



CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT (CMAQ)  
PERFORMANCE PLAN FOR THE NJDOT PERFORMANCE PERIOD REPORTS:  
2018-2021 FULL PERFORMANCE PERIOD PROGRESS REPORT  
2022-2025 BASELINE PERFORMANCE PERIOD REPORT

December 2022

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***Title VI Compliance***

*The NJTPA is committed to seeking input from those who have been historically under-represented in transportation planning decisions. Federal legislation such as the Americans with Disabilities Act (ADA) and Title VI of the Civil Rights Act of 1964 have public participation requirements that MPOs must implement to ensure access to the planning process for protected populations. To meet these requirements, the NJTPA takes steps to include people with disabilities, minority, and low-income populations, and those with limited English proficiency (LEP) which are discussed throughout the NJTPA's Public Engagement Plan (PEP). In accordance with the Federal Transit Administration Title VI circular, FTA C 4702.1B, the PEP serves as the NJTPA's outreach plan for minority and limited English proficient populations. In accordance with Executive Order 12898 on Environmental Justice, the NJTPA has integrated environmental justice concerns across all of its planning activities. This includes efforts to ensure that transportation benefits and burdens are distributed equally among all people in the region, in part by making concerted efforts to involve low-income and minority residents in transportation planning. The NJTPA encourages participation in its CMAQ program to include those traditionally underserved by existing transportation systems, including, but not limited to, low income and minority populations.*

**STATE:** New Jersey

**URBANIZED AREAS:** New York–Newark, NY–NJ–CT Urbanized Area,  
Philadelphia, PA–NJ–DE–MD Urbanized Area  
Allentown–Bethlehem–Easton, PA–NJ Urbanized Area

## INTRODUCTION

This performance plan supports the Congestion Mitigation and Air Quality Improvement (CMAQ) Program in the North Jersey Transportation Planning Authority (NJTPA) region, particularly by using associated national performance measures. The plan accompanies both the **full performance period progress report** on the first four-year performance period (2018–2021) and the **baseline performance period report** on the second performance period (2022–2025). These performance period reports are submitted by the New Jersey Department of Transportation (NJDOT) to the Federal Highway Authority (FHWA). Reflecting an extensive and cooperative planning process, this document details performance targets and lists projects identified for CMAQ funding for the second performance period for the NJTPA region and applicable urbanized areas. It also describes progress achieved toward targets set for the first performance period and provides a status on projects identified for CMAQ funding during that performance period.

## BACKGROUND

The NJTPA is the federally authorized Metropolitan Planning Organization (MPO) for 7 million people in the 13-county northern New Jersey region. Each year, the NJTPA oversees more than \$2 billion in transportation improvement projects and provides a forum for interagency cooperation and public input. It also sponsors and conducts studies, assists county planning agencies, and monitors compliance with national air quality goals. The NJTPA maintains a performance-based decision-making process. This strategic approach relies on data, performance indicators, forecasting and analysis to make effective decisions on investment, making sure to support regional planning goals and federal, state, and local priorities. The NJTPA’s Regional Capital Investment Strategy and Project Prioritization Criteria exemplify the approach. Additional performance-based elements include the identification of CMAQ projects and broader performance measure monitoring.

The NJTPA is part of the New York–Newark, NY–NJ–CT urbanized area (UZA), which has a population of nearly 19 million people. The NJTPA has a small overlap with (and contains National Highway System (NHS) roadways within) two additional UZAs: The Philadelphia, PA–NJ–DE–MD UZA, which has a population of approximately 5.5 million; and the Allentown–Bethlehem–Easton, PA–NJ UZA, which has an approximate population of 850,000.

Due to the fact that the NJTPA region contains designated nonattainment and maintenance areas that overlap with an urbanized area with a population above 1 million, regulations<sup>1</sup> require that the NJTPA prepare this CMAQ Performance Plan. Portions of the NJTPA region are in nonattainment or maintenance for the criteria pollutants of ozone, fine particulate matter (PM<sub>2.5</sub>) and carbon monoxide (CO). The entire NJTPA region is part of the New York–Northern New Jersey–Long Island, NY–NJ–CT 8-hour ozone

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<sup>1</sup> 23 CFR 490.107(c)(3)

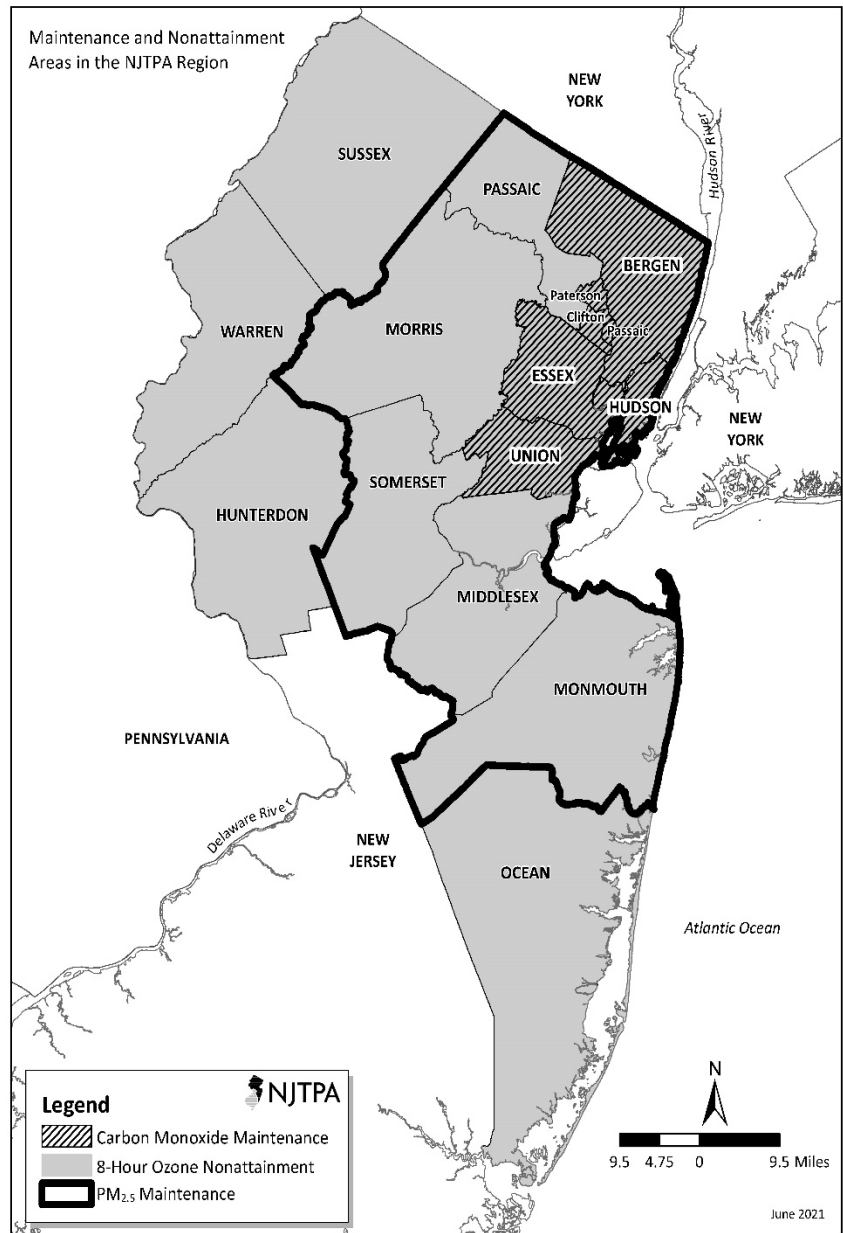


Figure 1: Maintenance and Nonattainment Areas in the NJTPA Region (map)

nonattainment area and the Philadelphia–Wilmington–Atlantic City, PA–NJ–MD–DE 8-hour ozone area. Nine NJTPA counties are part of the New York–Northern New Jersey–Long Island, NY–NJ–CT annual and daily PM<sub>2.5</sub> maintenance areas, and four (plus a portion of a fifth) are part of the New York–Northern New Jersey–Long Island, NY–NJ–CT CO maintenance area. The NJTPA region nonattainment and maintenance area designations are shown in the map above (Figure 1).

This report is part of a required submission satisfying both the full performance period progress report on the first performance period (2018–2021), and the baseline performance period report on the second performance period (2022–2025). It both reflects the previous four years and sets the stage for the next four years. The initial CMAQ Performance Plan for the first performance period was submitted on October 1, 2018. See below (Figure 2) for details on reporting requirements.

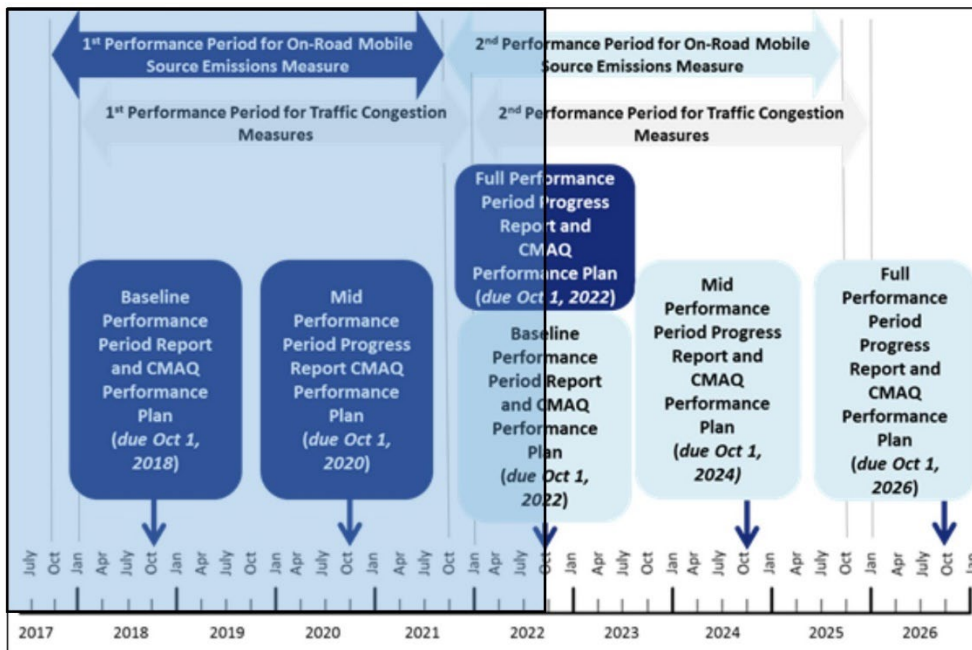


Figure 2: Performance Periods for CMAQ Measures and Reporting Timeline:

[https://www.fhwa.dot.gov/environment/air\\_quality/cmaq/measures/performance\\_plan/](https://www.fhwa.dot.gov/environment/air_quality/cmaq/measures/performance_plan/)

Figure 3 shows the urbanized areas that overlap with the NJTPA region. Note that, although there is overlap between the NJTPA region and both the Trenton and Poughkeepsie–Newburgh UZAs, there are no NHS roadways in the overlap area, and thus the NJTPA is not required to set targets for those UZAs. Because the regulations require that single, unified targets be set by all state Departments of Transportation (DOTs) and MPOs with NHS roadways within large UZAs, there is significant coordination between NJDOT, neighboring state DOTs and MPOs that share the same urbanized areas to set targets for CMAQ performance measures. Details are provided below. This coordination took place ahead of the October 1, 2022, deadline to submit the Performance Plan.

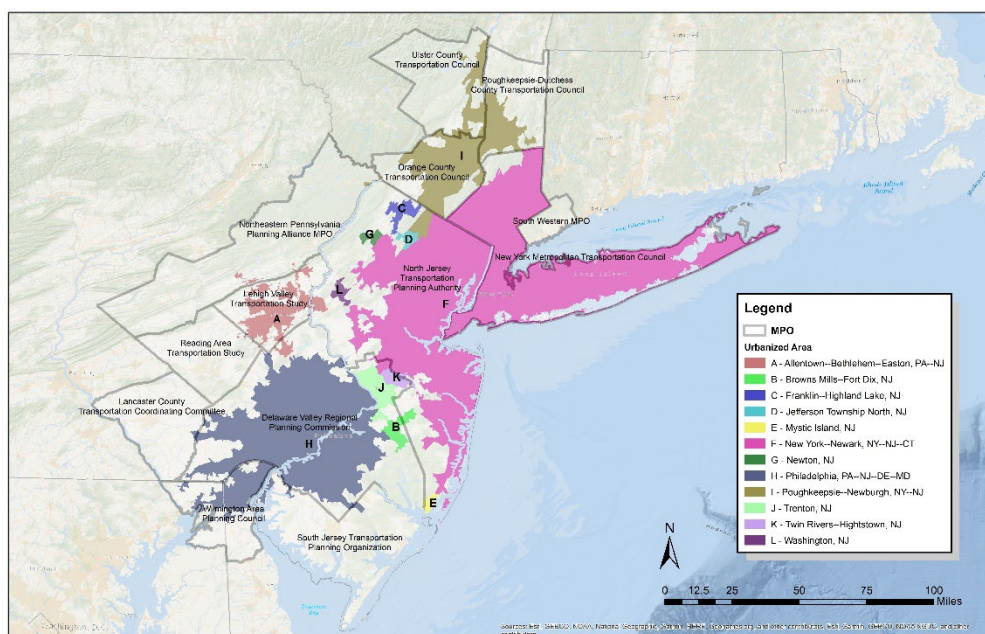


Figure 3: Urbanized Areas in the NJTPA Region (map)

## PERFORMANCE MEASURES

The CMAQ Performance Plan is required to include three performance measures. Two address traffic congestion, aggregated at the UZA level: **percent non-single occupant vehicle (non-SOV) travel**, and **peak hour excessive delay (PHED) per capita**. The third measure addresses **total criteria pollutant emissions reductions from CMAQ projects**, for the NJTPA region (specifically tied to corresponding nonattainment or maintenance areas for those pollutants).

The three measures were evaluated to assess the current and historic condition/performance as described below. The measures were also analyzed to collaboratively develop UZA traffic congestion targets and NJTPA region pollutant emissions reductions targets. Finally, the plan’s list of future CMAQ projects specifically identifies how those projects should help to achieve the congestion and emissions targets in the next four-year performance period.

### **Percent non-SOV Travel: Performance Measure**

This performance measure recognizes the role that single-occupant vehicles play in contributing to traffic congestion and pollutant emissions. **Percent non-SOV travel** for the urbanized area is calculated using U.S. Census American Community Survey (ACS) data about journey-to-work trips. Non-SOV includes carpool, train, bus, walk, bike, taxi, rideshare, working at home, etc.—anything other than driving alone.

### **Annual Hours of PHED Per Capita: Performance Measure**

This is a measure of congestion on all NHS roadways (mostly roads that are principal arterials or greater functional class) in each urbanized area. The measure sums up the delay experienced by travelers throughout an entire year on those roads, specifically during peak periods (weekdays from 6-10 a.m. and 3-7 p.m.).

The use of the word “excessive” reflects that some level of congestion is recognized as acceptable and is thus not counted. FHWA defines excessive delay as travel slower than 20 miles per hour or 60 percent of the posted speed limit, whichever is greater. Excessive travel time is the time beyond what it would take to travel at these threshold speeds. The “per capita” implies that the total delay is shared by all residents; hence if some trips can be avoided or shifted to walking or biking or shifted out of the peak period, the measure would show improvement. The delay is added for all travelers. Hence a bus with 25 passengers excessively delayed by 10 minutes adds up to 250 person-minutes of delay.

Data for this measure is based largely on archived real-time travel statistics reported at 15-minute intervals for the entire year. Other data on traffic volumes and vehicle types, distributions of traffic over the peak periods and estimates of vehicle occupancy are included. Annual person-hours of excessive delay on each roadway segment is summed for the entire urbanized area and divided by the population of the urbanized area.

For the New York–Newark UZA, the PHED measure is calculated using values from the National Performance Management Research Data Set (NPMRDS) Analytics Suite (hosted by the University of Maryland Center for Advanced Transportation Technology Laboratory) for the sections of NHS within New Jersey, and from the NPMRDS PM3 Tools (hosted by the University at Albany Visualization and Informatics Lab) for the sections of NHS within New York. For the Philadelphia and Allentown UZAs, the PHED measure is calculated using the NPMRDS Analytics Suite.

### ***CMAQ Emissions Reduction: Performance Measure***

As noted, the NJTPA is required to set quantitative targets for pollutant emissions reductions from CMAQ projects within its nonattainment and maintenance areas.

Separate emission reduction targets are required for each nonattainment or maintenance area pollutant, or precursor. For the NJTPA region, these are CO and PM<sub>2.5</sub>, along with the ozone precursors of volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>). The required emissions reduction targets identify the amount of pollutant emissions (in kilograms per day, or kg/day) estimated to be reduced by CMAQ-funded projects within the corresponding nonattainment or maintenance area(s), summed over the applicable fiscal years. The two-year target represents the emissions reductions from CMAQ projects authorized within the first two fiscal years of the performance period, while the four-year target represents the emissions reductions from CMAQ projects that will first be authorized within all four fiscal years in the performance period.

### ***Coordination on Performance Measure Analysis***

Continuing with prior year efforts, the **annual hours of PHED per capita** and **percent non-SOV travel** measures involved considerable coordination for the next performance period. The NJTPA worked closely with partners in all three UZAs, compiling and analyzing data, considering policy and practical factors, and developing suitable benchmarks and targets.

The New York–Newark UZA only has NHS roadways in New Jersey and New York. Thus, only three MPOs—NJTPA, the New York Metropolitan Transportation Council (NYMTC), and the Delaware Valley Regional Planning Commission (DVRPC)—and NJDOT and the New York State Department of Transportation (NYSDOT) are responsible for setting and reporting targets for these measures. However, the coordination group also included three additional MPOs—the South Western Region Metropolitan Planning Organization (SWRMPO), part of the Western Connecticut Council of Governments; the

Orange County Transportation Council in New York; and the South Jersey Transportation Planning Organization (SJTPO)—and two additional state departments of transportation, Connecticut DOT and Pennsylvania DOT (PennDOT). Staff from the New York and New Jersey FHWA divisions also participated in the New York–Newark UZA coordination group meetings. The New York–Newark UZA coordination group met multiple times to work on CMAQ traffic congestion measure targets. A subgroup met to discuss specific data and tools.

The Philadelphia UZA has NHS roadways in four states: Pennsylvania, New Jersey, Delaware, and Maryland. The coordination group meetings included seven MPOs—NJTPA; DVRPC; SJTPO; the Wilmington Area Planning Council in Delaware; and the Lehigh Valley Transportation Study (LVTS), the Reading Area Transportation Study (RATS), and the Lancaster County Transportation Coordinating Committee (LCTCC) in Pennsylvania—and PennDOT, Delaware DOT, Maryland DOT, and NJDOT.

The Allentown UZA has NHS roadways in both Pennsylvania and New Jersey. Targets were agreed to by five MPOs—NJTPA, DVRPC, LVTS, RATS, and the Northeastern Pennsylvania Alliance (NEPA)—and PennDOT and NJDOT.

For the CMAQ emissions reduction measure, coordination involved the New Jersey Air Quality Working Group, with subject matter experts from NJDOT, the New Jersey Department of Environmental Protection (NJDEP), NJ TRANSIT, NJTPA, DVRPC, and SJTPO. All three MPOs in New Jersey contain nonattainment and/or maintenance areas and the coordination ensured a consistent approach across MPOs.

## **ASSESSMENT OF THE FIRST PERFORMANCE PERIOD (2018–2021)**

Note that, for the first performance period (2018–2021), traffic congestion targets (non-SOV and PHED) were required only for the two UZAs with populations above 1 million: New York–Newark, and Philadelphia.

### ***Percent non-SOV Travel: First Performance Period***

The most current 5-year ACS data (an aggregate 2016–2020 value) shows that, for the **New York–Newark UZA**, over half (52.4 percent) of the residents use a non-SOV mode as their primary commute mode. The four-year target established for the first performance period for this UZA, 51.7 percent, was met (and even surpassed). The previous target represented a slight increase from the baseline number, 51.6 percent. For target setting, the partner agencies considered the recent trend of modest increases in the measure and other considerations, including consistency with policy goals, long-range forecasts, other trends in population, employment and ridesharing, public transit capacity constraints, the limited short-term impact of transportation projects and programs, and the uncertainty from numerous external factors.

A primary reason for the increase in percent non-SOV travel in the 2016–2020 5-year ACS period is believed to be the increased amount of telecommuting caused by travel impacts of the COVID-19 pandemic (which more than offset the reduction in transit commuting). Additionally, there were several transportation projects undertaken within the New Jersey portion of the New York–Newark UZA which likely resulted in increased non-SOV travel, including bicycle and pedestrian enhancements, travel demand management activities, and transit enhancements.



For the **Philadelphia UZA**, the 2016–2020 5-year ACS reports that slightly less than one-third (30.6 percent) of the residents use a non-SOV mode for their journey to work. The target established for this UZA, 28.1 percent, was met. Similar to the New York–Newark UZA, non-SOV use in the **Philadelphia UZA** has shown modest increases in recent years, and the agencies used similar considerations in setting the target as discussed in the New York–Newark UZA. And similar to the New York–Newark UZA, the increase in non-SOV travel in the 2016–2020 ACS is likely due to impacts from the COVID-19 pandemic.

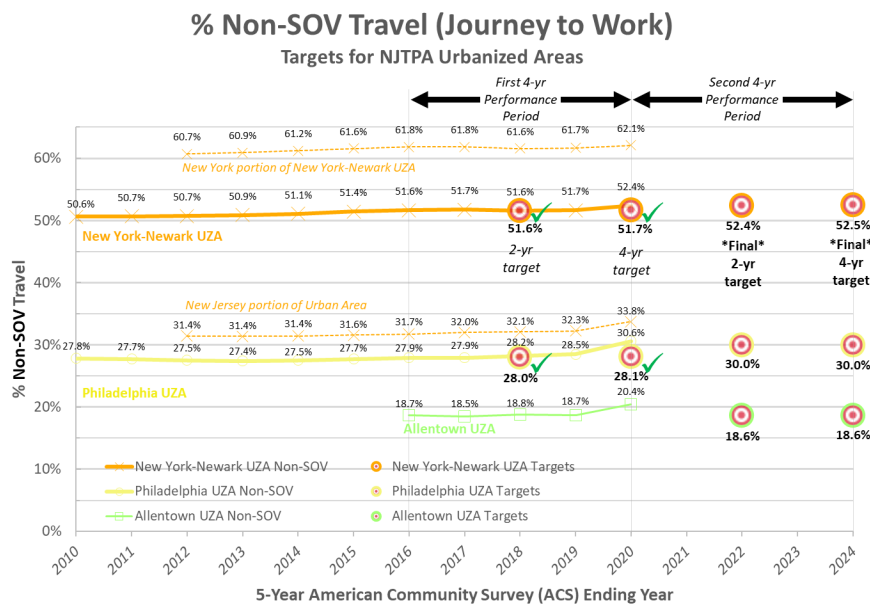


Figure 4: Non-SOV Travel Trends and Targets

### Annual Hours of PHED Per Capita: First Performance Period

Using the latest calculation methods and data, the value for the PHED measure for the **New York–Newark UZA** at the beginning of the first performance period (2017) was 24.3 person-hours per capita. For this first performance period, the baseline value for this measure was not the value at the beginning of the performance period, but instead was set at the value at the midpoint of the period (2019), which was 22.3 person-hours per capita<sup>1</sup>. The value at the end of the performance period (2021) was 20.9 person-hours per capita. The four-year target set for the first performance period, 22 person-hours per capita, was achieved.

Due to significant changes during the COVID-19 pandemic, travel beginning in early 2020 was greatly reduced. It is no surprise that the PHED measure reflected this change, with the annual value for 2020 dropping sharply to 14 person-hours per capita. While travel began to return to pre-pandemic conditions during 2021 and 2022, it is likely that the value for 2021 (20.9 person-hour per capita) is also somewhat impacted by the pandemic.

<sup>1</sup> The reduction from 24.3 in 2017 to 22.3 in 2019 is most likely largely due to a reduction in the system mileage being reported on (system mileage itself normally does not change drastically in two years), and not reflective of a reduced amount of excessive delay in the UZA.

For the **Philadelphia UZA**, the value for the PHED measure at the beginning of the first performance period (2017) was 16.1 person-hours per capita, whereas the baseline value (2019) was 14.6 person-hours per capita. The value at the end of the performance period (2021) was 13.1 person-hours per capita. The four-year target set for the first performance period, 17.2 person-hours per capita, was achieved. However, the COVID-19 pandemic also had major impacts in this UZA, which likely explains much of the reduction in excessive delay.

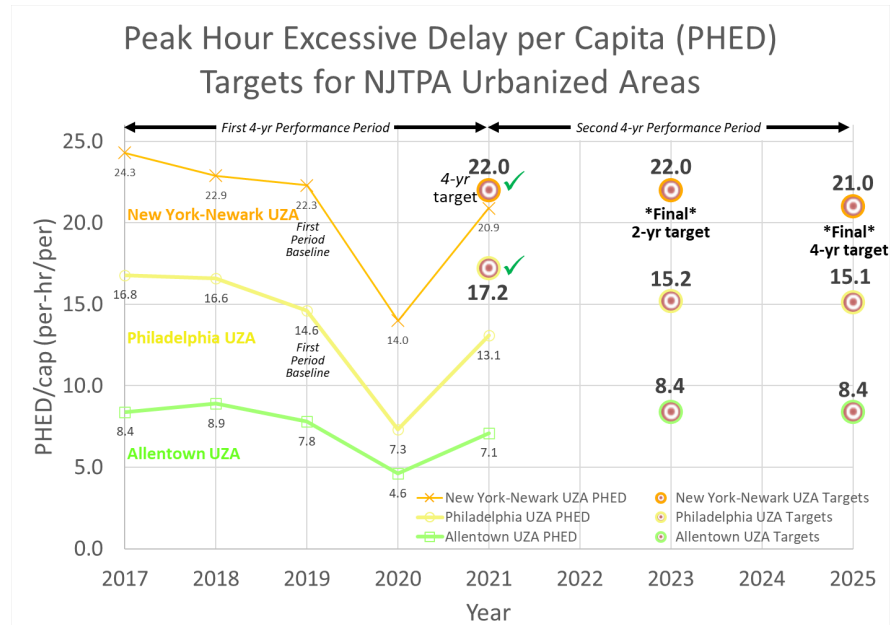


Figure 5: PHED per Capita Trends and Targets

**CMAQ Emissions Reduction: First Performance Period**

The baseline, four-year condition/performance, and four-year targets for the first performance period are shown in Figure 6. The four-year condition/performance is derived from data in FHWA’s Public Access System (PAS) for FFY 2018 through FFY 2021, including statewide projects distributed to NJTPA based on the regional share of statewide vehicle miles travelled (VMT). For all pollutants/precursors, the four-year condition/performance is substantially greater than the four-year target that was set. In large part, this was a result of the NJTPA portion of one statewide program that optimized many traffic signals throughout New Jersey (first funded in FFY 2018).

GEOGRAPHY	POLLUTANT	NJTPA REGION (KG/DAY)		
		BASELINE*	4-YR CONDITION/ PERFORMANCE**	4-YR TARGET
		(FFY14– FFY17)	(FFY18–FFY21)	(FFY18–FFY21)
CO Maintenance Area***	CO	67.376	250.276	63.010
PM <sub>2.5</sub> Maintenance Area	PM <sub>2.5</sub>	4.312	60.636	3.267
Ozone Nonattainment Area	VOC	31.937	95.904	27.318
	NO <sub>x</sub>	206.771	803.960	202.745

\*Without duplicates/erroneous data, and with NJ TRANSIT projects added.

\*\*Including all projects in CMAQ Public Access System for FFY18–FFY21 for NJTPA region, plus 71.4 percent of statewide projects (reflective of percentage of statewide VMT in NJTPA region)

\*\*\*Because the CO Maintenance Area is not the entire NJTPA region, CO emissions reduction benefits are further multiplied by a factor of 39.3 percent, reflective of the percentage of regional VMT within the CO Maintenance Area

Figure 6 CMAQ Emissions Reductions Condition and Targets First Performance Period (2018–2021)

## BASELINE AND TARGETS FOR THE SECOND PERFORMANCE PERIOD (2022–2025)

The NJTPA Board of Trustees approved the cooperatively developed UZA congestion and NJTPA region pollutant emissions reduction targets in September 2022. The targets are identified and described below. At the end of the report is a detailed list of projects from the two halves of this performance period (FFY22–FFY23) and (FFY24–FFY25), that help NJTPA meet two- and four-year targets set in the 2022 Performance Plan.

When measuring target achievement, NJTPA quantified emissions reductions by project in FHWA’s PAS, which is populated by NJDOT. The performance report includes cumulative emissions reductions for CMAQ-funded projects within NJTPA’s region (along with NJTPA’s portion of statewide projects and programs).

### **Percent non-SOV Travel: Second Performance Period**

For the second four-year performance period, target setting and reporting will include the Allentown–Bethlehem–Easton, PA–NJ Urbanized area.

As described in the discussion of the first performance period above, the most current data shows that, for the New York–Newark UZA, over half (52.4 percent) of the residents used a non-SOV mode as their primary commute mode (as measured by the 2016–2020 5-year ACS). The trend has modestly increased in recent years.

For target setting, the agency discussions highlighted this and other considerations, including: consistency with policy goals; long-range forecasts; other trends in population, employment and ridesharing; public transit capacity constraints; the limited short-term impact of transportation projects and programs; the potential impacts of New York City congestion pricing; and the uncertainty from numerous external factors, including transportation impacts from the COVID-19 pandemic, and recent increases in inflation, particularly gas prices.

The group noted that while some workers are returning to offices after working from home during the height of the pandemic, it is likely that at least in the near term, telecommuting will remain higher than before the pandemic. Because telecommuting counts as a non-SOV mode, this would lead to an increase in the percent of non-SOV commuters from pre-pandemic conditions. Counter to that, some commuters that previously took transit may shift to driving alone for health reasons, which would lower the percentage of non-SOV commuters. Thus, the group anticipated that the sharp rise in non-SOV commuting seen during the height of the pandemic would likely not be maintained.

However, it was recognized that the performance measure's data source—surveys collected over a 5-year period—may limit the responsiveness of the measure to changing conditions. That is, surveys collected in 2020 and 2021 will continue to be included throughout this performance period. Thus, even to the extent that the pandemic impacts are transitory, any decreases in measured non-SOV travel would be diluted in the measurements until the next performance period.

Based on the considerations described above, the **New York–Newark UZA** MPOs and state DOTs agreed that an appropriate **two-year target** (corresponding to the 2018–2022 5-year ACS) is to maintain the percent non-SOV travel at **52.4 percent**; and that an appropriate **four-year target** (corresponding to the 2020–2024 5-year ACS) would be a slight increase to **52.5 percent**.

For the **Philadelphia UZA**, slightly less than one-third (30.6 percent) of the residents used a non-SOV mode for their journey to work as reported by the 2016–2020 5-year ACS. Similar to the New York–Newark UZA, non-SOV use in the Philadelphia UZA has shown modest increases in recent years, and the agency discussions highlighted similar considerations and uncertainties as discussed in the New York–Newark UZA. The **Philadelphia UZA** MPOs and state DOTs agreed that both the **two-year** and **four-year targets** would represent a slight decrease in the percent non-SOV travel, to **30 percent**.

For the **Allentown–Bethlehem–Easton UZA**, slightly more than one-fifth (20.4 percent) of the residents used a non-SOV mode for their journey to work as reported by the 2016–2020 5-year ACS. Historic values for non-SOV travel in the Allentown UZA were slightly lower. The Allentown UZA MPOs and state DOTs agreed to set both the **two- and four-year targets** based on average pre-pandemic conditions, to **18.6 percent**.

As discussed in the preceding section, the first performance period four-year targets (for the New York–Newark and Philadelphia UZAs) have been met, according to data from the 2016–2020 5-year ACS. It is expected that the second performance period two- and four-year target for each UZA will be achievable

A summary of the baseline and target values for non-SOV is included in the following table:

URBANIZED AREA	BASELINE	2-YEAR TARGET	4-YEAR TARGET
	(2016–2020 ACS)	(2018–2022 ACS)	(2020–2024 ACS)
New York–Newark, NY–NJ–CT	52.4%	52.4%	52.5%
Philadelphia, PA–NJ–DE–MD	30.6%	30%	30%
Allentown–Bethlehem–Easton, PA–NJ	20.4%	18.6%	18.6%

Figure 7: Non-SOV Baseline and Targets Second Performance Period (2021–2025)

### Annual Hours of PHED Per Capita: Second Performance Period

As discussed in the first performance period section above, the **New York–Newark UZA** experienced 20.9 person-hours per person of peak hour excessive delay during 2021. Target discussions included similar considerations as for the percent non-SOV measure. The group noted that traffic has returned to near pre-pandemic conditions, and that construction projects (which are anticipated to increase due to funding from the Infrastructure Investment and Jobs Act) would likely contribute to temporary increases in excessive delay. The group agreed that an appropriate **two-year target** (for 2023) would be a slight increase to **22 person-hours per capita** (which was the four-year target from the previous performance period). The **four-year target** (for 2025) reflects a subsequent slight decrease in excessive delay to **21 person-hours per capita**.

For the **Philadelphia UZA**, the estimate of current (2021) peak hour excessive delay is 13.1 person-hours per capita. The consensus **two-year target** represents a slight increase to **15.2 person-hours per capita**, and the **four-year target** represents a subsequent very slight decrease to **15.1 person-hours per capita**.

Lastly, for the **Allentown UZA**, the estimate of current (2021) peak hour excessive delay is 7.1 person-hours per capita. The consensus was to set both the **two-year** and **four-year targets** to the pre-pandemic average value of **8.4 hours per capita**.

A summary of the baseline and target values for PHED is included in the following table:

URBANIZED AREA	BASELINE	2-YEAR TARGET	4-YEAR TARGET
	(2021)	(2023)	(2025)
New York–Newark, NY–NJ–CT	20.9	22	21
Philadelphia, PA–NJ–DE–MD	13.1	15.2	15.1
Allentown–Bethlehem–Easton, PA–NJ	7.1	8.4	8.4

Figure 8: PHED Baseline and Targets Second Performance Period (2021–2025)

### CMAQ Emissions Reduction: Second Performance Period

The New Jersey Air Quality Working Group identified and agreed upon MPO-level baselines and targets for the emissions reductions from CMAQ projects. Because New Jersey is completely covered by MPOs, these MPO-level baselines and targets were added together to create the statewide baseline and targets.

As a baseline, the Air Quality Working Group examined emissions reductions from CMAQ projects authorized during the last four fiscal years (FFY 2018-FFY 2021). The baseline used required data from the FHWA CMAQ PAS.

For target setting, the group considered the baseline and the partner agencies’ commitment to sustaining the level of effort with CMAQ program pollutant reductions. Looking at the entire four-year baseline period was appropriate because of variations in specific projects from year to year. (The four-year sum also helps to address an accounting complexity for this measure—emission reduction benefits are assigned to the first year that projects are authorized, even if the benefits are spread over longer periods.) The list of CMAQ projects during the four-year baseline period was examined, and one-time projects (not likely representative of future CMAQ projects) were eliminated. The target setting also considered that vehicles are becoming cleaner over time, making it more challenging to achieve pollutant reductions by reducing VMT.

To identify targets, the total reduction for each pollutant was calculated for the four years of the baseline period (FFY 2018–FFY 2021), accounting for the relative “cleanliness” of the vehicles during each of the past four years. This total was then divided by four to get an annual average. The average was then projected forward for each fiscal year during the performance period (FFY 2022–FFY 2025), again adjusting for the anticipated cleanliness of vehicles in the future. The two-year target was set as the sum of the emissions reduction projections for FFY 2022 and FFY 2023, and the four-year target was set as the sum of the emissions reduction projections for FFY 2022 through FFY 2025. This results in the following table for the NJTPA region:

GEOGRAPHY	POLLUTANT	NJTPA REGION (KG/DAY)*			
		BASELINE	ADJUSTED BASELINE**	2-YR TARGET	4-YR TARGET
		(FFY18–FFY21)		(FFY22–FFY23)	(FFY22–FFY25)
CO Maintenance Area***	CO	250.276	130.498	60.422	114.796
PM <sub>2.5</sub> Maintenance Area	PM <sub>2.5</sub>	60.636	12.339	4.659	8.841
Ozone Nonattainment Area	VOC	95.904	18.013	8.384	15.948
	NO <sub>x</sub>	803.960	51.095	22.528	41.425

\*Including all projects in CMAQ PAS for NJTPA region, plus 71.4 percent of statewide projects (reflective of percentage of statewide VMT in NJTPA region)

\*\*Without “one-time only” projects, not adjusted for vehicle cleanliness

\*\*\*Because the CO Maintenance Area is not the entire NJTPA region, CO emissions reduction benefits are further multiplied by a factor of 39.3 percent, reflective of the percentage of regional VMT within the CO Maintenance Area

Figure 9: CMAQ Emissions Reductions Baseline and Targets Second Performance Period (2021–2025)

## DESCRIPTION OF PROJECTS

The NJTPA and its partner agencies identify and develop CMAQ projects following federal requirements, to improve the region’s air quality and manage traffic congestion. The accompanying Project Description Table lists projects identified for CMAQ funding in the

NJTPA region in the coming performance period. For each project (or group of projects), anticipated benefits are described as they relate to the CMAQ congestion and air pollutant reduction performance measures.

The table lists “Initial TIP Program Fiscal Year,” which represents the first year that the project is anticipated to receive CMAQ funding. This is important because emission reduction benefits are only entered into the PAS for the first year that the project receives CMAQ funding.

The table is organized into sections relating to the two-year and four-year targets for the next performance period. Within each section, projects are sorted by project type. The initial section includes projects that are anticipated to receive initial CMAQ funding during FFY 2018 and FFY 2019 (the period covered by the two-year target). The second lists projects for FFY 2020 and FFY 2021. The final section includes projects that will continue to receive funding during the performance period but have already received CMAQ funding (prior to FFY 2018). These projects will not technically help to meet the emission reduction targets (because their benefits have already been entered into the PAS), but they should contribute to meeting the congestion targets. In addition, if funding for these projects were to be eliminated, emission benefits would also be lost.

## **NEXT STEPS**

Overall, the projects in the CMAQ Project Description Tables will assist the region in meeting the CMAQ congestion and emission reduction targets in this plan. Coupled with projects funded and implemented through other programs, they should help the region reach environmental, economic, quality of life and other social (equity) goals. The NJTPA continues to implement CMAQ projects in environmental justice/low-income/minority communities since they are disproportionately affected by poor air quality.

The NJTPA continues to identify CMAQ funded projects for the upcoming years. As new projects become part of NJTPA’s CMAQ program, they will help to reduce emissions and attain the congestion measure goals. As these projects move toward federal authorization, they will be included in upcoming performance plans.

The NJTPA, working with its partner agencies, will continue to identify and develop CMAQ projects based on a performance-driven planning and programming process, and will assess data and progress reports for final performance period milestones in 2022. As appropriate, adjustments may be made to performance targets. More importantly, the progress report will also inform decision makers overseeing the planning process, offering opportunities to reassess and re-align investment priorities. These priorities can be incorporated into updates of NJTPA’s Transportation Improvement Program and the NJTPA’s Long-Range Transportation Plan.

## FEDERAL LEGISLATIVE REQUIREMENTS

*The legislative requirements are in 23 USC § 149(I)*

*(I) Performance Plan.—*

*(1) In general.—Each metropolitan planning organization serving a transportation management area (as defined in [section 134](#)) with a population over 1,000,000 people representing a nonattainment or [maintenance area](#) shall develop a performance plan that—*

*(A) includes an area baseline level for traffic congestion and on-road mobile source emissions for which the area is in nonattainment or [maintenance](#);*

*(B) describes progress made in achieving the air quality and traffic congestion performance targets described in [section 150\(d\)](#); and*

*(C) includes a description of [projects](#) identified for funding under this section and how such [projects](#) will contribute to achieving emission and traffic congestion reduction targets.*

*(2) Updated plans.— Performance plans shall be updated biennially and include a separate report that assesses the progress of the program of [projects](#) under the previous plan in achieving the air quality and traffic congestion targets of the previous plan.*

*Regulatory requirements are in 23 CFR § 490.107(c)(3)(ii) (baseline) and (iv) (full period)*

*(ii) For the CMAQ Traffic Congestion and Total Emissions Reduction measures in subparts G and H of this part, the CMAQ performance plan submitted with the State DOT's Baseline Performance Period Report to FHWA shall include:*

*(A) The 2-year and 4-year targets for the CMAQ Traffic Congestion measures, identical to the relevant State DOT(s) reported target under paragraph (b)(1)(ii)(A) of this section, for each applicable urbanized area;*

*(B) The 2-year and 4-year targets for the Total Emissions Reduction measure for the performance period;*

*(C) Baseline condition/performance for each MPO reported CMAQ Traffic Congestion targets, identical to the relevant State DOT(s) reported baseline condition/performance under paragraph (b)(1)(ii)(B) of this section;*

*(D) Baseline condition/performance derived from the latest estimated cumulative emissions reductions from CMAQ projects for each MPO reported Total Emissions Reduction target; and*

*(E) A description of projects identified for CMAQ funding and how such projects will contribute to achieving the performance targets for these measures.*

*(iv) For the CMAQ Traffic Congestion and Total Emissions Reduction measures in subparts G and H of this part, the CMAQ performance plan submitted with the State DOT's Full Performance Period Progress Report to FHWA shall include:*

*(A) 4-year condition/performance for the CMAQ Traffic Congestion measures, identical to the relevant State DOT(s) reported condition/performance reported under paragraph (b)(3)(ii)(A) of this section, for each applicable urbanized area;*

*(B) 4-year condition/performance derived from the latest estimated cumulative emissions reductions from CMAQ projects for each MPO reported Total Emissions Reduction target; and*

*(C) An assessment of the progress of the projects identified in both paragraphs (c)(3)(ii)(C) and (c)(3)(iii)(D) of this section toward achieving the 4-year targets for these measures.*



## CMAQ PROJECT DESCRIPTIONS TABLE

### 2018-2021 FULL PERFORMANCE PERIOD PROGRESS REPORT

UPCOMING PROJECTS BY PROJECT TYPE									
DBNUM	PROJECT SPONSOR & TITLE	PROJECT DESCRIPTION	PROJECT TYPE	INITIAL TIP PROGRAM FISCAL YEAR	RELEVANT POLLUTANT	EMISSIONS BENEFIT	TRAFFIC CONGESTION BENEFIT (PHED)	TRAFFIC CONGESTION BENEFIT NON-SOV	
X065	Weehawken & City of Union City	Union City and Weehawken Traffic Signal Optimization	Congestion Relief, Signals/ITS	2023 or 2023	CO, NOx, VOCs, PM 2.5	Optimized traffic flow reduces pollutant emissions	Improved traffic operations reduces congestion	NA	
X065	City of Paterson	Paterson Traffic Circulation & Signal Optimization Project	Congestion Relief, Signals/ITS	2023 or 2023	CO, NOx, VOCs, PM 2.5	Optimized traffic flow reduces pollutant emissions	Improved traffic operations reduces congestion	NA	
X065	Essex County	Optimized / Adaptive -Traffic Signals - Central Avenue (C.R. 508)	Congestion Relief, Signals/ITS	2023 or 2023	CO, NOx, VOCs, PM 2.5	Optimized traffic flow reduces pollutant emissions	Improved traffic operations reduces congestion	NA	
X065	Hudson County - Traffic Signal Optimization (Parts 1&2)	JFK Blvd. – Armstrong Ave to Clinton Ave - Traffic Signal Optimization	Congestion Relief, Signals/ITS	2023 or 2023	CO, NOx, VOCs, PM 2.5	Optimized traffic flow reduces pollutant emissions	Improved traffic operations reduces congestion	NA	
X065	Meadowlark -EZ Electric	Introduce five electric shuttles to fleet for zero emissions public transportation	Alternate fuels & vehicles	2023 or 2023	CO, NOx		NA	NA	
X065	Monmouth County - Electric Monmouth	Install 24 level two chargers on County properties such as parks, offices and libraries for public use	Alternate Fuels & Vehicles	2023 or 2023	NOx, VOCs, PM 2.5	Expanding infrastructure to increase the market share for EVs allows for cleaner energy use.	NA	NA	
X065	Morris County - Patriot's Path Extension East	Extend a three mile section of Patriot's Path east, converting it into a 10 foot wide Shared Use Path	Bicycle/Pedestrian	2023 or 2023	CO, PM 2.5, NOx, VOCs	Provides non-motorized modes of transportation thereby reducing emissions.	Reduces congestion by reducing VMT on local streets.	Reduce SOV travel by shifting modes from auto use	
X065	NJ TRANSIT - Local Mobility Initiatives (LMI)	NJTA will conduct a solicitation for LMI projects for FY 2021	Transit Shuttles	2023 or 2023	NOx, VOCs, PM2.5	Reduces emissions by encouraging increased transit use and reducing SOV travel.	Projects will reduce congestion by encouraging transit use.	Projects will reduce SOV travel by providing access to transit and work places	
X065	NUDEP - it Pays to Plug In (Phase I and II)	Expands NJDEP's electric vehicle (EV) charging program with approximately 400 charging stations in public workplaces, downtown areas, leisure destinations, public colleges & universities & major transportation corridors.	Alternate fuels & vehicles	2023 or 2023	NOx, VOCs, PM 2.5	Expanding infrastructure to increase the market share for EVs allows for cleaner energy use.	NA	NA	
X065	NUDEP Emergency Vehicle Idle Reduction	Install Auxiliary Power Units (APUs) in emergency vehicles to reduce engine idling.	Anti-idling	2023 or 2023	CO, NOx,	Reduced vehicle engine-idling reduces pollutant emissions.	NA	NA	
X065	PANYNJ Zero Emissions Goods Movement	Replace/scrap a minimum of 10 diesel, drayage trucks with electric trucks.	Alternate fuels & vehicles	2023 or 2023	CO, NOx, PM 2.5	Providing 500,000 miles of emissions-free trucking annually in the NJTPA region.	NA	NA	

DBNUM *	PROJECT SPONSOR & TITLE	PROJECT DESCRIPTION	PROJECT TYPE	INITIAL TIP PROGRAM FISCAL YEAR	RELEVANT POLLUTANT	EMISSIONS BENEFIT	TRAFFIC CONGESTION BENEFIT (PHED)	TRAFFIC CONGESTION BENEFIT NON-SOV
X065	Passaic County - Highlands Rail Trail - Phase II	Phase II of Highlands Rail Trail encompassing 1.25 miles.	Bicycle/Pedestrian	2023 or 2023	CO, PM 2.5, NOx, VOCs	Provides non-motorized modes of transportation thereby reducing emissions.	Reduces congestion by reducing VMT on local streets.	Reduce SOV travel by shifting modes from auto use.
<b>CONTINUING PROJECTS 2018 - 2022</b>								
15343	No MPO Identified/State Sponsored	Intelligent Traffic Signals System	Congestion Reduction and Traffic Flow Improvements	2019	NOx, VOCs, PM 2.5, CO	Reduces emissions by encouraging increased transit use and reducing SOV travel.	Improved traffic operations reduces congestion	NA
15343	No MPO Identified/State Sponsored	Intelligent Traffic Signals System	Congestion Reduction and Traffic Flow Improvements	2019	NOx, VOCs, PM 2.5, CO	Reduces emissions by encouraging increased transit use and reducing SOV travel.	Improved traffic operations reduces congestion	NA
15343	No MPO Identified/State Sponsored	Intelligent Traffic Signals System	Congestion Reduction and Traffic Flow Improvements	2018	NOx, VOCs, PM 2.5, CO	Reduces emissions by encouraging increased transit use and reducing SOV travel.	Improved traffic operations reduces congestion	NA
T112	No MPO Identified/State Sponsored	Rail Rolling Stock Replacement	Transit Improvements	2019	NOx, VOCs, PM 2.5, CO	Heavy rail replacement	Reduces congestion	Mode shift from auto to rail
T112	No MPO Identified/State Sponsored	Rail Rolling Stock Replacement	Transit Improvements	2018	NOx, VOCs, PM 2.5, CO	Heavy rail replacement	Reduces congestion	Mode shift from auto to rail
X065	Ocean County - Signal Optimization	Signal Optimization throughout Ocean County	Congestion Relief, Signals/ITS	2022	CO, NOx, VOCs, PM 2.5	Optimized traffic flow reduces pollutant emissions	Improved traffic operations reduces congestion	NA
X065	NJ TRANSIT - Local Mobility Initiatives (LMI)	NJTPA will conduct a solicitation for LMI projects for FY 2021	Transit Shuttles	2020	NOx, VOCs, PM2.5	Emissions are reduced by encouraging increased transit use and reducing SOV travel.	Projects will reduce congestion by encouraging transit use.	Projects will reduce SOV travel by providing access to transit and work places
X065	NUDEP	Non-Road Construction Diesel Retrofit	Advanced Diesel Truck / Engine Technologies	2018	NOx, PM 2.5	Reduces diesel emissions from non-road construction equipment using catalytic converters and diesel particulate filters.	NA	NA
X065	County of Passaic - Smart Corridor - Traffic Signal Coordination Project	Signal Optimization along one corridor	Congestion Relief, Signals/ITS	2018	CO, NOx, VOCs, PM 2.5	Optimized traffic flow reduces pollutant emissions	Improved traffic operations reduces congestion	NA
X185	No MPO Identified/State Sponsored	Bicycle & Pedestrian Facilities/Accommodations	Bicycle/Pedestrian	2021	NOx, VOCs, PM 2.5, CO	Optimized traffic flow reduces pollutant emissions	Reduce VMT	Reduce SOV travel by shifting modes from auto use

DBNUM	PROJECT SPONSOR & TITLE	PROJECT DESCRIPTION	PROJECT TYPE	INITIAL TIP PROGRAM FISCAL YEAR	RELEVANT POLLUTANT	EMISSIONS BENEFIT	TRAFFIC CONGESTION BENEFIT (PHED)	TRAFFIC CONGESTION BENEFIT NON-SOV
X185	No MPO Identified/State Sponsored	Bicycle & Pedestrian Facilities/Accommodations	Bicycle/Pedestrian	2020	NOx, VOCs, PM 2.5, CO	Optimized traffic flow reduces pollutant emissions	Reduce VMT	Reduce SOV travel by shifting modes from auto use
X185	No MPO Identified/State Sponsored	Bike/Ped Facilities/accommodations	Bicycle/Pedestrian	2019	NOx, VOCs, PM 2.5, CO	Optimized traffic flow reduces pollutant emissions	Reduce VMT	Reduce SOV travel by shifting modes from auto use
X43	No MPO Identified/State Sponsored	Travel Demand Management Program	Transportation Management Associations, Marketing and outreach	2021	NOx, VOCs, PM 2.5, CO	Reduces vehicle trips.	Reduces congestion by reducing VMT on local streets.	Alternatives to driving provided



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