

CMAQ PERFORMANCE PLAN

Adopted September 20, 2018



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DISCLAIMER

The preparation of this report has been financed through the U.S. Department of Transportation's Federal Transit Administration and Federal Highway Administration. This document is disseminated under the sponsorship of the New York Metropolitan Transportation Council (NYMTC) in the interest of information exchange. The contents of this report reflect the views of the authors who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Federal Transit Administration (FTA), Federal Highway Administration (FHWA) or the State of New York. This report does not constitute a standard, specification or regulation.

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TITLE VI STATEMENT

The New York Metropolitan Transportation Council (NYMTC) is committed to compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Executive Order 12898 on Environmental Justice and all related nondiscrimination statutes, rules, regulations and executive orders.

NYMTC assures that no person or group(s) of persons shall, on the grounds of race, color, age, disability, national origin, gender, or income status, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination through the federally-mandated metropolitan transportation planning process undertaken by NYMTC, whether the activities are federally funded or not.

It is also the policy of NYMTC to ensure that all its plans, programs, procedures, policies, and activities do not have disproportionate adverse effects on minority and low-income populations. Minority and low-income communities, as identified through the United States Census, will be engaged to facilitate their full and fair participation in the metropolitan transportation planning process. In addition, NYMTC will provide meaningful access to services for persons with limited English proficiency.

Jose M. Rivera, P.E.
Executive Director

PROGRAM, FINANCE, AND ADMINISTRATION COMMITTEE (PFAC)

RESOLUTION #472

**SETTING URBANIZED AREA TARGETS AND SUPPORTING STATEWIDE TARGETS FOR PERFORMANCE MEASURES
RELATED TO ASSET CONDITIONS AND SYSTEM PERFORMANCE**

WHEREAS, the New York Metropolitan Transportation Council (NYMTC) is a regional council of governments which is the metropolitan planning organization (MPO) for New York City, suburban Long Island and the Lower Hudson Valley; and

WHEREAS, 23 CFR Part 450 and 49 CFR Part 613 require MPOs to establish targets related to the performance measures established under 23 U.S.C. 150(c), 49 U.S.C. 5326(c) and 49 U.S.C. 5329(d) to track the performance of the transportation system; and

WHEREAS, targets that address performance measures are required to be set in accordance with the appropriate target setting framework established in 23 CFR Part 490, and to be coordinated with New York State to ensure consistency to the maximum extent practicable; and

WHEREAS, NYMTC may meet these requirements by either agreeing to plan and program projects that contribute toward the accomplishment of the statewide targets, or by establishing its own targets within 180 days of New York State establishing and reporting its targets; and

WHEREAS, on May 20, 2018, the New York State Department of Transportation (NYSDOT) established statewide targets for the following performance measures:

1. Bridge Condition on the National Highway System (NHS);
2. Pavement Condition on the NHS, subdivided by Interstate and non-Interstate facilities;
3. Travel Time Reliability on the NHS, subdivided by Interstate and non-Interstate facilities;
4. Freight Movement on Interstate roadways that are part of the NHS; and
5. Total On-Road Mobile Source Emissions reduction.

WHEREAS, NYSDOT coordinated the establishment of its targets for each of the above performance categories with the MPOs in New York State; and

WHEREAS, 23 CFR 490.107 (c)(3) requires that MPOs serving Transportation Management Areas as defined in the regulations and meeting criteria specified in CFR 490.105(f)(6)(iii), need to develop a Congestion Mitigation/Air Quality (CMAQ) Performance Plan as required by 23 U.S.C. 149(l); and

WHEREAS, NYMTC has developed a CMAQ Performance Plan, which is included as Attachment 2 to this resolution; and

WHEREAS, the CMAQ Performance Plan establishes targets for Traffic Congestion performance measures on NHS roadways within Urbanized Area (UZA) 63217, designated as the New York-Newark, NY-NJ-CT UZA; and

WHEREAS, these UZA 63217 targets for Traffic Congestion performance measures were established through a coordinated process involving the MPOs whose planning areas are contained in whole or in part within UZA 63217 and include NHS roadways within the UZA, as well as the relevant state departments of transportation; and

WHEREAS, NYMTC will update the CMAQ Performance Plan biennially on the same schedule as the New York State's required biennial Performance Reports.

NOW, THEREFORE, BE IT RESOLVED THAT, that NYMTC agrees to support the New York State performance targets for each of the five performance categories as shown above and in Attachment 1 and will plan and program projects that contribute to the achievement of the targets; and

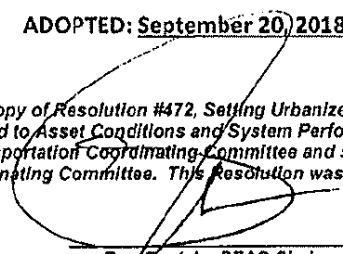
BE IT FURTHER RESOLVED THAT, PFAC adopts the CMAQ Performance Plan, presented as Attachment 2 to this resolution, which includes UZA 63217 targets for the Traffic Congestion performance measures; and

BE IT FURTHER RESOLVED THAT, PFAC instructs the Executive Director to submit the adopted CMAQ Performance Plan to NYSDOT as required.

This resolution shall take effect on the twentieth day of September two thousand and eighteen.

ADOPTED: September 20, 2018

"I hereby certify that the above is a true copy of Resolution #472, Setting Urbanized Area Targets and Supporting Statewide Targets for Performance Measures Related to Asset Conditions and System Performance, and was motioned by Mr. Patrick Gerdin, representing the Mid-Hudson South Transportation Coordinating Committee and seconded by Mr. Chris Chatterton, representing the Nassau/Suffolk Transportation Coordinating Committee. This Resolution was adopted and passed unanimously."



Ron Epstein, PFAC Chair

1. OVERVIEW

This plan responds to the federal requirements for Transportation Performance Management (TPM) (23 CFR 490.107(c)(3) and 23 USC 149(l)) associated with the Congestion Mitigation/Air Quality (CMAQ) funding program. These required performance measures include Annual Hours of Peak Hour Excessive Delay per Capita (PHED) and Percent of Non-Single Occupied Vehicle Travel (Non-SOV Travel) for the relevant urbanized area(s), and Total Emissions Reduction for mobile sources in the relevant air quality nonattainment and maintenance areas.

Federal metropolitan transportation planning regulations require the implementation of TPM requirements under which states and metropolitan planning organizations (MPOs) will “transition to a performance-driven, outcome-based program that provides for a greater level of transparency and accountability, improved project decision-making, and more efficient investment of federal transportation funds.”

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have issued rules for the implementation of TPM. Each rulemaking lays out the goals of performance for an area of transportation, establishes the measures for evaluating performance, specifies the data to be used to calculate the measures, and then sets requirements for the setting of targets.

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

- *Highway & Transit Safety;*
- *Asset Management; and*
- *System Performance.*

In this fashion, the FHWA and FTA have provided direction and guidance on requirements for implementation of PBPP, including specified measures and data sources, forecasting performance, target-setting, documentation in the statewide and metropolitan long-range transportation plans and Transportation Improvement Programs (TIPs), and reporting requirements.

2. NYMTC AND ITS PLANNING CONTEXT

Federal planning regulations require any urbanized area (UZA) with a population greater than 50,000 to have an MPO to plan for and make decisions on the use of federal transportation funding. MPOs ensure that existing and future expenditures for transportation projects and programs are based on a continuing, cooperative and comprehensive planning process. Among other functions, MPOs cooperate with State and public transportation operators to program federal funds for eligible transportation projects.

As the MPO for New York City, suburban Long Island and the Lower Hudson Valley, NYMTC serves as a collaborative planning forum for the five boroughs of New York City and the suburban counties of Nassau and Suffolk on Long Island, and Putnam, Rockland and Westchester in the Lower Hudson Valley. NYMTC joins the City of New York and the suburban counties with the State of New York and the Metropolitan Transportation Authority in a regional council to undertake the federally-mandated planning process to access federal funding for transportation projects.

NYMTC's planning area shares the New York--Newark, NY--NJ--CT UZA (UZA 63217) with the North Jersey Transportation Planning Authority. The NYMTC planning area also is part of several air quality non-attainment or maintenance areas designated under the Clean Air Act Amendments of 1990 for several pollutants, including ground-level ozone, carbon monoxide, and fine and coarse particulate matter. These designations are all relevant to the required performance measures associated with the CMAQ program.

3. THE CMAQ PROGRAM

The U. S. Congress first authorized the CMAQ funding program as part of the Intermodal Surface Transportation Efficiency Act of 1991. The CMAQ program has been reauthorized in each of the four subsequent federal transportation acts to the present day and is intended to support surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief. According to FHWA:

CMAQ provides a flexible funding source for State and local governments to fund transportation projects and programs to help meet the requirements of the Clean Air Act (CAA) and its amendments. The legislation is codified at 23 USC Sec 149. CMAQ money supports transportation projects that reduce mobile source emissions in areas designated by the U.S. Environmental Protection Agency (EPA) to be in nonattainment or maintenance of the national ambient air quality standards. Since its beginning in 1992, the CMAQ program has provided more than \$30 billion for over 29,000 transportation-related emission reduction

projects for State transportation departments (DOTs), metropolitan planning organizations (MPOs), and other sponsors across the country.

4. MEASURING PERFORMANCE

FHWA issued the *System Performance: Highway and Freight, Congestion Mitigation and Air Quality (CMAQ) Final Rule* on January 18, 2017, with an effective date of May 20, 2017. The rule covered three performance measures for Highways and Freight: 1) Interstate Travel Time Reliability, 2) Non-Interstate National Highway System Travel Time Reliability, and 3) Freight Reliability. In addition, the rule established the three performance measures described earlier that are associated with the CMAQ program: 1) Annual Hours of PHED per Capita 2) Percent of Non-SOV Travel, and 3) Total Emissions Reduction.

A. TARGET SETTING

The Final Rule gives State DOTs one year from the effective date of the Final Rule to set their initial performance targets for the measures in question. MPOs then have an additional 180 days from the date of establishment by an appropriate State DOT to either set their own targets or support the State DOTs' targets. . For the first reporting period, the PHED and Non-SOV Travel measures apply to non-attainment and maintenance areas containing National Highway System mileage, and with populations of one million or more¹. However, for the PHED and Non-SOV Travel measures, State DOTs and MPOs are required to mutually establish a single target for each UZA within their boundaries, in whole or in part. UZAs which stretched into other MPO planning areas and/or other states still require a single target to be set and progress against this target measured. In these cases, State DOTs and MPOs are required to work together to address the target setting and other TPM requirements for the entire UZA.

For the Total Emissions Reduction measure, State DOTs, in coordination with MPOs, must establish statewide targets for total emissions reduction of on-road mobile source emissions for all nonattainment and maintenance areas within the state and for each applicable criteria pollutants and precursors. State DOTs were required by the Final Rule to establish targets by May 20, 2018 and report the targets to FHWA by October 1, 2018. MPOs are required to establish targets for all nonattainment and maintenance areas within their planning area, in whole or in part, within 180 days after State DOTs have set their targets. In both cases, the targets reflect the anticipated cumulative emissions

¹ These measures will apply to areas of 200,000 or more in subsequent reporting periods.

reductions reported through the CMAQ Public Access System. MPOs do not have to directly report their targets to FHWA.

B. PERFORMANCE PERIODS

Performance periods are specific, on-going four year time periods established by the Final Rule during which condition or performance is measured and evaluated to assess changes to baseline conditions or performance; and to track progress toward the achievement of the targets that represent the intended condition or performance level at the midpoint and at the end of that period. The term “performance period” applies to all performance measures required by the infrastructure condition (PM2) and system performance (PM3) measures final rules., Highway Safety performance measures must be reported annually. Each performance period covers a four-year duration beginning on a specified date.

C. DATA REQUIREMENTS

The Final Rule specifies the sources of data for the CMAQ-related performance measures, which are described below:

- Urbanized area data. State DOTs are required to submit urbanized area data for establishing and reporting on targets for the two CMAQ Traffic Congestion measures (PHED and Non-SOV Travel). The boundaries of urbanized areas are required to be identified based on the most recent U.S. Decennial Census, unless FHWA approves adjustments to an urbanized area. FHWA adjusted UZA boundaries were used for the target setting and reporting activities covered by this performance plan.
- Percentage of non-single occupancy vehicle travel All affected parties agreed to the use of the American Community Survey (ACS) Commuting (Journey to Work) data from the U.S. Census Bureau for the Non-SOV Travel measure. The Final Rule allows State DOTs and MPOs to use localized surveys or measurements in place of the ACS, at their discretion.
- Nonattainment and maintenance areas data. State DOTs are required to use the nonattainment and maintenance areas boundaries based on the effective date of U.S. Environmental Protection Agency (EPA) designations.
- Travel time data set. The Final Rule requires travel time data needed to calculate the measures to come from the National Performance Management Research Data Set (NPMRDS) provided by FHWA monthly to the States and MPOs, unless

the State DOT requests, and FHWA approves, the use of an equivalent data source(s) that meets the requirements in the Final Rule. The State DOT is required to establish, in coordination with applicable MPOs, a single travel time data set (i.e., NPMRDS or equivalent data set) that will be used to calculate the metrics that inform the required performance measures. The same data source is required for each calendar year and State DOTs and MPOs must use the same travel time data set for each reporting segment for the purposes of calculating the metrics and measures. The NPMRDS was used as the source for travel reliability data for the PHED that is reported on in this plan. Other data sources were used to inform the Non-SOV Travel and Total Emissions Reduction measures.

- CMAQ Public Access System. This is a data base that collects FHWA-approved CMAQ project data submitted through the annual CMAQ reporting process. The CMAQ Public Access System makes available searchable, read only, project information from 1992 to present in various reporting formats. This source was used to inform the Total Emissions Reduction measure.

5. URBANIZED AREA TARGET SETTING

As indicated earlier, NYMTC shares UZA 63217 with the North Jersey Transportation Planning Authority (NJTPA), its sister MPO in northern New Jersey. Since the population of this UZA exceeds 1 million, UZA targets are required to be set for the two CMAQ-related performance measures in the first performance period. Setting these targets for UZA 63217 required coordination between NYMTC, NJTPA and the New York State and New Jersey departments of transportation. A coordination group containing representatives from these entities was established for that purpose.

Since small portions of UZA 63217 cross into the planning areas of the Delaware Valley Regional Planning Commission (DVRPC) in central New Jersey and the Western Connecticut Council of Governments (WestCOG) adjacent to Westchester County, those two organizations were also included in the coordination group discussions. Given the participation of these MPOs, the discussions also included the Pennsylvania and Connecticut departments of transportation. However, it was determined that the tiny portion of WestCOG's planning area did not require a separate action on the part of that organization, since there were no National Highway System (NHS) roadways in that small area. DVRPC supports the targets that are subject to this plan.

A. PERCENT OF NON-SOV TRAVEL PERFORMANCE MEASURE

As defined by FHWA, Non-SOV Travel is travel occurring using modes other than driving alone in a motorized vehicle. The performance measure for Non-SOV Travel is a percentage of all surface passenger travel occurring in UZA.

I. TARGET SETTING CONSIDERATIONS FOR THE NON-SOV TRAVEL MEASURE

There were many considerations recognized during the target setting process. To establish the targets, the UZA coordination group considered several different aspects of the measure.

Policy Goals -- this performance measure assesses the level of non-SOV travel in the UZA as a means of mitigating traffic congestion and mobile source emissions. The policy goals of all the partner agencies seek to increase travel by non-SOV modes, including public transit, ridesharing, walking, and biking.

Recent Trends – the proportion of non-SOV travel in the UZA has modestly increased in recent years, concurrent with a growth in transit ridership, population growth and employment changes. Although true for the UZA as a whole, localized variance in this trend is likely within specific areas of the UZA, such as New York City. Continued increases in ride-hailing using transportation network companies (TNCs), walking and biking have contributed to this trend.

Data Sources -- the proportion of non-SOV travel for the UZA has been measured using the ACS Table DP03 journey-to-work travel of the UZA residents. The baseline measurement uses the 2016 ACS Five-Year Estimate, which is the latest data available. Non-SOV travel is measured as the percentage of the UZA population that predominantly do not travel to work by driving alone in a car, van, or truck, including travel avoided by telecommuting.

II. SETTING THE NON-SOV TRAVEL TARGETS FOR UZA 63217

Existing Condition Measurement -- the existing condition for the Non-SOV Travel measure is estimated as 51.6% of the UZA residents who do not predominantly travel to work by driving alone in a car, van or truck. Figure 1 below presents the trend analysis which was used to measure the baseline condition.

Target Setting – the baseline measurement helps to set the two-year and four-year performance targets for the Non-SOV Travel measure. The relevant agencies and

organizations that coordinated to measure performance for UZA 63217 have set the following targets for Non-SOV Travel:

- The two-year target for the Non-SOV Travel measure has been set as **51.6%**.
- The four-year target for the Non-SOV Travel measure has been set as **51.7%**.

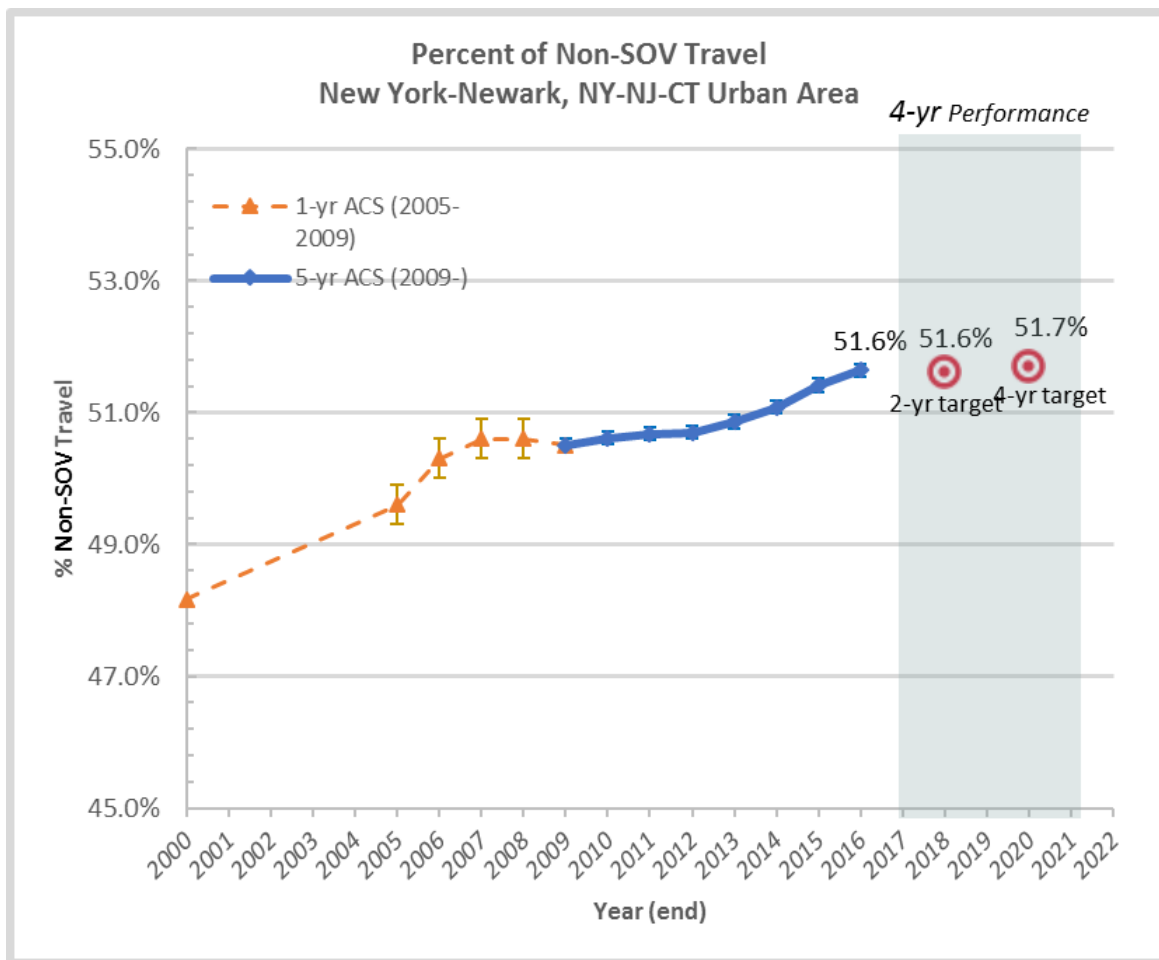


FIGURE 1: NON-SOV TRAVEL TRENDS AND TARGETS

B. ANNUAL HOURS OF PEAK HOUR EXCESSIVE DELAY PER CAPITA

Peak Hour Excessive Delay (PHED) is calculated for all segments of the National Highway System within the urbanized area. PHED is defined as the extra amount of time spent in congested conditions defined by speed thresholds that are lower than a normal

delay threshold during peak hours. The delay is measured in hours per person over a one-year period.

For this measure, the Final Rule defines the speed threshold as either 20 mph or 60 percent of the posted speed limit, whichever is greater. FHWA requires that weekday data must be employed for this performance measure, from a morning peak period of 6:00AM – 10:00AM, and one of two evening peak periods: 3:00PM – 7:00PM or 4:00PM – 8:00PM. The earlier evening peak was used for all calculations.

For the PHED measure, only a four-year target is reported in the State’s baseline performance period report. There is no requirement for States to report two-year targets or baseline condition for PHED measure in the report for the first performance period. For the Non-SOV Travel measure, both two-year and four-year target is required. With the first mid performance period progress report, due October 1, 2020, four-year targets may be adjusted, and two-year condition/performance will be reported as baselines.

I. TARGET SETTING CONSIDERATIONS FOR THE PHED MEASURE

To establish targets for the PHED measure, the UZA coordination group considered several different aspects of the measure.

Policy Goals - this performance measure assesses excessive traffic congestion and the role that it plays in pollutant emissions. The policy goals of all partner agencies address the need to appropriately manage and mitigate traffic congestion. However, there was a recognition that it is not possible or even desirable to eliminate all congestion delay; some congestion accompanies economic activity and thriving places.

Recent Trends - no historical trend data was available for this measure. Related metrics for congestion and overall delay were evaluated and demonstrated increases in recent years. The impacts of transportation network companies (TNCs) and of emerging advanced transportation technology on overall congestion and delay are only marginally understood at present and it was difficult to assess their impact on the target value. The ability of the existing public transit system to accommodate increased ridership was considered limited over the performance period.

Data Sources - PHED is a measure of congestion on the National Highway System (NHS), which is comprised mostly of limited access and major and minor arterial roadways in the UZA. Some collector roadways may also be components of the NHS. Travel times used for this measure were taken from the NPRMDS, while traffic

volumes were obtained from the national Highway Performance Monitoring System (HPMS). Vehicle occupancies and time-of-day travel distributions were derived from the U.S. Census Bureau's American Community Survey.

II. SETTING THE PHED TARGETS FOR UZA 63217

Existing Condition Measurement -- The current existing condition for PHED per capita measure of UZA 63217 is estimated at approximately 20 hours per capita.

Target Setting – the baseline measurement helps to set the four-year performance targets for the Non-SOV Travel measure. A two-year target is not required for this first performance period by the Final Rule. Therefore, the relevant agencies and organizations that coordinated to measure performance for UZA 63217 have set the following target for PHED:

- The four-year target for Annual Hours of PHED in UZA 63217 is **22 hours per capita**.

6. TOTAL EMISSIONS REDUCTION TARGET SETTING

The Total Emissions Reduction measure is applicable to all States and MPOs with areas designated as nonattainment or maintenance for the National Ambient Air Quality Standard (NAAQS) related to the following criteria pollutants defined in the Clean Air Amendments of 1990: ground-level ozone from the precursor pollutants volatile organic compounds (VOC) and nitrogen oxides (NOx), carbon monoxide (CO), and coarse (PM10) and fine (PM2.5) particulate matter.

I. TARGET SETTING CONSIDERATIONS FOR THE TOTAL EMISSIONS REDUCTION MEASURE

Data Sources - the CMAQ Public Access System is the data source for this measure required by FHWA. It contains data to estimate the amounts of criteria pollutants that are reduced statewide for states with nonattainment areas that have funded projects with CMAQ funds. Total Emissions Reduction is calculated by summing two- and four-year totals of emissions reductions of applicable criteria pollutant and precursor, in kilograms per day, for all projects using CMAQ funds.

II. SUPPORTING NEW YORK STATE'S TOTAL EMISSIONS REDUCTION TARGETS

Per the Final Rule (see section 4(a) above), NYMTC is opting to support New York State's Total Emissions Reduction target, which is set by the New York State Department of Transportation (NYSDOT).

Baseline Measurement - the baseline measurement is calculated using the 2017 data from the CMAQ Public Access System, which is the latest data available. The baseline measurement for the Total Emission Reduction from CMAQ projects for New York State follows:

- VOCs – 32.452 kilograms per day
- NO_x – 83.606 kilograms per day
- CO – 611.939 kilograms per day
- PM_{2.5} – 5.480 kilograms per day
- PM₁₀ – 12.885 kilograms per day

Target Setting -- the two-year and four-year targets for the cumulative statewide Total Emission Reduction measure set by NYSDOT appear below. These targets were set by applying linear regression to the cumulative annual emission reductions for each criteria pollutant for the 2014 through 2017 period. Outlier projects were removed from the linear regression to ensure a more representative trend line. Additionally, the established trend line was adjusted to account for fleet efficiency improvements resulting from federal tailpipe emissions and fuel economy standards during the performance period.

The cumulative targets were then set by multiplying the forecasted daily measure for each year from the linear regression by 365 days (366 days in the case of 2020) to arrive at annual total emissions reduction estimates and then summing by the number of years for a cumulative target, as shown below, of total kilograms reduced over the performance period.

Cumulative Statewide Total Emissions Reduction Targets		
Pollutant	Two-Year Target	Four-Year Target
VOC	22,979	42,765
NOx	58,591	107,713
CO	437,781	839,633
PM2.5	3,920	7,482
PM10	9,312	18,132

7. PROGRAMMED CMAQ PROJECTS FOR THE PERFORMANCE PERIOD

This CMAQ Performance Plan is required to include a listing of the projects identified for CMAQ funding and an assessment of how these projects will contribute to the achievement of the Non-SOV Travel and PHED targets set for UZA 63217 (see Section 5 above), and how they will support progress toward the cumulative statewide Total Emissions Reduction targets (see Section 6 above). The listing of CMAQ projects programmed in NYMTC's Federal Fiscal Years 2017-2021 TIP appears in Appendix 1 to this document. A total of 88 projects are currently programmed in the TIP, totaling just over \$926 million of CMAQ funding. An assessment of how these programmed projects contribute to each of the targets appears below.

A. NON-SOV TRAVEL TARGETS FOR UZA 63217

The CMAQ projects currently programmed include 40 projects which enhance or expand transit service levels and/or access to transit services; facilities for non-motorized transportation modes; and/or fund demand management programs which facilitate increases in market share for non-SOV modes of travel. In total, just over \$717 million of CMAQ funding – just over three quarters of the total in the TIP -- have been programmed for these projects.

Several of these projects contribute to major transit system expansions such as the Second Avenue Subway Phase 1 and enhanced traveler access such as Moynihan Station Development Phase 2 in New York City; and new transit services such as the Route 110 Bus Rapid Transit (BRT) corridor and Nassau Hub BRT initiative on Long Island, and the Lower Hudson Transit Link in the Lower Hudson Valley. These strategic improvements and enhancements are consistent with the regional transit approach outlined in NYMTC's current Regional Transportation Plan, *Plan 2045*.

Among the 40 projects are also significant bikeway and trailway projects, bus fleet replacements with alternative fuel or hybrid electric vehicles, park & ride and station access improvements, smaller scale transit service improvements and demand management programs. Again, these improvements are generally consistent with various aspects of *Plan 2045*. Taken together they should contribute significantly toward increasing non-SOV travel in the UZA.

B. PHED TARGETS FOR UZA 63217

Although all the projects identified as contributing to the Non-SOV Travel targets will also make contributions to achieving the PHED targets, an additional 44 CMAQ projects programmed in the current TIP will specifically contribute to congestion reduction and therefore a reduction in PHED. These projects program just over \$199 million of CMAQ funding to strategically address congestion in corridors, at intersections, and in subareas.

The congestion-related CMAQ projects include county-wide and corridor-level traffic signalization enhancements, incident management and variable message sign programs, roadway and intersection improvement projects, Intelligent Transportation Systems deployments in major limited access corridors, and a freight rail modernization project at a major regional distribution market to reduce truck vehicle miles of travel. These improvements were programmed based on consistency with various aspects of *Plan 2045*. Taken together, they should contribute significantly toward reducing PHED in the UZA.

C. CUMULATIVE STATEWIDE TOTAL EMISSIONS REDUCTION TARGETS

Projects programmed for CMAQ funding in the current TIP reduce emissions by either shifting travel onto more efficient modes such as transit and ridesharing, and non-motorized modes such as pedestrian and bicycles, thus reducing overall vehicle miles of travel and consequently, vehicular emissions; or by reducing traffic congestion and smoothing traffic flow. Traffic congestion also adds to vehicular emissions levels.

All the CMAQ-funded projects which can contribute to achieving the Non-SOV Travel and PHED targets will also contribute to achieving the cumulative statewide Total Emissions Reduction targets, since they can increase utilization of more efficient travel roads and/or improve traffic congestion. Additionally, just over \$7.6 million of CMAQ funding is programmed for projects which retrofit diesel-powered vehicles to reduce emissions or provide supporting infrastructure to encourage use of electric vehicles. Both activities are consistent with the strategies identified in *Plan 2045*.

*APPENDIX 1 – LISTING OF PROGRAMMED CMAQ
PROJECTS*

CMAQ Projects Programmed in the Federal Fiscal Years 2017-2021 Transportation Improvement Program							
PIN	Subarea	Sponsor	Project Name	Programmed Funding	Performance Measure(s) Impacted		
					Non-SOV Travel	PHED	Total Emissions Reduction
TRANTECH	Long Island	MTA LONG ISLAND RR	TRANSIT TECHNICAL ASSISTANCE PROGRAM (FORMERLY TRANTECH)	\$1,500	X	X	X
075936	Long Island	NASSAU COUNTY	NASSAU COUNTY TRAFFIC SIGNAL EXPANSION PHASE 3	\$4,200		X	X
075998	Long Island	NASSAU COUNTY	NASSAU COUNTY TRAFFIC SIGNAL EXPANSION, PHASE 6	\$1,400		X	X
076014	Long Island	NASSAU COUNTY	OCEAN AVE @ MERRICK RD INTERSECT IMPROVEMENT	\$1,790		X	X
076021	Long Island	NASSAU COUNTY	NASSAU COUNTY TRAFFIC SIGNAL EXPANSION PHASE 5	\$1,000		X	X
076040	Long Island	NASSAU COUNTY	NASSAU COUNTY 21 VARIABLE MESSAGE SIGN INSTALLATION PHASE 1	\$4,200		X	X
076041	Long Island	NASSAU COUNTY	NASSAU COUNTY SIGNAL COMMUNICATION EXPANSION PHASE 2	\$7,650		X	X
076046	Long Island	NASSAU COUNTY	NASSAU COUNTY SIGNAL EXPANSION PHASE 9	\$4,792		X	X
076049	Long Island	NASSAU COUNTY	MERRICK RD SIGNAL EXPANSION PH1 (MERRICK TO MASSAPEQUA)	\$1,000		X	X
076050	Long Island	NASSAU COUNTY	NASSAU VARIABLE MESSAGE SIGN PHASE 2	\$1,780		X	X
076124	Long Island	NASSAU COUNTY	MERRICK ROAD SIGNAL EXPANSION PH2 (VALLEY STREAM TO FREEPORT)	\$5,750		X	X
076125	Long Island	NASSAU COUNTY	NASSAU COUNTY TRAFFIC SIGNAL EXPANSION PHASE 10	\$10,400		X	X
082498	Long Island	NASSAU COUNTY	HUB TRANSPORTATION STUDY AND INITIAL OPERATING SEGMENT	\$15,600	X	X	X
082904	Long Island	NASSAU COUNTY	PURCHASE 103 CNG BUSES	\$15,550	X	X	X
080556	Long Island	NEW YORK STATE DOT	INCIDENT MANAGEMENT - HELP VEHICLES ON LONG ISLAND EXPRESSWAY & PARKWAYS	\$2,400		X	X

CMAQ Projects Programmed in the Federal Fiscal Years 2017-2021 Transportation Improvement Program							
PIN	Subarea	Sponsor	Project Name	Programmed Funding	Performance Measure(s) Impacted		
					Non-SOV Travel	PHED	Total Emissions Reduction
080768	Long Island	NEW YORK STATE DOT	SIGNAL TIMING CONTRACT, NASSAU COUNTY	\$1,200		X	X
080769	Long Island	NEW YORK STATE DOT	SIGNAL TIMING CONTRACT, SUFFOLK COUNTY	\$1,200		X	X
076032	Long Island	SUFFOLK COUNTY	RECONSTRUCTION OF CR97 BETWEEN NY25A & CR 65 / DIVISION ST	\$46,710		X	X
076114	Long Island	SUFFOLK COUNTY	ROUTE 110 BUS RAPID TRANSIT (BRT) CORRIDOR	\$26,400	X	X	X
076132	Long Island	SUFFOLK COUNTY	TRAFFIC SIGNAL RE-TIMING - DESIGN AND IMPLEMENTATION	\$2,400		X	X
839096	Lower Hudson Valley	LOCAL	ROUTE 6 @ WESTBROOK DRIVE, INTERSECTION IMPROVEMENTS.	\$0,507		X	X
875899	Lower Hudson Valley	LOCAL	PELHAM RD TRAFFIC SIGNALS (PELHAM MANOR TO MAIN ST)	\$0,110		X	X
875900	Lower Hudson Valley	LOCAL	MAIN STREET & HUGUENOT STREET TRAFFIC OPERATIONS	\$7,295		X	X
875902	Lower Hudson Valley	LOCAL	WEBSTER AVENUE TRAFFIC SIGNALS: MAIN STREET	\$0,195		X	X
875907	Lower Hudson Valley	LOCAL	PASCACK RD @ LAWRENCE ST: INTERSECTION RECONSTRUCTION	\$1,348		X	X
875966	Lower Hudson Valley	LOCAL	GERMONDS ROAD: PALISADES INTERSTATE PARKWAY RAMPS RECONSTRUCTION	\$0,797		X	X
875967	Lower Hudson Valley	LOCAL	TOWN OF ORANGETOWN TRAFFIC SIGNALS	\$0,232		X	X
875968	Lower Hudson Valley	LOCAL	ROUTE 59 SIDEWALKS: ROUTE 306 TO SPRING VALLEY HIGH SCHOOL	\$0,482	X	X	X
875973	Lower Hudson Valley	LOCAL	WILMOT ROAD SIGNALS: GRAND BOULEVARD TO GOLDEN HORSE SHOPPING CENTER	\$0,018		X	X

CMAQ Projects Programmed in the Federal Fiscal Years 2017-2021 Transportation Improvement Program							
PIN	Subarea	Sponsor	Project Name	Programmed Funding	Performance Measure(s) Impacted		
					Non-SOV Travel	PHED	Total Emissions Reduction
875976	Lower Hudson Valley	LOCAL	ROUTE 9 TRAFFIC SIGNALS: OPERATIONAL IMPROVEMENT ALONG ROUTE 9	\$0.313		X	X
878186	Lower Hudson Valley	LOCAL	ORANGETOWN DIESEL RETROFITS	\$0.424			X
M702-03-01	Lower Hudson Valley	MTA METRO-NORTH RR	CROTON FALLS PARK AND RIDE	\$13.786	X	X	X
882351	Lower Hudson Valley	NEW YORK STATE DOT	LOWER HUDSON TRANSIT LINK: INTEGRATED CORRIDOR MANAGEMENT & RAMP METERING	\$28.201	X	X	X
882352	Lower Hudson Valley	NEW YORK STATE DOT	LOWER HUDSON TRANSIT LINK: SYSTEM INTEGRATOR	\$8.495	X	X	X
806245	Lower Hudson Valley	NEW YORK STATE DOT	I-84 INTELLIGENT TRANSPORTATION SYSTEMS: PENNSYLVANIA BORDER TO CONNECTICUT BORDER	\$2.409		X	X
880688	Lower Hudson Valley	NEW YORK STATE DOT	WESTCHESTER COUNTY COUNTY COMMUTE ALTERNATIVES PROGRAM	\$2.240	X	X	X
880690	Lower Hudson Valley	NEW YORK STATE DOT	MTA METRO-NORTH RAILROAD CONNECTING SERVICES PROGRAM	\$1.328	X	X	X
881204	Lower Hudson Valley	NEW YORK STATE DOT	SIGNAL IMPROVEMENTS	\$1.120		X	X
881463	Lower Hudson Valley	NEW YORK STATE DOT	SIGNAL UPGRADES	\$0.538		X	X
881464	Lower Hudson Valley	NEW YORK STATE DOT	SIGNAL COMMUNICATIONS	\$5.700		X	X
882244	Lower Hudson Valley	NEW YORK STATE DOT	PUTNAM COUNTY MOVES SHUTTLE NETWORK	\$0.480	X	X	X
882357	Lower Hudson Valley	NEW YORK STATE DOT	PUTNAM COUNTY COUNTY PARK & RIDE EXPANSION & IMPROVEMENT	\$2.502	X	X	X
882358	Lower Hudson Valley	NEW YORK STATE DOT	I-684 PARK & RIDE EXPANSION & IMPROVEMENTS	\$2.502	X	X	X

CMAQ Projects Programmed in the Federal Fiscal Years 2017-2021 Transportation Improvement Program							
PIN	Subarea	Sponsor	Project Name	Programmed Funding	Performance Measure(s) Impacted		
					Non-SOV Travel	PHED	Total Emissions Reduction
895009	Lower Hudson Valley	NEW YORK STATE DOT	COACH BUS MARKETING AND PARKING CONTRACT	\$1,020	X	X	X
8T0402	Lower Hudson Valley	NEW YORK STATE DOT	TRAVEL DEMAND MANAGEMENT GRANT PROGRAM	\$9,200	X	X	X
801073	Lower Hudson Valley	NYS THRUWAY AUTHORITY	INTERSECTION IMPROVEMENTS @ ROUTE 9 AND I87/I287	\$1,040		X	X
8TM045	Lower Hudson Valley	PUTNAM COUNTY	MAYBROOK BIKEWAY I - PHASE A CONSTRUCTION.	\$1,705	X	X	X
8TM077	Lower Hudson Valley	PUTNAM COUNTY	MAYBROOK BIKEWAY III - PHASE A	\$1,775	X	X	X
8TM082	Lower Hudson Valley	PUTNAM COUNTY	TWENTY (20) REPLACEMENT BUSES	\$1,523	X	X	X
875609	Lower Hudson Valley	PUTNAM COUNTY	FAIR ST: RT 52-JOHN SIMPSON ROAD IMPROVEMENTS	\$2,500		X	X
875906	Lower Hudson Valley	PUTNAM COUNTY	MAHOPAC FALLS TRAILWAY CONSTRUCTION	\$1,526	X	X	X
876197	Lower Hudson Valley	PUTNAM COUNTY	STONELEIGH AVE @ DREWVILLE ROAD INTERSECTION IMPROVEMENTS	\$2,800		X	X
8TR212	Lower Hudson Valley	ROCKLAND COUNTY	MONSEY PARK AND RIDE LOT, TOWN OF RAMAPO	\$3,706	X	X	X
875898	Lower Hudson Valley	ROCKLAND COUNTY	INTERSECTION RECONSTRUCTION: SUFFERN LANE @ HAMMOND ROAD	\$4,888		X	X
880689	Lower Hudson Valley	ROCKLAND COUNTY	ROCKLAND COUNTY COMMUTE ALTERNATIVES	\$2,480	X	X	X
882332	Lower Hudson Valley	ROCKLAND COUNTY COUNTY	ROCKLAND COUNTY DIESEL RETROFITS	\$0,968			X
8TM012	Lower Hudson Valley	WESTCHESTER COUNTY	REPLACE 78 ARTICULATED BUSES	\$25,658	X	X	X

CMAQ Projects Programmed in the Federal Fiscal Years 2017-2021 Transportation Improvement Program							
PIN	Subarea	Sponsor	Project Name	Programmed Funding	Performance Measure(s) Impacted		
					Non-SOV Travel	PHED	Total Emissions Reduction
X77340	New York City	HUDSON RIVER PARK TRUST/NEW YORK STATE DOT	REDEVELOPMENT OF PIER 54 CONNECTOR IN HUDSON RIVER PARK PHASE 2	\$5.814	X	X	X
X82266	New York City	MOYNIHAN STATION DEVELOPMENT CORPORATION	MOYNIHAN STATION REDEVELOPMENT / IMPROVEMENTS, PHASE 2	\$21.965	X	X	X
CM09-6891	New York City	MTA NYC TRANSIT	PURCHASE 940 8-DIV RAILCARS (60' CARS, R211, NR OF R46)	\$84.650	X	X	X
G610-01AA	New York City	MTA NYC TRANSIT	SECOND AVE SUBWAY PHASE 1 CONSTRUCTION	\$165.000	X	X	X
MW38-1458	New York City	MTA NYC TRANSIT	MODERNIZE INTERLOCKING: PARSONS AVENUE /QUEENS BOULEVARD	\$115.173	X	X	X
MW38-6183	New York City	MTA NYC TRANSIT	MODERNIZE INTERLOCKING: DITMAS & AVENUE X/ CULVER LINE	\$94.873	X	X	X
ST04-6131	New York City	MTA NYC TRANSIT	ADA: WOODHAVEN BOULEVARD / JAMAICA	\$21.600	X	X	X
X50162	New York City	NEW YORK CITY DOT	BELT PARKWAY ITS SYSTEM	\$3.940		X	X
X50196	New York City	NEW YORK CITY DOT	CONGESTED CORRIDORS PROGRAM - 11TH AVENUE	\$1.976		X	X
X77005	New York City	NEW YORK CITY DOT	HUNTS POINT/PORT MORRIS DIESEL EMISSIONS REDUCTION	\$5.000			X
X77261	New York City	NEW YORK CITY DOT	MUNICIPAL PLUG-IN AND ADVANCED VEHICLE PROGRAM	\$1.300			X
X77263	New York City	NEW YORK CITY DOT	MULTI-MODAL ACCESS TO TRANSIT IN NEW YORK CITY	\$2.242	X	X	X
X77336	New York City	NEW YORK CITY DOT	RECONSTRUCTION OF TILLARY STREET PHASE 2	\$2.800		X	X
X77365	New York City	NEW YORK CITY DOT	BICYCLE NETWORK DEVELOPMENT LANE MARKING CONSTRUCTION	\$9.897	X	X	X

CMAQ Projects Programmed in the Federal Fiscal Years 2017-2021 Transportation Improvement Program							
PIN	Subarea	Sponsor	Project Name	Programmed Funding	Performance Measure(s) Impacted		
					Non-SOV Travel	PHED	Total Emissions Reduction
X77367	New York City	NEW YORK CITY DOT	FORT INDEPENDENCE STREET/BROADWAY/SHAM STREET PEDESTRIAN IMPROVEMENTS	\$0.620	X	X	X
X77368	New York City	NEW YORK CITY DOT	UNIONPORT ROAD PEDESTRIAN SAFETY IMPROVEMENTS	\$0.500	X	X	X
X77369	New York City	NEW YORK CITY DOT	ASTORIA PEDESTRIAN SAFETY IMPROVEMENTS	\$0.390	X	X	X
X80674	New York City	NEW YORK CITY DOT	ITS SIGNAL TIMING FOR MAJOR ROUTES IN FOUR OUTER BOROUGHES	\$0.855		X	X
X11019	New York City	NEW YORK STATE DOT	BRONX RIVER PARKWAY BRIDGE REPLACEMENT	\$3.000		X	X
X22872	New York City	NEW YORK STATE DOT	SAFETY IMPROVEMENTS ON LONG ISLAND EXPRESSWAY, 48TH STREET	\$3.472		X	X
X72977	New York City	NEW YORK STATE DOT	REPLACEMENT OF KOSCIUSZKO BRIDGE OVER NEWTOWN CREEK- CONTRACT 2	\$16.433		X	X
X73127	New York City	NEW YORK STATE DOT	MOBILITY IMPROVEMENT ON NORTHBOUND BRUCKNER EXPRESSWAY	\$9.888		X	X
X73149	New York City	NEW YORK STATE DOT	ARTHUR SHERIDAN EXPRESSWAY ENHANCEMENT	\$10.000		X	X
X80659	New York City	NEW YORK STATE DOT	MANAGED USE LANES ALONG THE LONG ISLAND EXPRESSWAY	\$12.880	X	X	X
X80668	New York City	NEW YORK STATE DOT	OPERATIONAL SUPPORT FOR INTEGRATED INCIDENT MANGEMENT SYSTEM	\$2.652		X	X
X02708	New York City	NYC DEPT OF PARKS & RECREATION	BRONX RIVER GREENWAY BICYCLE/PEDESTRIAN BRIDGES	\$7.803	X	X	X
X50198	New York City	NYC DEPT OF PARKS & RECREATION	HARLEM RIVER GREENWAY BICYCLE/PEDESTRIAN TRAIL	\$1.440	X	X	X
X77310	New York City	NYC DEPT OF PARKS & RECREATION	PEDESTRIAN AND BIKE IMPROVEMENTS IN GULICK PARK	\$0.835	X	X	X

CMAQ Projects Programmed in the Federal Fiscal Years 2017-2021 Transportation Improvement Program							
PIN	Subarea	Sponsor	Project Name	Programmed Funding	Performance Measure(s) Impacted		
					Non-SOV Travel	PHED	Total Emissions Reduction
X50191	New York City	NYC ECONOMIC DEVELOPMENT CORP.	TOMPKINSVILLE WATERFRONT ESPLANADE AND BIKEWAY	\$2.682	X	X	X
X77265	New York City	NYC ECONOMIC DEVELOPMENT CORP.	HUNTS POINT TERMINAL MARKET FREIGHT RAIL MODERNIZATION	\$14.966		X	X
X77013	New York City	NYC ECONOMIC DEVELOPMENT CORP/NEW YORK CITY DOT/GREATER JAMAICA	IMPROVEMENTS OF STATION PLAZA IN JAMAICA, QUEENS COUNTY	\$5.000	X	X	X
TOTAL CMAQ FUNDING PROGRAMMED				\$926.379			