline Value	

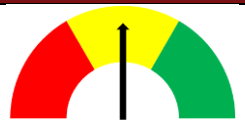
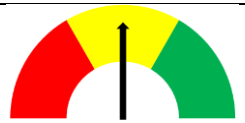
Infrastructure Performance Measures – State Owned Federal Aid Roads			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Good Pavement	63%	Increase Baseline Value	
Percent Fair Pavement	23%	Decrease Baseline Value	
Percent Poor Pavement	5%	Maintain Baseline Value	

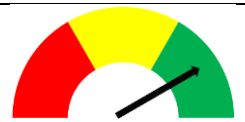
Infrastructure Performance Measures – Non-State Owned Federal Aid Roads			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Good Pavement	50%	Increase Baseline Value	
Percent Fair Pavement	25%	Decrease Baseline Value	
Percent Poor Pavement	13%	Decrease Baseline Value	

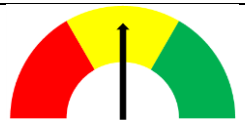
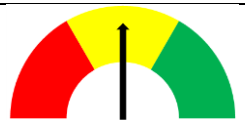
Infrastructure Performance Measures – Local (Non-Federal Aid System Roads)			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Good Pavement	31%	Increase Baseline Value	
Percent Fair Pavement	40%	Decrease Baseline Value	

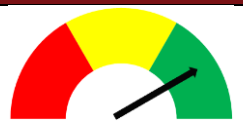
Infrastructure Performance Measures – Local (Non-Federal Aid System Roads)			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Poor Pavement	21%	Decrease Baseline Value	

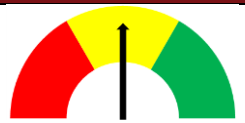
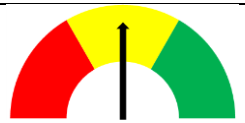
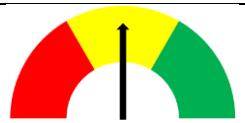
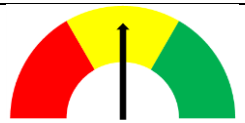
Infrastructure Performance Measures – NYSDOT Interstate Bridges			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Number of Deficient Bridges	34%	Decrease Baseline Value	
Percent Deck Area of Deficient Bridges	52%	Decrease Baseline Value	
Percent Number of Structurally Deficient Bridges	5.6%	Decrease Baseline Value	
Percent Deck Area of Structurally Deficient Bridges	16.4%	Decrease Baseline Value	

Infrastructure Performance Measures – NYSDOT Interstate Bridges			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Deck Area of Good Condition Bridges	21.7%	Increase Baseline Value	
Percent Deck Area of Poor Condition Bridges	14.7%	Decrease Baseline Value	

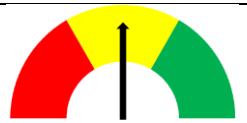
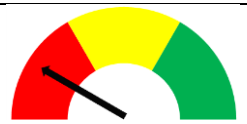
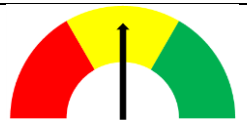
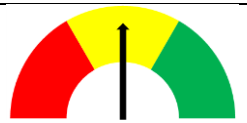
Infrastructure Performance Measures – NYSDOT Non-Interstate Bridges			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Number of Deficient Bridges	34%	Decrease Baseline Value	
Percent Deck Area of Deficient Bridges	49%	Decrease Baseline Value	
Percent Number of Structurally Deficient Bridges	6.6%	Decrease Baseline Value	

Infrastructure Performance Measures – NYSDOT Non-Interstate Bridges			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Deck Area of Structurally Deficient Bridges	7.7%	Decrease Baseline Value	
Percent Deck Area of Good Condition Bridges	22.6%	Increase Baseline Value	
Percent Deck Area of Poor Condition Bridges	8.6%	Decrease Baseline Value	

Infrastructure Performance Measures – NYS Thruway Bridges			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Number of Deficient Bridges	36%	Decrease Baseline Value	
Percent Deck Area of Deficient Bridges	66%	Decrease Baseline Value	

Infrastructure Performance Measures – NYS Thruway Bridges			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Number of Structurally Deficient Bridges	5.6%	Decrease Baseline Value	
Percent Deck Area of Structurally Deficient Bridges	3.4%	Decrease Baseline Value	
Percent Deck Area of Good Condition Bridges	18.9%	Increase Baseline Value	
Percent Deck Area of Poor Condition Bridges	3.4%	Decrease Baseline Value	

Infrastructure Performance Measures – Other Bridges			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Number of Deficient Bridges	4%	Decrease Baseline Value	

Infrastructure Performance Measures – Other Bridges			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent Deck Area of Deficient Bridges	8%	Decrease Baseline Value	
Percent Number of Structurally Deficient Bridges	3.3%	Decrease Baseline Value	
Percent Deck Area of Structurally Deficient Bridges	7.7%	Decrease Baseline Value	
Percent Deck Area of Good Condition Bridges	13.7%	Increase Baseline Value	
Percent Deck Area of Poor Condition Bridges	12.1%	Decrease Baseline Value	

ADA Compliance

Infrastructure Performance Measures – ADA Compliance			
Performance Measures	Baseline Value (2017)	Performance Goal 2050	Current Trend
Percent ADA Compliant Sidewalks	NA	NA	NA
Percent ADA Compliant Intersections	NA	NA	NA

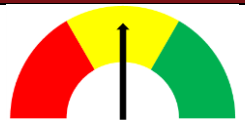
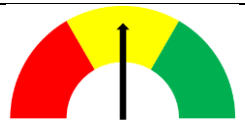
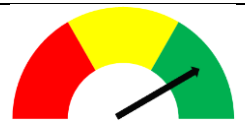
Description of Progress

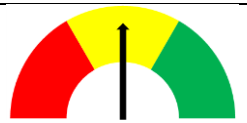
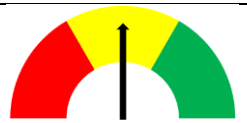
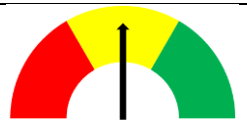
The New Visions 2050 Plan is based on a principal of infrastructure preservation and renewal and highlights that priority by identifying strategies that recommend devoting significant TIP resources to infrastructure preservation and renewal, supporting less costly and shorter-term road and bridge repairs for the foreseeable future and maximizing investments in pavement and bridges in the short term. CDTC's current strategy of infrastructure preservation is directly reflected in TIP programming. During the previous two TIP updates (2016-21 and 2019-24), a significant portion of projects programmed and overall funding was programmed towards projects with elements of highway and bridge preservation and renewal. Approximately 80% of newly programmed projects in each update have had a preservation and renewal element, as determined by CDTC staff during the merit review process.

CDTC has also integrated the evaluation of PM2 and other federal performance measures into the TIP project merit evaluation process as part of the 2019-24 TIP update process. Approximately 40% of newly programmed projects were part of the NHS system. These projects made up over 70% of new dollars programmed on the 2019-24 TIP. For more detail on Infrastructure Performance Measures please see the *New Visions 2050 Infrastructure White Paper*.

7.7 Freight

1. **Objective:** Maintain a State of Good repair for infrastructure on the Freight Priority Network (FPN).
   - **Measure:** Percent Poor Bridges on the FPN
   - **Measure:** Percent Good / Fair / Poor Pavements on the FPN
2. **Objective:** Reliability – Non-recurring congestion can cause large and measurable costs to goods movement. The causes are incidents (including crashes), work zones, weather events, and special events (like concerts or fairs). With carriers expected to meet specified delivery windows, or constructing driver schedules to meet hours of service regulations, an unplanned delay can make adherence impossible.
   - **Measure:** Truck Travel Time Reliability (TTTR)

Freight Performance Measures – FPN Pavement Condition			
Performance Measures	Baseline Value (2016)	Performance Goal 2050	Current Trend
Percent Good Pavement	68%	Increase Baseline Value	
Percent Fair Pavement	18%	Decrease Baseline Value	
Percent Poor Pavement	2%	Maintain Baseline Value	

Freight Performance Measures – FPN Bridge Condition			
Performance Measures	Baseline Value (2016)	Performance Goal 2050	Current Trend
Percent Structurally Deficient Bridges	8.96%	Decrease Baseline Value	
Percent Deck Area of Good Condition Bridges	22%	Increase Baseline Value	
Percent Deck Area of Fair Condition Bridges	70%	Decrease Baseline Value	
Percent Deck Area of Poor Condition Bridges	7%	Decrease Baseline Value	

Freight Performance Measures – Freight Reliability			
Performance Measures	Baseline Value)	Performance Goal 2050	Current Trend
Truck Travel Time Reliability Index	1.41 (2018)	Increase Baseline Value	

Description of Progress

In general, the TTTR index does indicate widespread truck travel time reliability issues in the Capital District. The data supports investments in operational improvements and incident management along I-87/Adirondack Northway, from NYST Exit 24 to Clifton Park; I-90 from NYST Exit 24 to I-787; I-787 from Exit 3 to Exit 5; and at the NYS Thruway toll plazas at Exits 23, 24, 25, and 25A. It is anticipated the NYS Thruway's barrier-free tolling initiative, scheduled to be completed in 2020, will provide a TTTR benefit at the Thruway exits.

CDTC also considers freight-related performance measures as part of the candidate Transportation Improvement Program (TIP) funding merit evaluation process. A project is awarded merit points if it is located on, or provides access to, the CDTC Freight Priority Network, and provides a travel time and/or reliability benefit(s). For more detail on Freight Performance Measures please see the *New Visions 2050 Freight White Paper*.

7.8 Mobility Management

1. **Objective:** Reduce the number of people in the region who commute alone by car.
   - **Measure:** Percent commute modeshare of transit, carpooling, vanpooling, biking, walking and teleworking.
   - **Measure:** Number of registrants in the iPool2 511NY Rideshare portal.

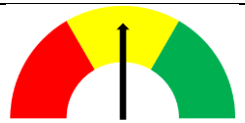
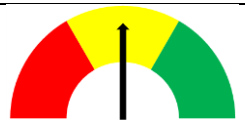
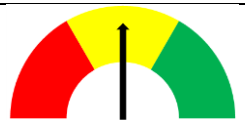
Mobility Management Performance Measures – Single Occupancy Vehicle Commutes			
Performance Measures	Baseline Value	Performance Goal 2050	Current Trend
Percent share of non-SOV modes	20%	Increase Baseline Value	
Registrants in iPool2	3,224 users	Increase Baseline Value	

Description of Progress

The iPool2 portal is actively promoted by 511NY Rideshare and CDTC. It is primarily used as a carpool matching system but plans are being made to expand its content to include information on all non-SOV commuting modes. CDTC, CDTA, 511NY Rideshare and Capital Carshare are developing a collaborative marketing plan to increase the visibility of all programs including iPool2. Many different actions, by multiple regional entities, impact the percent share of non-SOV commuting modes. Current efforts are focused on expanding mode choice by expanding the bikeshare, carshare and vanpooling programs, and adding new Bus Rapid Transit routes and the FLEX microtransit pilot project. Future programming will refocus efforts to work with employers to pilot new Commuter Benefits programs and engage with municipalities to incorporate TDM considerations into their land use processes.

7.9 Safety

1. **Objective:** To reduce the number of Fatal and Serious Injuries related to transportation in the Capital District.
   - **Measure:** Number of fatalities
   - **Measure:** Number of serious injuries
   - **Measure:** Rate of fatalities per vehicle mile traveled (VMT)
   - **Measure:** Rate of serious injuries per vehicle mile traveled
   - **Measure:** Number of Non-Motorized Fatalities
   - **Measure:** Number of Non-Motorized Serious Injuries

Safety Performance Measures			
Performance Measures	Baseline Value	Desired Change (2050)	Current Trend
Number of Fatalities	53 (2018 5-year rolling average)	Decrease Current Value	
Number of Serious Injuries	655 (2018 5-year rolling average)	Decrease Current Value	
Rate of Fatalities per MVMT	0.64 (2018 5-year rolling average)	Decrease Current Value	
Rate of Serious Injuries per MVMT	7.9 (2018 5-year rolling average)	Decrease Current Value	

Safety Performance Measures			
Performance Measures	Baseline Value	Desired Change (2050)	Current Trend
Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries	101 (2018 5-year rolling average)	Decrease Current Value	

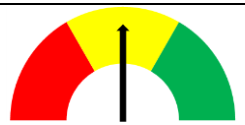
Description of Progress

While progress has been made to reduce fatalities, the region only met one of the state's five 2018 safety targets based on the available crash data. The state may have set ambitious targets in 2018 compared to those set in 2020 but what is of greater concern to the region is the overall increase in serious injuries. While many factors contribute to these numbers and CDTC's influence is not as significant as that of its member agencies, CDTC may need to offer more support to its members through strategic safety programs that could assist with reversing upward trends.

CDTC recently completed a Local Road Safety Action Plan which included extensive data collection and analysis of the safety of local Capital District Roads. A major finding of the plan is that the region's local road crash emphasis areas are the same six as those identified in the New York State SHSP. The data also revealed that crash emphasis areas vary between the four counties indicating the need for tailored strategies by both local governments and CDTC in each section of the region. Engineering, education and enforcement strategies were identified for each emphasis area that could be implemented by local governments, CDTC and other safety partners. For more detail on Safety Performance Measures please see the *New Visions 2050 Safety & Security White Paper*.

7.10 Transit

1. **Objective:** Increase access to transit.
   - **Measure:** Percent of the population residing within ¼ mile of a transit stop/station.
   - **Measure:** Percent of the population residing within ½ mile of a transit stop/station.
2. **Objective:** Increase Transit Use.
   - **Measure:** Total boardings.
3. **Objective:** Increase Transit Cost Effectiveness.
   - **Measure:** Boardings per revenue hour of service (average by mode type).
4. **Objective:** Increase Transit Quality of Service.
   - **Measure:** Headways - Headways refer to the interval of time between vehicles moving in the same direction on the same route.
   - **Measure:** Span - Span refers to the hours over which the service is operated.
   - **Measure:** Passenger Loads - Average load factor is the mean of the number of customers on a vehicle at all stops divided by the maximum seating capacity of the bus. It indicates passenger comfort and convenience during travel, and reflects express routes operating on the highway.
   - **Measure:** Bus Rapid Transit - Each prospective bus rapid transit corridor must attract a minimum of 2 million annual riders on existing services.
   - **Measure:** On-Time Performance - To bring CDTA on-time performance in line with industry standards, at least 85% of trips should arrive on time, defined as arriving between 1 minute earlier or 5 minutes later than the scheduled arrival time.
   - **Measure:** Street Amenities – Provision of shelters, benches, and trash receptacles.
   - **Measure:** Bus Stop Spacing –Space between stops.

Transit Performance Measures			
Performance Measures	Baseline Value	Desired Change (2050)	Current Trend
Percent of the population residing within ¼ mile of a transit stop/station.	41.7% (2019)	Increase Current Value	
Percent of the population residing within ½ mile of a transit stop/station.	55.1% (2019)	Increase Current Value	
Total Boardings	15,687,239 (2018-19)	Increase Current Value	
Boardings Per Revenue Hours of Service – Average by Mode Type	19.4%	Increase Current Value	

Transit Quality of Service Performance Measures

Due to the complexity of these performance measures and the variation between routes, there is not one individual number that can be cited as a baseline value. Instead, Quality of Service measures have been evaluated in a qualitative way, providing a brief description of existing conditions and desired future conditions. A more in-depth analysis of these measures (and all Transit Performance Measures) is provided in the *New Visions 2050 Transit White Paper*.

Transit Performance Measures – Transit Quality of Service		
Performance Measures	Baseline Assessment	Trend Assessment
Headways - Time between vehicles moving in the same direction on the same route.	Two CDTA routes are not meeting the headway threshold in 2019.	Decreased Slightly (Positive Impact)
Span - Service hours of operation by route	BusPlus and Trunk routes nearly meet span thresholds; Neighborhood routes exceed span thresholds	Decreased Slightly (Negative Impact)
Passenger Loads - Average number of customers on a vehicle at all stops divided by the seating capacity of the bus	Average passenger loads have decreased in recent years	Decreased (Positive Impact)
On-Time Performance - Percent of trips arriving between 1 minute earlier or 5 minutes later than the scheduled arrival	Increased for BusPlus, Trunk and Neighborhood routes; minor changes for Express and Commuter routes	Increased (Positive Impact)
Street Amenities – Number and % of benches and shelters at bus stops	Benches and shelters at stops with a high number of boardings is increasing but decreasing at stops with lower weekday boardings	Decreased Slightly (Negative Impact)
Bus Stop Spacing – Average distance between stops per route and service classification	Trunk and neighborhood routes meet average stop spacing standard	NA

Transit Performance Measures – Transit Quality of Service		
Performance Measures	Baseline Assessment	Trend Assessment
Bus Rapid Transit - 2 million or more annual boardings	Two of the three existing and prospective routes exceed threshold	Decreased (Negative Impact)
Bus Rapid Transit - Station pairs exceed 100 boardings per day	One of 19 stations (Broadway in Albany) does not have 100 boardings per day	Decreased (Negative Impact)

Description of Progress

Review Transit performance measures, particularly as they relate to CDTA and its fixed route transit services; have shown that CDTA's transit fleet is aging while at the same time experiencing ridership declines, impacting the cost effectiveness of the services being offered. At the same time, more people have access to transit than in the past and the overall quality of transit has improved. These findings indicate the need for CDTA to re-evaluate underperforming routes as part of its Transit Development Plan update in 2020 and to continue to work with regional partners to ensure land use decision-making supports transit, particularly in areas of concentrated development, and that communities understand land uses in areas of low density are going to have more limited transportation options.

To support the State of Good Repair of capital assets and progress towards federal and CDTC transit performance goals, CDTC's 2019-2024 TIP reserves highly competitive, National Highway Performance Program and Surface Transportation Block Grant Program funds for transit projects in two regional set-asides:

- RG 131 – Bus Rapid Transit ($19.4 M over five years): The Hudson River Corridor BRT Phase 1 (T107) and Washington/Western BRT Phase 1 (T109) projects were funded from RG 131.
- RG 130 – Travel Demand Management (TDM) & Multimodal ($3.0 M over five years). The TDM Multimodal Implementation (T108) was funded from RG 130.

For more detail on Transit Performance Measures please see the *New Visions 2050 Transit White Paper*.