

Performance Planning and Targets

Pursuant to MAP-21 (and carried through in the current federal transportation law, the FAST Act), MPOs must employ a transportation performance management approach in carrying out their federally-required planning and programming activities. The FAST Act requires states and MPOs to establish and approve performance measures related to transportation safety, highway operations, and transit systems. This section provides detailed information on the performance targets, including a discussion on how the Metropolitan Transportation Plan (MTP) and TIP contribute to meeting the targets.

Background

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:

1. Safety – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
2. Capital Assets Condition – To maintain the highway infrastructure and transit capital asset systems in a state of good repair.
3. Congestion Reduction – To achieve a significant reduction in congestion on the National Highway System.
4. System Reliability – To improve the efficiency of the surface transportation system.
5. 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.

6. Environmental Sustainability – To enhance the performance of the transportation system while protecting and enhancing the natural environment.
7. 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

For public transportation, 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).

The DCTC's FFY 2020-2024 TIP was developed and is managed in cooperation with its member agencies to include the New York State Department of Transportation (NYSDOT), Metropolitan Transportation Authority (MTA), and Dutchess County Public Transit. It reflects the investment priorities established in the current MTP, and incorporates comments and input from affected agencies and organizations and the public.

As per 23USC §134(j)(2)(D), TIPs “shall include, to the maximum extent practicable, a description of the anticipated effects of the transportation improvement program toward achieving the performance targets established in the metropolitan transportation plan, linking investment priorities

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to those performance targets.” TIPs and MTPs adopted or amended after the following dates must include performance targets for the associated measures:

- 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 Program

MPOs that do not adopt or amend their MTP prior to these dates are still required to support statewide performance targets or establish their own for the measures discussed above and include “a description of the anticipated effects of the transportation improvement program toward achieving” said targets. This portion of the TIP meets the requirements of 23USC §134(j)(2)(D).

Highway Safety Performance Targets

In March 2016, the Federal Highway Administration (FHWA) published its final rule for the HSIP program and Safety Performance Management Measures in the Federal Register, with an effective date of April 14, 2016. NYSDOT subsequently completed its 2017 New York Strategic Highway Safety Plan (SHSP) in August 2017, with the intent to reduce the number of fatalities and serious injuries resulting from motor vehicle crashes on public roads in the State. The SHSP guides NYSDOT, MPOs, and other partners in addressing safety, and defines a framework for carrying out safety improvements across the

State. NYSDOT’s Annual HSIP Report documents its statewide performance targets.

On August 23, 2018, the DCTC agreed to support the following NYSDOT statewide 2019 safety performance targets (via DCTC Resolution #18-10), which were based on five-year rolling averages as per 23 CFR 490.207:

1. Number of Fatalities: 1,072
2. Rate of Fatalities per 100M Vehicle Miles Traveled (VMT): 0.86
3. Number of Serious Injuries: 10,987
4. Rate of Serious Injuries per 100 million VMT: 8.62
5. Number of Non-motorized Fatalities and Serious Injuries: 2,726

Anticipated Safety Effects

The DCTC places a significant focus on improving transportation safety. The projects recommended in the MTP and programmed on the TIP reflect this focus, and safety stands as a primary consideration in the selection of any project.

Safety Projects in the Metropolitan Transportation Plan

Although many of the recommendations in *Moving Dutchess 2* are not specifically listed under “safety,” the DCTC believes the majority of the Transportation Plan’s recommendations are indirect safety projects: a repaired sidewalk removes a tripping hazard, a new turn lane prevents a rear-end collision,

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a fixed pothole keeps a vehicle in its travel lane, and a new bus makes it easier for a customer to climb aboard. We therefore view the Plan's many recommendations as having some type of safety benefit.

Moving Dutchess 2 recommends 22 location-specific safety projects that seek to improve transportation safety on federal-aid eligible roads. These include a variety of measures such as realigning roads, installing traffic warning signs, improving sight distances, and installing traffic calming devices at high crash locations. The Plan also recommends system-wide safety activities such as sign replacements, special surface treatments, guiderail replacements, the installation of centerline rumble strips, and pedestrian countdown timers.

The DCTC estimates that its safety recommendations will require almost \$94 million to implement, representing eight percent of available federal highway funding through 2040. Some of the recommended projects will require sponsors to secure funds through the HSIP program, but also through State and local sources. For example, Dutchess County intends to use local funds to realign CR 16 (N. Quaker Ln.) in Hyde Park to correct safety deficiencies identified in a Safety Assessment completed by the DCTC.

Safety and Project Selection in the TIP

As specified in its Bylaws, the DCTC uses a variety of project selection criteria to evaluate and prioritize new projects proposed for inclusion in the TIP. The criteria support the

goals and recommendations identified in *Moving Dutchess 2* and various other plans completed by the DCTC. The project selection criteria also complement criteria used by NYSDOT and other member agencies.

The DCTC's project selection criteria use a point-based system to evaluate potential projects, providing more weight to projects that advance key focus areas such as improving transportation safety and security. For example, the DCTC awards points to projects that have the following characteristics:

1. Identified by a member agency as being critical to improving the safety or security of the travelling public.
2. Identified as a strategy in NYSDOT's Strategic Highway Safety Plan.
3. Improves the capacity of federal, state, and local agencies to respond to emergencies or disasters.
4. Uses signal pre-emption technology for emergency response vehicles.

Safety Projects in the TIP

The TIP includes one HSIP-funded project that will materially benefit the safety of the traveling public in Dutchess County: PIN 876203 – pedestrian safety improvements at priority signalized intersections and uncontrolled crosswalks in the City of Poughkeepsie (total cost \$2.2 million). Besides this HSIP funded project, the TIP also includes two safety focused projects that use highway funds from the Surface Transportation Block Grant (STBG) program:

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1. PIN 875730 – Fishkill Ave. reconstruction in the City of Beacon. Total STBG: \$3.8 million.
2. PIN 875780 – Teller Ave. reconstruction in the City of Beacon. Total STBG: \$1.8 million.

These three projects total over \$7.8 million in federal highway funding that will improve transportation safety. This investment represents well over one-third of the federal highway funding programmed in the DCTC’s TIP.

Overall Safety Determination

Based upon its review of the TIP, the DCTC has determined that the overall program will positively contribute to progress made in addressing the safety performance targets established by the State.

Pavement and Bridge Condition Targets

On January 18, 2017, FHWA published the Pavement and Bridge Condition Performance Measures Final Rule in the Federal Register. This second FHWA performance measure rule, which has an effective date of May 20, 2017 (originally February 17, 2017), established six performance measures to assess pavement conditions and bridge conditions for the National Highway Performance Program (NHPP).

The pavement condition measures represent the percentage of lane-miles on the Interstate and non-Interstate National Highway System (NHS) that are in good or poor condition. FHWA established five pavement condition metrics:

International Roughness Index (IRI); cracking percent; rutting; faulting; and Present Serviceability Rating (PSR). FHWA set a threshold for each metric to establish good, fair, or poor condition. A pavement section is classified as being in good condition if three or more metric ratings are good, and in poor condition if two or more metric ratings are poor. Pavement sections that are not good or poor are classified as fair.

The bridge condition measures represent the percentage of bridges, by deck area, on the NHS that are in good or poor condition. The condition of each bridge is evaluated by assessing four bridge components: deck, superstructure, substructure, and culverts. The Final Rule created a metric rating threshold for each component to establish good, fair, or poor condition. 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.

NYSDOT established its highway performance targets on May 20, 2018, and on August 23, 2018, the DCTC agreed to support NYSDOT’s statewide targets for Interstate System and NHS pavement and bridge conditions via DCTC Resolution #18-11. See Table 8-1 for the statewide targets for pavement and bridge conditions.

Anticipated Pavement and Bridge Condition Effects

The DCTC places a significant focus on improving pavement and bridge conditions. The projects recommended in the MTP

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and programmed on the TIP reflect this focus, and improving operations stands as a primary consideration in the selection of any project.

Pavement and Bridge Maintenance Projects in the MTP

Pavement: *Moving Dutchess 2* recommends a variety of highway maintenance projects to maintain the county's federal-aid eligible roads in a state of good repair. These projects include rehabilitation work to repair road segments that are currently rated in poor condition or expected to be in poor condition within the 25-year planning period. The rehabilitation and maintenance of federal-aid eligible roads in Dutchess County is estimated to total over \$286 million during the planning period. This represents over 23 percent of the highway and bridge funding assumed to be available during the planning period.

Bridges: The preservation of federal-aid eligible bridges represents an important focus area for *Moving Dutchess 2*. This is in recognition of the important role that bridges play in our transportation system: a closed bridge can delay response times for emergency responders, disrupt the movement of goods, and greatly diminish personal mobility. It is for these reasons that the DCTC continues to focus on the maintenance needs of state, county, and local bridges. The reconstruction of priority bridges in Dutchess County is estimated to cost almost \$340 million during the planning period. This represents 28 percent of the highway and bridge funding assumed to be available during the 25-year planning period.

Project Selection in the TIP

As mentioned previously, the DCTC's Bylaws includes a set of project selection criteria to evaluate and prioritize new projects proposed for inclusion in the TIP. The criteria support the goals and recommendations identified in *Moving Dutchess 2* and various other plans completed by the DCTC.

Regarding pavement and bridge maintenance, the DCTC's project selection criteria use a point-based system to evaluate potential projects, providing more weight to projects that advance key focus areas such as improving transportation safety and security. For example, the DCTC awards points to projects that are needed to maintain a federal-aid eligible road or bridge in a state of good repair, or are located on a NYSDOT-identified trade, tourist, commuter, or inter-state passenger corridor (e.g. I-84).

Pavement and Bridge Maintenance Projects in the TIP

The TIP includes six STBG-funded projects that will materially benefit highway and bridge performance in Dutchess County during the FFY 2020-2023 STIP period. In total, these projects represent almost \$15.8 million in federal highway funding to improve travel conditions in the county:

1. PIN 806252 – Correct deficient pavement on I-84 from the Putnam County Line to the Taconic State Parkway. Total NHPP: \$9.8 million.
2. PIN 875663 – Mansion St./Fall Kill Creek bridge replacement in the City of Poughkeepsie. Total STBG: \$3.4

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million.

3. PIN 875730 – Fishkill Ave. reconstruction in the City of Beacon. Total STBG: \$3.8 million.
4. PIN 875780 – Teller Ave. reconstruction in the City of Beacon. Total STBG: \$1.8 million.
5. PIN 875983 – Washington St./Fall Kill Creek bridge replacement in the City of Poughkeepsie. Total STBG: \$3 million.
6. PIN 876195 – Carol Dr./Fishkill Creek bridge replacement in the Town of East Fishkill. Total STBG: \$1.2 million.
7. PIN 876196 – Garden St./Fall Kill Creek bridge replacement in the City of Poughkeepsie. Total STBG: \$2.8 million.

These highway and bridge projects represent over two-thirds of all federal highway funding programmed in the DCTC's TIP.

Overall Pavement and Bridge Maintenance Determination

Based upon its review of the TIP, the DCTC has determined that the overall program will positively contribute to progress made in addressing the highway performance targets established by the State and endorsed by the DCTC.

System Performance, Freight, and Congestion Mitigation and Air Quality Targets

On January 18, 2017, FHWA published the system performance, freight, and congestion mitigation and air quality (CMAQ) Performance Measures Final Rule in the *Federal Register*. This third and final FHWA performance measure rule, which has an effective date of May 20, 2017

(originally February 17, 2017), 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.

There are two NHS performance measures that represent the reliability of travel times for all vehicles on the Interstate and non-Interstate NHS. FHWA established the Level of Travel Time Reliability (LOTTR) metric to calculate reliability on both the Interstate and non-Interstate NHS. LOTTR is defined as the ratio of longer travel times (80th percentile) to a normal travel time (50th percentile) during four time periods from the hours of 6 AM to 8 PM each day (AM peak, midday, and PM peak on Mondays through Fridays and weekends). The LOTTR ratio is calculated for each segment of applicable roadway. A segment is reliable if its LOTTR is less than 1.5 during all time periods. If one or more time periods has a LOTTR of 1.5 or above, that segment is unreliable. The measures are expressed as the percentage of person-miles traveled on the Interstate and non-Interstate NHS that are reliable.

The single freight movement performance measure represents the reliability of travel times for trucks on the Interstate system. FHWA established the Truck Travel Time Reliability (TTTR) Index, which is defined as the ratio of longer truck travel times (95th percentile) to a normal truck travel time (50th percentile). The TTTR Index is calculated for each segment of the Interstate system over five time periods from all hours of each day (AM peak, midday, and PM peak on Mondays through Fridays, overnights for all days, and

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

NYS DOT established its highway performance targets on May 20, 2018, and on August 23, 2018, the DCTC agreed to support NYS DOT's statewide targets for Interstate System and NHS pavement and bridge conditions via DCTC Resolution #18-11. See Table 8-2 for the statewide targets for system performance.

Although FHWA established three other traffic congestion and on-road mobile source emissions performance measures – peak hour excessive delay per capita (PHED), non-single occupancy vehicle (SOV) travel, and total on-road mobile source emissions reductions – the DCTC meets all current air quality standards and is therefore not subject to establishing targets for these measures.

System Performance Projects in the MTP

Moving Dutchess 2 recommends 24 projects to improve highway operations in Dutchess County. These include actions that reduce traffic congestion and improve safety such as adding turn lanes, upgrading or retiming traffic signals and redesigning intersections and interchanges. Additionally, the recommendations include NYS DOT and DCDPW systemwide operational maintenance work such as traffic signal and sign repairs, and Intelligent Transportation System (ITS) upgrades. In total, *Moving Dutchess 2* recommends over

\$208 million to improve highway operations in Dutchess County, representing over 17 percent of the highway and bridge funding estimated to be available during the 25-year period.

Project Selection in the TIP

As mentioned previously, the DCTC's Bylaws includes a set of project selection criteria to evaluate and prioritize new projects proposed for inclusion in the TIP. The criteria support the goals and recommendations identified in *Moving Dutchess 2* and various other plans completed by the DCTC.

Regarding system performance, the DCTC's project selection criteria use a point-based system to evaluate potential projects, providing more weight to projects that advance key focus areas such as improving transportation safety and security. For example, the DCTC awards points to projects that have the following characteristics:

1. Project reduces congestion on a road segment identified in the Congestion Management Process as experiencing congestion.
2. Project includes use of Intelligent Transportation System (ITS) technology.
3. Project located on a NYS DOT-identified trade, tourist, commuter, or inter-state passenger corridor (as per New York State Transportation Plan).

Table B-1. NYSDOT Targets for Pavement & Bridge Performance on the NHS and Interstate System

NHS Bridge Condition Targets by Deck Area			
Measure	Baseline	Year 2	Year 4
Good	20.2%	23.0%	24.0%
Poor	11.7%	11.6%	11.7%

NHS Pavement Condition Targets by Interstate and Non-Interstate Facility			
Measure	Baseline	Year 2	Year 4
Interstate % Good	52.2%	46.4%	47.3%
Interstate % Poor	2.7%	3.1%	4.0%
Non-Interstate % Good	20.4%	14.6%	14.7%
Non-Interstate % Poor	8.3%	12.0%	14.3%

Table B-2. NYSDOT Targets for System Performance on the NHS and Interstate System

NHS System Performance Targets by Level of Travel Time Reliability (LOTTR)		
Year	LOTTR Interstate	LOTTR Non-Interstate
2018 (Baseline)	81.3%	77.0%
2020	73.1%	n/a
2022	73.0%	63.4%

Interstate Freight Performance Targets by Truck Travel Time Reliability (TTTR)	
Measure	TTTR
2018 (Baseline)	1.38
2020	2.00
2022	2.11

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Overall System Performance Determination

The DCTC's FFY 2020-2024 TIP has been reviewed and the anticipated effect of the overall program is that it will contribute to the system performance and freight performance targets established by the State.

Transit Asset Management Performance Targets

In July 2016, the Federal Transit Administration (FTA) published the final Transit Asset Management rule. This rule applies to all recipients and sub-recipients of federal transit funding who 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 transit asset management (TAM) plans and establishes state of good repair standards and performance measures for four asset categories: rolling stock, equipment, transit infrastructure, and facilities. The rule went into effect on October 1, 2016.

In Dutchess County, two agencies provide federally-funded transit service: the Metropolitan Transportation Authority (MTA) via Metro-North Railroad, and the Dutchess County Division of Public Transit:

1. Metro-North Railroad provides commuter rail service between Dutchess County and the New York City metropolitan area. Metro-North operates eight train stations in Dutchess County: Poughkeepsie, New Hamburg, and Beacon on the Hudson Line, and Wassaic, Ten Mile River, Dover Plains, Harlem Valley/Wingdale, and Pawling

on the Harlem Line.

2. Dutchess County Public Transit (DCPT) provides fixed route bus service on major road corridors, connecting the County's suburban areas to more densely populated areas and key activity centers. DCPT also operates a variety of fixed routes that support local services in the City of Poughkeepsie and surrounding area. Besides its standard fixed routes, DCPT operates three RailLink routes that provide morning/evening peak hour service to Hudson line train stations, plus a variety of demand response services (e.g. Dial-A-Ride).

On November 17, 2017, the DCTC agreed to support the performance management targets established by the MTA and DCPT in their respective Transit Asset Management Plans (via DCTC Resolution #17-07). The DCTC subsequently agreed to support revised targets for DCPT on August 23, 2018 via DCTC Resolution #18-12; the revised targets stemmed from changes in DCPT's fleet size. Table B-3 shows the performance targets by asset category for the two transit agencies operating within the DCTC planning area.

Anticipated Effects on Transit Assets

The DCTC places a significant focus on maintaining transit-related rolling stock, maintenance equipment, fixed guideway facilities (i.e. rail tracks), and transit facilities. Many of the transit projects recommended in the MTP and programmed on the TIP reflect this focus, and ultimately seek to improve the passenger experience for transit customers.

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Transit Projects in the Metropolitan Transportation Plan

Moving Dutchess 2 includes 34 federal-aid eligible transit recommendations that support existing bus and rail operations in Dutchess County. The transit recommendations cover a variety of projects to maintain and operate the DCPT's bus system through 2040, focusing on preventive maintenance, operating assistance, and vehicle replacements. Other recommendations include the installation of bus stop shelters to improve passenger comfort and safety, and the installation of signs and deployment of information technology to improve the availability of transit information. Specific commuter rail recommendations include the rehabilitation of the Poughkeepsie train station.

The DCTC estimates that the transit recommendations specific to Dutchess County will cost almost \$221 million, which represents 18 percent of all funding estimated to be available over the 25-year planning period. This includes over \$48 million for bus replacements by DCPT alone, directly supporting its TAM-related performance goals.

Transit-related Project Selection in the TIP

As specified in its Bylaws, the DCTC uses a variety of project selection criteria to evaluate and prioritize new projects proposed for inclusion in the TIP. The criteria support the goals and recommendations identified in *Moving Dutchess 2* and various other plans completed by the DCTC. The project selection criteria also complement criteria used by NYSDOT and other member agencies.

The DCTC's project selection criteria use a point-based system to evaluate potential projects, providing more weight to projects that advance key focus areas such as system maintenance and preservation. For example, the DCTC awards points to projects that have the following characteristics:

1. Required to maintain transit vehicles or facilities in a state of good repair.
2. Required to maintain a Metro-North Railroad facility in a state of good repair, including infrastructure, tracks, signals, and stations.
3. Directly improves passenger safety, security, and comfort on or access to a federally funded transit vehicle.
4. Identified by a member agency as being critical to improving the safety or security of the travelling public.

TAM-related Projects in the TIP

The FFY 2020-2024 TIP includes three FTA-funded projects that we believe will materially help achieve the performance targets listed in Table B-3. These projects are expected to be fully obligated by the close of FFY 2024. In total, they alone represent almost \$54 million in FTA funding to improve transit assets in Dutchess County:

1. PIN 8TD009 – Purchase of 13 medium-duty buses by DCPT in FFY 2021. Total FTA funding: \$2.3 million.
2. PIN 8TD014 – Purchase of six heavy-duty buses by DCPT in FFY 2023. Total FTA funding: \$2.3 million.
3. PIN 8TRD93 – FTA Section 5337 block funding to maintain fixed guideway systems in Dutchess County by Metro-North Railroad (FFY 2020-2024). Total FTA funding: \$49

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million.

When combined with non-TAM related projects (e.g. preventive maintenance and operating assistance), the 2020-2024 TIP invests over \$62 million in FTA funds for projects that will maintain or improve transit operations. This investment represents 56 percent of all federal funding programmed in the DCTC's TIP.

Overall TAM Determination

Based upon its review of the TIP, the DCTC has determined that it P will positively contribute to progress made in addressing the performance targets established by member agencies in their Transit Asset Management Plans.

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Table B-3. Transit Asset Management Performance Targets by DCTC Member Agency

Asset Category: Performance Measure	Asset Class	Agency	Useful Life Benchmark (Years)	2019 Target
Rolling Stock				
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Bus	DCPT	14	0%
	Commuter Rail Locomotive	MTA/MNR	39	34%
	Commuter Rail Passenger Coach	MTA/MNR	39	0%
	Commuter Rail Self-propelled Coach	MTA/MNR	39	0%
Equipment				
Age - % of non-revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Trucks and other Rubber Tire Vehicles	MTA/MNR	14	61%
	Steel Wheel Vehicles	MTA/MNR	25	7%
Infrastructure				
% of track segments with performance restrictions (as applicable)	Rail fixed guideway track	MTA/MNR	n/a	2%
Facilities				
Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Administration	MTA/MNR	n/a	28%
	Maintenance	MTA/MNR	n/a	34%
	Parking Structures	MTA/MNR	n/a	24%
	Passenger Facilities	MTA/MNR	n/a	40%