Adopted April 3, 2019

Metropolitan Transportation Plan

Long Range Transportation Plan for the Metro-Hartford Capitol Region

Appendices

CRCOG CAPITOL REGION COUNCIL OF GOVERNMENTS
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CONNECT 2045

Prepared in cooperation with the U.S. Department of Transportation (including its participating agencies) and the Connecticut Department of Transportation. The opinions, findings, and conclusions expressed in this publication are those of the Capitol Region Council of Governments and do not necessarily reflect the official views or policies of the Connecticut Department of Transportation and/or the U.S. Department of Transportation.

Appendix 1

Addendum for 2019-2045 MTP Ozone Conformity

Year	Ozone Area	Tons per summer day					
		Series 31G		Budgets		Difference	
		VOC	NOx	VOC	NOx	VOC	NOx
2018	CT Portion of NY-NJ-CT Area	16.61	23.74	17.6	24.6	-0.99	-0.86
	Greater CT Area	14.96	21.18	15.9	22.2	-0.94	-1.02
2020	Greater CT Area	13.54	17.84	15.9	22.2	-2.36	-4.36
2023	CT Portion of NY-NJ-CT Area	13.06	15.70	17.6	24.6	-4.54	-8.90
2025	CT Portion of NY-NJ-CT Area	12.39	13.94	17.6	24.6	-5.21	-10.66
	Greater CT Area	11.18	12.53	15.9	22.2	-4.72	-9.67
2035	CT Portion of NY-NJ-CT Area	7.27	8.45	17.6	24.6	-10.33	-16.15
	Greater CT Area	6.49	7.53	15.9	22.2	-9.41	-14.67
2045	CT Portion of NY-NJ-CT Area	6.41	7.85	17.6	24.6	-11.19	-16.75
	Greater CT Area	5.76	7.01	15.9	22.2	-10.14	-15.19

Ozone and $PM_{2.5}$ Air Quality Conformity Determination

of the 2019-2045 Metropolitan Transportation Plans and the
FY 2018-2021 Transportation Improvement Programs Amendments

Connecticut Department of Transportation

February 2019

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1. Executive Summary

This report documents the air quality conformity analysis of the 2018-2021 Transportation Improvement Programs (TIPs) and 2019-2045 Metropolitan Transportation Plans (MTPs) as carried out under the regulations contained in the United States Environmental Protection Agency's (EPA) final rule, published in the November 24, 1993 Federal Register, with subsequent amendments and additional federal guidance published by EPA, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The process involved consultation with affected agencies such as EPA, FHWA, FTA, the Connecticut Department of Energy and Environmental Protection (CTDEEP) and the Metropolitan Planning Organizations (MPOs) within the State of Connecticut. The air quality emissions analysis is a responsibility of the Connecticut Department of Transportation (CTDOT), acting as the MPO for this task.

"Conformity" is a requirement of the Federal Clean Air Act Amendments (CAAA) Section 176(c) (42 U.S.C.7506(c)) and EPA conformity regulations (40 CFR 93 Subpart A). These regulations require that each new MTP and TIP be demonstrated to conform to the State Implementation Plan (SIP) before the MTP and TIPs are approved by the MPO or accepted by the United States Department of Transportation (USDOT). This ensures that the MTP and TIPs are consistent with air quality goals and that progress is being made towards achieving and maintaining Federal air quality standards. A conformity determination is undertaken to estimate emissions that will result from an area's transportation system. The analysis must demonstrate that those emissions are within limits outlined in state air quality implementation plans.

Under the transportation conformity regulation, the principal criteria for a determination of conformity for transportation plans and programs are:

- The TIP and MTP must pass an emissions budget test using a motor vehicle emissions budget (MVEB) that has been found to be adequate by EPA for transportation conformity purposes, or an interim emission test;
- The latest planning assumptions and emission models specified for use in conformity determinations must be employed;
- The TIP and MTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and
- Interagency and public consultation.

As the federal air quality districts for ozone and PM2.5 include several counties and various planning regions, the emission analysis must be coordinated to include the TIPs and MTPs of several regions.

The CTDOT performs this coordination role. Each region submits its draft TIP and MTP to the CTDOT and the CTDOT in turn combines the TIPs and MTPs for all appropriate regions and conducts the analysis on each pollutant's impact for each air quality district in relation to the established MVEBs.

For the 2019-2045 MTP, summer day emission estimates for ozone precursors, volatile organic compounds (VOC) and nitrogen oxides (NOx), and annual emission estimates for particulate matter 2.5 microns or smaller (PM2.5) and NOx as a precursor were developed for years 2018, 2025, 2035, and 2045 forecast years. These emission estimates were calculated using EPA's Motor Vehicle Emission Simulator (MOVES2014b).

The results of this analysis, in Tables 1 and 2 below show that the 2019-2045 MTP and the 2018-2021 TIP mobile emissions are within the MVEBs for all forecast years per pollutant. This analysis provides a basis for a determination of conformity for the 2019-2045 MTP and the FY 2018-2021 TIP.

Table 1: Ozone Conformity - NOx and VOC Emissions Budget Test Results

Year	Ozone Area	Tons per day					
		Series 31G		Budgets		Difference	
		VOC	NOx	VOC	NOx	VOC	NOx
2018	CT Portion of NY-NJ-CT Area	16.61	23.74	17.6	24.6	- 0.99	- 0.86
	Greater CT Area	14.96	21.18	15.9	22.2	- 0.94	- 1.02
2025	CT Portion of NY-NJ-CT Area	12.39	13.94	17.6	24.6	- 5.21	-10.66
	Greater CT Area	11.18	12.53	15.9	22.2	- 4.72	- 9.67
2035	CT Portion of NY-NJ-CT Area	7.27	8.45	17.6	24.6	-10.33	-16.15
	Greater CT Area	6.49	7.53	15.9	22.2	- 9.41	-14.67
2045	CT Portion of NY-NJ-CT Area	6.41	7.85	17.6	24.6	-11.19	-16.75
	Greater CT Area	5.76	7.01	15.9	22.2	-10.14	-15.19

Table 2: PM2.5 Conformity - Direct PM2.5 and NOx Emission Budget Test Results

Year	PM2.5 Area	Tons per year					
		Series 31G		Budgets		Difference	
		Direct $PM_{2.5}$	NOx	Direct $PM_{2.5}$	NOx	Direct $PM_{2.5}$	NOx
2018	CT Portion of NY-NJ-CT Area	318.1	7,837.5	575.8	12,791.8	-257.7	-4,954.3
2025	CT Portion of NY-NJ-CT Area	221.6	4,707.9	516.0	9,728.1	-294.4	-5,020.2
2035	CT Portion of NY-NJ-CT Area	169.2	2,987.4	516.0	9,728.1	-346.8	-6,740.7
2045	CT Portion of NY-NJ-CT Area	152.4	2,803.5	516.0	9,728.1	-363.6	-6,924.6

2. What is Transportation Conformity?

Transportation conformity is a planning process required by the CAA Section 176(c), which establishes the framework for improving air quality to protect public health and the environment. The goal of transportation conformity is to ensure that FHWA and FTA funding and approvals are given to highway and public transportation activities that are consistent with air quality goals.

The CAA requires that metropolitan transportation plans, TIPs, and Federal projects conform to the purpose of the SIP. Conformity to a SIP means that such activities will not cause or contribute to any new violations of the National Ambient Air Quality Standards (NAAQS); increase the frequency or severity of NAAQS violations; or delay timely attainment of the NAAQS or any required interim milestone. Conformity requirements apply in areas that either do not meet or previously have not met air quality standards for ozone, carbon monoxide, particulate matter, or nitrogen dioxide. These areas are known as "nonattainment areas" or "maintenance areas", respectively.

Connecticut contains nonattainment areas for ozone (O3) and maintenance areas for carbon monoxide (CO) and PM2.5.

For MTP and TIP conformity, the determination shows that the total emissions from on-road travel on an area's transportation system are consistent with the MVEBs and goals for air quality found in the state's SIP. A conformity determination demonstrates that implementation of the MTP or TIP will not cause any new violations of the air quality standard, increase the frequency or severity of violations of the standard, or delay timely attainment of the standard or any interim milestone.

This document was developed by the CTDOT to demonstrate that the MTP and TIP, as updated, are in compliance with the MVEBs for the nonattainment and maintenance areas that fall within the state's planning boundary. In accordance with EPA regulation 40 CFR 93 Subpart A, this conformity determination is being issued in response to the adoption of new MTPs.

In addition, the conformity determination demonstrates compliance with the congestion management process in transportation management areas (23 CFR §450.322), development and content of the MTP (23 CFR §450.324), and fiscal constraints for MTPs and TIPs (40 CFR §93.108-119).

3. Nonattainment and Maintenance Areas in Connecticut

a. Ozone Nonattainment Areas

Ozone is an extremely reactive, colorless gas comprised of three atoms of oxygen. Ozone exists naturally in a layer of the earth's upper atmosphere known as the stratosphere, where it shields the earth from the sun's harmful ultraviolet rays. However, ozone found close to the earth's surface, called ground-level ozone, is a component of smog and a harmful pollutant. Ground-level ozone is produced by a complex chemical reaction between VOCs and NOx in the presence of sunlight.

Mobile source NOx emissions form when nitrogen and oxygen atoms chemically react inside the high pressure and temperature conditions in an engine. VOC emissions are a product of partial fuel combustion, fuel evaporation and refueling losses caused by spillage and vapor leakage.

Exposure to ozone has been linked to a number of respiratory health effects, including significant decreases in lung function, inflammation of airways, and increased symptoms such as cough and pain when breathing deeply. High concentrations of ozone can also contribute to reductions in agricultural crop production and forest yields, as well as increased susceptibility of plants to disease, pests and other environmental stresses

such as harsh weather. This pollutant alone contributes to the majority of unhealthy air quality days in Connecticut, as measured by the Air Quality Index (AQI).

EPA revised the ozone NAAQS in 2008. On May 21, 2012, EPA published rules in the Federal Register (77 FR 30160) that established the approach for classifying nonattainment areas, set attainment deadlines, and revoked the 1997 ozone standard for transportation conformity purposes. Areas designated nonattainment for the 2008 ozone NAAQS were classified into one of the following categories based on the severity of their ozone problem: Marginal, Moderate, Serious, Severe, or Extreme. EPA also established attainment dates for each area classification.

In May 2016, EPA determined that 11 Marginal areas did not attain the 2008 ozone standards by the July 20, 2015 attainment date, that these areas do not qualify for a 1-year attainment date extension and that they must be reclassified as Moderate based on their 2012-2014 air quality data. Both the Greater Connecticut and the Connecticut portion of the New York-Northern New Jersey-Long Island (NY-NJ-CT) nonattainment areas were two of the eleven areas.[1] The "bump- up" designation to Moderate was effective on June 3, 2016.

In this action, the EPA also established a due date of January 1, 2017, by which states with newly-reclassified Moderate areas must submit SIP revisions to address Moderate nonattainment area requirements for those areas. The reclassified areas must attain the 2008 ozone standards by the July 20, 2017 moderate attainment deadline.

On March 20, 2017, EPA notified CTDEEP that EPA had determined the 2017 MVEBs for the Greater Connecticut ozone nonattainment area, submitted as a SIP revision by CTDEEP to EPA on January 17, 2017, to be adequate for transportation conformity purposes. On May 31, 2017, EPA published its adequacy finding in the Federal Register (82 FR 24859) and the MVEBs became effective on June 15, 2017 for transportation conformity purposes.

On June 4, 2018, EPA published a final rule that designated new nonattainment areas for the 2015 Ozone NAAQS (83 FR 25776). These designations were effective on August 3, 2018. Therefore, conformity of transportation plans and TIPs for the 2015 Ozone NAAQS must be demonstrated by August 3, 2019. This analysis demonstrates conformity to the new 2015 Ozone NAAQS for both Connecticut non-attainment areas.

On October 1, 2018, EPA published a final rule approving certain SIP revisions relating to the 2008 8 hour NAAQS (83 FR 49297), including approval of the MVEB as shown in Table 3.

Table 3: Approved Motor Vehicle Emissions Budgets - Ozone

Year	Area	VOC (tons/summer day)	NOx (tons/summer day)
2017	Connecticut portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT Ozone Area	17.6	24.6
2017	Greater Connecticut Ozone Area	15.9	22.2

[1] Source: Table 4 in 77 FR 30160, subsequently revised based on a decision by the DC Circuit Court of Appeals (NRDC vs EPA; No. 12-1321; Decision date 12/23/2014).

b. PM2.5 Maintenance Area

Fine particulate matter, also called PM2.5, is a mixture of microscopic solids and liquid droplets suspended in air, where the size of the particles is equal to or less than 2.5 micrometers (about one-thirtieth the diameter of a human hair). Fine particles can be emitted directly (such as smoke from a fire, or as a component of automobile exhaust) or be formed indirectly in the air from power plant, industrial and mobile source emissions of gases such as sulfur dioxide and nitrogen oxides.

The health effects associated with exposure to fine particles are serious. Scientific studies have shown significant associations between elevated fine particle levels and premature death. Effects associated with fine particle exposure include aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days), lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and cardiac arrhythmia. While fine particles are unhealthy for anyone to breathe, people with heart or lung disease, asthmatics, older adults, and children are especially at risk.

In December of 2004, EPA signed the final rulemaking notice to designate attainment and nonattainment areas with respect to the PM2.5 NAAQS, becoming effective April 5, 2005. In Connecticut, Fairfield and New Haven Counties were included in the New York-Northern New Jersey-Long Island, NY-NJ-CT PM2.5 nonattainment area. On June 20, 2007, PM2.5 budgets were found to be adequate for the early progress SIP. CTDEEP submitted a re-designation request and maintenance plan for the Connecticut portion of the NY-NJ-CT area on June 22, 2012. The plan demonstrated that Connecticut's air quality met both the 1997 annual and the 2006 24-hour PM2.5 NAAQS due to a combination of national, regional and local control measures implemented to reduce emissions and presented a maintenance plan that ensures continued attainment through the year 2025. The end of the maintenance period was established as 2025, consistent with the CAA section 175A(a) requirement that the plan provide for maintenance of the NAAQS for at least 10 years after EPA formally approves the re-designation request.

EPA subsequently determined that the 2017 and 2025 MVEBs in the maintenance plan were adequate for transportation conformity purposes and effective as of February 20, 2013. On September 24, 2013, EPA published its approval of the PM2.5 re-designation request, establishing October 24, 2013 as the effective date of re-designation to attainment/maintenance for Connecticut's portion of the NY-NJ-CT area for both the 1997 annual and 24-hours PM2.5 NAAQS. Table 4 summarizes Connecticut's current PM2.5 MVEBs.

Table 4: Approved Motor Vehicle Emissions Budgets – PM2.5

Year	Area	Direct $PM_{2.5}$ (tons/year)	NOx (tons/year)
2017	Connecticut portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT $PM_{2.5}$ Area	575.8	12,791.8
2025	Connecticut portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT $PM_{2.5}$ Area	516.0	9,728.1

c. Carbon Monoxide Maintenance Areas

Carbon monoxide is produced by the incomplete burning of carbon in fuels, including gasoline. High concentrations of CO occur along roadsides in heavy traffic, particularly at major intersections and in enclosed areas such as garages and poorly ventilated tunnels. Peak concentrations occur during the colder months of the year when CO vehicular emissions are greater and meteorological inversion conditions occur more frequently, trapping pollutants near the ground.

There were formerly three CO nonattainment areas in the state. These were the Southwestern portion of the state, the New Haven-Meriden-Waterbury area, and the Hartford-New Britain-Middletown area. The remainder of the state was in attainment for CO. Attainment was demonstrated in each of the nonattainment areas and, subsequently, they were designated as full maintenance areas. On September 13, 2004, EPA approved a CTDEEP submittal for a SIP revision for re-designation of these areas to limited maintenance plan status, thus eliminating the need for budget testing. Effective January 2, 2016, the Hartford-New Britain-Middletown area was in full attainment status. The New Haven-Meriden-Waterbury area completed the maintenance period effective December 4, 2018 while the Southwestern Connecticut area will be effective May 10, 2020. In the future, “hot-spot” carbon monoxide analyses will be performed to satisfy “project level” conformity determinations.

d. PM10 Attainment Area – Limited Maintenance

EPA previously designated the City of New Haven as nonattainment with respect to the NAAQS for particulate matter with a nominal diameter of ten microns or less (PM10). The PM10 nonattainment status in New Haven was a local problem stemming from activities of several businesses located in the Stiles Street section of the city. Numerous violations in the late 1980’s and early 1990’s of Section 22a-174-18 (Fugitive Dust) of CTDEEP regulations in that section of the city led to a nonattainment designation (CTDEEP, 1994: Narrative Connecticut Department of Energy and Environmental Protection, State Implementation Plan Revision, For PM10, March 1994). Corrective actions were subsequently identified in the SIP and implemented, with no violations of the PM10 NAAQS since the mid-1990s.

On October 13, 2005, EPA published in the Federal Register (70 FR 59690), approval of a request by CTDEEP for a limited maintenance plan and re-designation of the New Haven nonattainment area to attainment for the PM10 NAAQS. This direct final rule became effective on December 12, 2005.

All construction activities undertaken in the City of New Haven are required to be performed in compliance with Section 22a-174-18 (Control of Particulate "Emissions") of the CTDEEP regulations. All reasonable available control measures must be implemented during construction to mitigate particulate matter emissions, including wind-blown fugitive dust, mud and dirt carry out, and re-entrained fugitive emission from mobile equipment.

As with limited maintenance plans for other pollutants, emissions budgets are considered to satisfy transportation conformity’s “budget test”. However, future “project level” conformity determination may require “hot spot” PM10 analyses for new transportation projects with significant diesel traffic in accordance with EPA’s Final Rule for “PM2.5 and PM10 Hot-Spot Analyses in Project-level Transportation Conformity Rule PM2.5 and PM10 Amendments; Final Rule (75 FR 4260, March 24, 2010) which became effective on April 23, 2010.

e. State of Connecticut Nonattainment/Attainment Maps

Figure 1: Connecticut Ozone Nonattainment Areas and PM2.5 Attainment/Maintenance Area

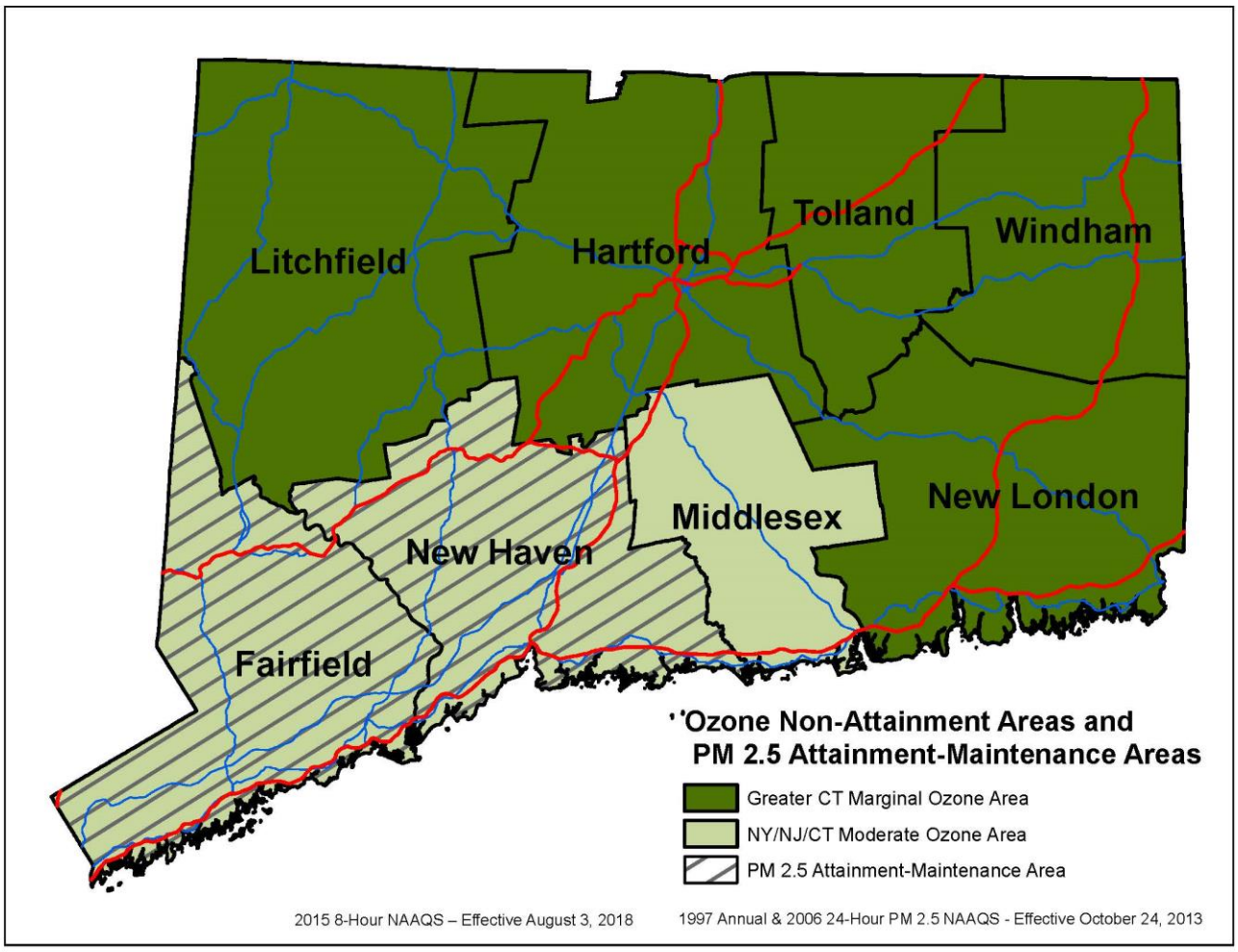
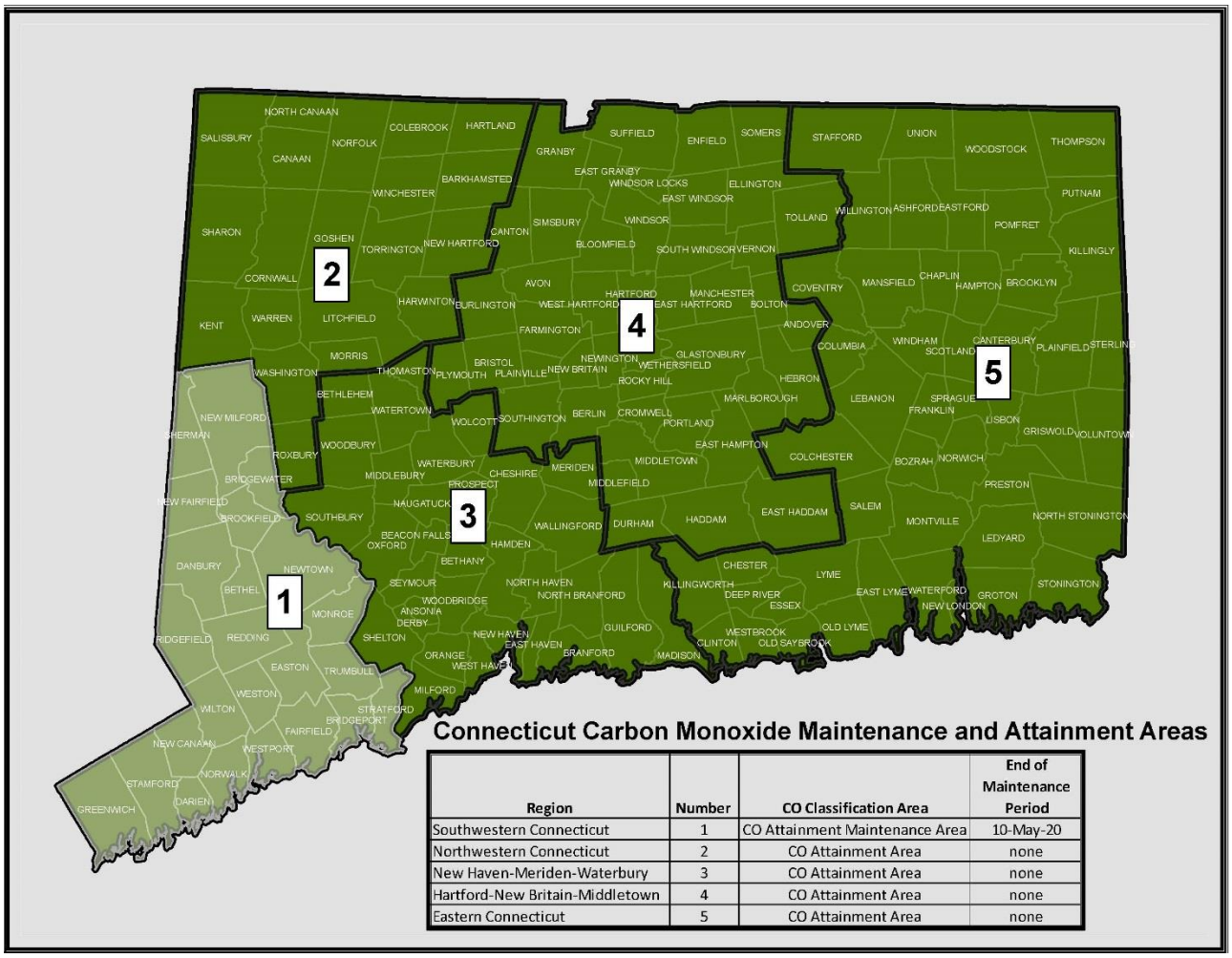


Figure 2: Connecticut Carbon Monoxide Maintenance and Attainment Areas



Connecticut Carbon Monoxide Maintenance and Attainment Areas

Region	Number	CO Classification Area	End of Maintenance Period
Southwestern Connecticut	1	CO Attainment Maintenance Area	10-May-20
Northwestern Connecticut	2	CO Attainment Area	none
New Haven-Meriden-Waterbury	3	CO Attainment Area	none
Hartford-New Britain-Middletown	4	CO Attainment Area	none
Eastern Connecticut	5	CO Attainment Area	none

4. How Does Connecticut Demonstrate Conformity?

a. Transportation Planning Work Program

CTDOT's FY 2019-2020 Transportation Planning Work Program contains a description of all planning efforts, including those related to air quality, to be sponsored or undertaken with federal assistance during FY 2019 and 2020. Included with this program are several tasks directly related to CTDOT's responsibilities under Connecticut's air quality SIP. Additional functions, such as those supporting the preparation of project level conformity analysis, are funded under project related tasks. This work program is available at CTDOT for review.

b. Interagency Consultation

The conformity rule requires that Federal, State, and local transportation and air quality agencies establish formal procedures to ensure interagency coordination on critical issues. Interagency consultation is a collaborative process between organizations on key elements of the transportation and air quality planning and provides a forum for effective state and local planning and decision making.

Key organizations included in the interagency consultation are FHWA, FTA, EPA, CTDOT, CTDEEP and the MPOs.

Some goals of interagency consultation are to:

- Ensure all agencies meet regularly and share information;
- Identify key issues early in the process;
- Enable well-coordinated schedules for TIP/MTP conformity determinations and SIP development; and
- Allow collaborative decision on methodologies, assumptions and conformity test selections.

A list of attendees and call-in participants of the Interagency Consultation Meeting is included in Appendix C along with a copy of the minutes from the meeting.

c. Public Consultation

The transportation conformity process must also include public consultation on the emissions analysis and conformity determination. This includes posting of relevant documentation and analysis on a "clearinghouse" webpage maintained through the interagency consultation process. All MPOs in the affected nonattainment or maintenance areas must provide thirty-day public comment periods and address any comments received. For this transportation conformity determination, all Connecticut MPOs will hold a thirty-day public comment period.

If any public comments were received, they will be attached and can be found in Appendix E.

d. Scenario Years

The "Action Scenario" is the future transportation system that will result from full implementation of the TIPs and MTP.

VOC/NOx emission analysis was conducted for ozone season summer day conditions for the following years:

- 2018 (Attainment year and near term analysis year)
- 2025 (Interim modeling year)
- 2035 (Interim modeling year)
- 2045 (Metropolitan Transportation Plan horizon year)

PM2.5 emission analysis was conducted for the same years but for annual average conditions.

e. Other Planning Documents

The enaction of Section 81 of Connecticut Public Act 13-277 repealed Section 13b-15 of the Connecticut General Statutes, no longer mandating a biennial Master Transportation Plan effective July 1, 2013. The Department's Capital Plan has been expanded to include much of the project information that was formerly included in the Master Transportation Plan. In addition, the Existing Systems document, the Statewide Long Range Transportation Plan and "Let's GO CT!" contain other information that was included in various Master Transportation Plans.

5. Latest Planning Assumptions and Emissions Model

a. VMT

Vehicle miles of travel (VMT) estimates were developed from CTDOT's statewide network-based travel demand model, Series 31G. The 2018 travel model network, to the extent practical, represents all state highways and major connecting non-state streets and roads, as well as the rail, local bus, and expresses bus systems that currently exist. Future highway networks for 2020, 2025, 2028, 2030, 2035 and 2045 and transit networks for 2020, 2025, 2030, and 2045 were built by adding Statewide Transportation Improvement Program (STIP), TIP and MTP projects (programmed for opening after 2018) to the 2018 network year. These networks were used to run travel demand models and conduct emissions analyses for the years 2018, 2025, 2035, and 2045. Projects for each model analysis year for which network changes were required are listed in Appendix B.

It should be noted that TIP and MTP projects which have negligible impact on trip distribution and/or highway capacity have not been incorporated into the network. These include, but are not limited to, geometric improvements of existing interchanges, short sections of climbing lanes, intersection improvements, transit projects dealing with equipment for existing facilities and vehicles, and transit operating assistance. Other projects that reduce the number of vehicle trips, VMT or both may not be included. Such projects include ridesharing and telecommuting programs, bicycling facilities, clean fuel vehicle programs or other possible actions. These types of considerations, while not explicitly accounted for in the travel demand model, will continue to reduce the emissions levels in the regions. Essentially, those projects that do not impact the travel demand forecasts are not included in the networks and/or analysis.

The network-based travel model used for this analysis is the model that CTDOT utilizes for transportation planning, programming and design requirements. This travel demand model uses demographic and land use assumptions based on the 2011-2015 American Community Survey 5-Year Estimates population and Connecticut Department of Labor 2015 employment estimates. Population and employment projections for the years 2020, 2030, 2040 and 2050 were developed by the Connecticut Department of Transportation, Travel Demand and Air Quality Modeling Unit.

The model uses a constrained equilibrium approach to allocate trips among links. The model was calibrated using 2015 ground counts and 2015 Highway Performance Monitoring System (HPMS) Vehicle Miles of Travel data.

In addition, the Employer Commute Options (ECO) Program has been made available to all employers and is incorporated in the travel demand model. It is felt that this process is an effective means of achieving Connecticut's clean air targets. Funding of this effort under the Congestion Mitigation and Air Quality Improvement (CMAQ) program is included in the TIP for FY 2018-2021. It is estimated that this program, if fully successful, could reduce VMT and mobile source emissions by 2% in Southwest Connecticut.

Peak hour directional traffic volumes were estimated as a percentage of the Average Daily Traffic (ADT) on a link-by-link basis. Based on automatic traffic recorder data, 9.0 percent, 8.5 percent, 8.0 percent and 7.5 percent of the ADT occurs during the four highest hours of the day. A 55:45 directional split was assumed. Hourly volumes were then converted to Service Flow Levels (SFL) and Volume to Capacity (V/C) ratios calculated as follows:

$$SFL = DHV / PHF * N$$

$$VC = SFL / C$$

where: DHV = Directional Hourly Volume
PHF = Peak Hour Factor = 0.9
N = Number of lanes
C = Capacity of lane

Peak period speeds were estimated from the 2000 Highway Capacity Manual based on the design speed, facility class, area type and calculated V/C ratio. On the expressway system, Connecticut- based free flow speed data was available. This data was deemed more appropriate and superseded the capacity manual speed values. The expressway free flow speeds were updated in 2005.

For the off-peak hours, traffic volume is not the controlling factor for vehicle speed. Off-peak link speeds were based on the Highway Capacity Manual free flow speeds as a function of facility class and area type. As before, Connecticut-based speed data was substituted for expressway travel, where available, and was also updated in 2005.

ShoreLine East, Hartford Rail Line, New Haven Rail Line, and its branch line schedules were updated in 2018 to reflect new headways and routes. Rail station boardings were then calibrated to 2015 actual counts in 2018 for both A.M. peak period and Midday off-peak service along all Connecticut rail lines.

Two special cases exist in the travel demand modeling process. These are centroid connectors and intrazonal trips:

- Centroid connectors represent the local roads used to gain access to the model network from centers of activity in each traffic analysis zone (TAZ). A speed of 25 mph is utilized for these links; and
- Intrazonal trips are trips that are too short to get on to the model network. VMT for intrazonal trips is calculated based on the size of each individual TAZ. A speed of 20 to 24 mph is utilized for peak period and 25 to 29 mph for off-peak.

The Daily Vehicle Miles of Travel (DVMT) is calculated using a methodology based on disaggregate speed and summarized by inventory area, functional classification, and speed. The annual VMT and speed profiles developed by this process are then combined with the emission factors from the MOVES2014b model to produce emission estimates for each scenario and time frame.

b. Emissions Model

For this transportation conformity analysis, the MOVES model, specifically MOVES2014b, was used to estimate on-road vehicle emissions for the action scenarios. MOVES is a state-of-the-science emission modeling system, developed by EPA, that estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, greenhouse gases, and air toxics.

MOVES estimates exhaust and evaporative emissions as well as brake and tire wear emissions from all types of on-road vehicles. It also uses a vehicle classification system based on the way vehicles are classified in the FHWA's Highway Performance Monitoring System (HPMS). Other parameters include VMT by vehicle and road type, vehicle hours traveled (VHT) by vehicle and road type, the number of each type of vehicle in the fleet, vehicle age distribution, model year, travel speed, roadway type, fuel information, meteorological data, such as ambient temperature and humidity, and applicable control measures such as reformulated gasoline (RFG) and inspection and maintenance (I/M) programs. Local inputs were cooperatively developed by CTDEEP and CTDOT, where applicable, using EPA recommended methods.[2]

The HPMS Vehicle Mix file was updated to reflect the average vehicle mix for the 2015-2017 timeframe. A Three year average was determined to be a more accurate representation of actual vehicle mix than the previous one year counts as the CTDOT rotates traffic and vehicle counts on a three year basis.

CTDEEP supplemented the 2011 DMV vehicle registration data with 2018 DMV vehicle registration data for motorcycle (source type 11) and school buses (source type 43).

In November 2012, EPA confirmed by telephone to CTDEEP that future conformity determinations utilizing newer versions of MOVES can be made by comparing emission results to the existing budgets based on older versions of MOVES. As new MVEBs are determined by EPA to be adequate for each area, they will be used to make conformity determinations.

For the ozone analysis, MOVES was only run to obtain VOC and NOx emissions on a typical summer weekday to compare to the ton per summer day ozone MVEBs. For the PM2.5 analyses, an annual emissions run was conducted for PM2.5 and NOx to compare to the ton per year PM2.5 MVEBs. All runs also included the National Low Emission Vehicle (NLEV) program in 2008 and all future years.

6. Conformity Tests and Air Quality Emissions Results

For the NY-NJ-CT ozone nonattainment area, VOC and NOx transportation emissions from the Action Scenarios must be less than the 2017 transportation emission budgets if analysis year is 2017 or later.

For the Greater Connecticut ozone nonattainment area, VOC and NOx transportation emissions from the Action Scenarios must be less than the 2017 transportation emission budgets if analysis year is 2017 or later.

For the NY-NJ-CT PM2.5 maintenance area, PM2.5 and NOx transportation emissions from the Action Scenarios must be less than the 2017 transportation emission budgets if analysis year is between 2017 and 2024.

For the NY-NJ-CT PM2.5 maintenance area, PM2.5 and NOx transportation emissions from the Action Scenarios must be less than the 2025 transportation emission budgets if analysis year is 2025 or later.

No tests for CO are required because the CO areas have been approved by EPA for Limited Maintenance Plan status.

[2] "MOVES2014, MOVES2014a, and MOVES2014b Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity", EPA-420-B-18-039, August 2018.

The following tables show the MOVES2014b modeled emissions for both ozone and PM2.5 areas compared to the applicable MVEBs for each pollutant. In all cases the transportation program and plan meets the required conformity tests.

Table 5: Ozone Conformity - NOx and VOC Emissions Budget Test Results

Year	Ozone Area	Tons per day					
		Series 31G		Budgets		Difference	
		VOC	NOx	VOC	NOx	VOC	NOx
2018	CT Portion of NY-NJ-CT Area	16.61	23.74	17.6	24.6	- 0.99	- 0.86
	Greater CT Area	14.96	21.18	15.9	22.2	- 0.94	- 1.02
2025	CT Portion of NY-NJ-CT Area	12.39	13.94	17.6	24.6	- 5.21	-10.66
	Greater CT Area	11.18	12.53	15.9	22.2	- 4.72	- 9.67
2035	CT Portion of NY-NJ-CT Area	7.27	8.45	17.6	24.6	-10.33	-16.15
	Greater CT Area	6.49	7.53	15.9	22.2	- 9.41	-14.67
2045	CT Portion of NY-NJ-CT Area	6.41	7.85	17.6	24.6	-11.19	-16.75
	Greater CT Area	5.76	7.01	15.9	22.2	-10.14	-15.19

Table 6: PM2.5 Conformity - Direct PM2.5 and NOx Emission Budget Test Results

Year	PM2.5 Area	Tons per year					
		Series 31G		Budgets		Difference	
		Direct $PM_{2.5}$	NOx	Direct $PM_{2.5}$	NOx	Direct $PM_{2.5}$	NOx
2018	CT Portion of NY-NJ-CT Area	318.1	7,837.5	575.8	12,791.8	-257.7	-4,954.3
2025	CT Portion of NY-NJ-CT Area	221.6	4,707.9	516.0	9,728.1	-294.4	-5,020.2
2035	CT Portion of NY-NJ-CT Area	169.2	2,987.4	516.0	9,728.1	-346.8	-6,740.7
2045	CT Portion of NY-NJ-CT Area	152.4	2,803.5	516.0	9,728.1	-363.6	-6,924.6

Emission Summary Tables are posted in Appendix D.

This analysis in no way reflects the full benefit in air quality from the transportation plan and program. The network-based modeling process is capable of assessing the impact of major new highway or transit service. It does not reflect the impact from the many projects, which are categorically excluded from the requirement of conformity. These projects include numerous improvements to intersections, which will allow traffic to flow more efficiently, thus reducing delay, fuel usage and emissions. Included in the TIP, but not reflected in this analysis, are many projects to maintain existing rail and bus systems. Without these projects, those systems could not offer the high level of service they do. With them, the mass transit systems function more efficiently, improve safety, and provide a more dependable and aesthetically appealing service. These advantages will retain existing patrons and attract additional riders to the system. The technology to quantify the air quality benefits from these programs is not currently available.

Changes in the transportation system will not produce significant emissions reductions because of the massive existing rail, bus, highway systems, and land development already in place. Change in these aspects is always at the margin, producing very small impacts.

As shown in this analysis, transportation emissions are declining dramatically and will continue to do so. This is primarily due to programs such as federal heavy-duty vehicle standards, reformulated fuels, enhanced inspection and maintenance programs, and Connecticut's low emissions vehicle (LEV) program.

7. Conclusions

CTDOT has assessed its compliance with the applicable conformity criteria requirements of the 1990 CAAA. Based upon this analysis, it is concluded that all elements of CTDOT's transportation program and the Metropolitan Transportation Plans conform to applicable SIP and 1990 CAAA Conformity Guidance criteria and the approved transportation conformity budgets.

8. Contact Information

Please direct any questions you may have on the air quality emission analysis to:

Connecticut Department of Transportation
Bureau of Policy and Planning
Division of Coordination, Modeling and Crash Data
Travel Demand / Air Quality Modeling Unit
2800 Berlin Turnpike
Newington, CT. 06111
(860) 594-2032
Email: Judy.Raymond@ct.gov

All MOVES modeling files and runstreams are available for review upon request on the Department's MOVES FTP site. The files will remain available during the 30-day public review period.

9. Appendices

In addition to the information required for a conformity determination, the following is attached:

Appendix A:	Acronyms
Appendix B:	List of Projects Included in Conformity Analysis by Network Year
Appendix C:	Interagency Consultation Meeting
Appendix D:	Emissions Summary Tables
Appendix E:	Public Comments (if Any)

Appendix A

Acronyms

Acronym	Meaning
ADT	Average Daily Traffic
AQI	Air Quality Index
CAAA	Clean Air Act Amendments (1990)
CO	Carbon Monoxide
CFR	Code of Federal Regulations
CTDEEP	Connecticut Department of Energy and Environmental Protection
CTDOT	Connecticut Department of Transportation
CMAQ	Congestion Mitigation and Air Quality Improvement Program
DHV	Design Hourly Volume
DVMT	Daily Vehicle Miles of Travel
ECO	Employee Commute Option
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FTP	File Transfer Protocol
FR	Federal Register
HPMS	Highway Performance Monitoring System
I/M	Inspection Maintenance Program
MTP	Metropolitan Transportation Plan
MOVES	Mobile Vehicle Emission Simulator
MPO	Metropolitan Planning Organization
MVEB	Motor Vehicle Emission Budget
NAAQS	National Ambient Air Quality Standards
NLEV	National Low Emission Vehicle
NOx	Nitrogen Oxides
PHF	Peak Hour Factor
$PM_{2.5}$	Fine Particulate Matter less than 2.5 micrometers
PM_{10}	Fine Particulate Matter less than 10 micrometers
SFL	Service Flow Levels
SIP	State Implementation Plan
STIP	Statewide Transportation Improvement Program
TAZ	Traffic Analysis Zone
TCM	Transportation Control Measure
TIP	Transportation Improvement Program
U.S.C.	United States Code
U.S. DOT	U.S. Department of Transportation
V/C	Volume to Capacity
VHT	Vehicle Hours Traveled
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound

Appendix B

List of Projects Included in Conformity Analysis by Network Year

MPO	Project #	Town	Route/Street Number	Project Description	Network Year
CRCOG		Various	CTFastrak	CTFastrak Stations & Fixed Guideway	2015
GBVMPO	0036-0179	Derby	Route 8	Reconstruct interchanges 16 & 17; extend Pershing Drive & construct local roads	2016
CNV MPO	0017-0182	Bristol	Route 6	Addition of a second through lane on Route 6 Eastbound from Carol Drive to Peggy Lane	2018
CNV MPO	0051-xxxx	Waterbury	Various	TIGER Grant includes various roadway changes including reconstruction/extension of Jackson Street. Extension will meet at Freight Street and continue to West Main	2018
CRCOG	0051-0259	Farmington	I-84/Route 4/Route 6	Interchange BSWY	2018
CRCOG		Hartford	Hartford Line	Hartford Line - Existing Stations - Hartford	2018
GBVMPO	0138-0211	Stratford	Route 1	Addition of a through lane on Rt 1 Southbound from Nobel Street to Soundview Avenue	2018
MULTIPLE	0170-2296	Berlin	Hartford Line	Hartford Line - Existing Stations - Berlin	2018
MULTIPLE	0170-2296	Various	Hartford Line	Hartford Line - Grade Crossing Elimination Program	2018
MULTIPLE	0170-2296	Meriden	Hartford Line	Hartford Line - Existing Stations - Meriden	2018
MULTIPLE	0170-2296	Wallingford	Hartford Line	Hartford Line - Existing Stations - Wallingford	2018
MULTIPLE	0320-0015	Various	Hartford Line	Hartford Line-Windsor Station (FDP 9/16/2020)	2018
MULTIPLE	0320-0016	Various	Hartford Line	Hartford Line-Windsor Locks (FDP 10/2/2019)	2018
MULTIPLE	Various	Various	Hartford Line	Hartford Line	2018
WESTCOG	0102-0325	Norwalk	Route 1	Addition of a through lane on Rt. 1 Northbound from France Street to Rt. 53	2018
WESTCOG	0135-0301	Stamford	Atlantic Street	Reconstruction of I-95 off ramps and Atlantic Street in vicinity of Metro North Railroad Bridge No. 08012R	2018
CNV MPO	0151-0273	Waterbury	I-84	Upgrade Expressway - Phase 3 (80%)	2020
CNV MPO	0124-xxx	Seymour	Route 113	Between Interchange 22 and 23 to improve access	2020
CNV MPO	0124-xxxx	Seymour	Route 8	Realign interchange with new extension of Derby Road	2020
CNV MPO	0126-xxxx	Shelton	Route 8	Interchange 11 - Construct new SB entrance ramp, Widen Bridgeport Avenue	2020
CNV MPO	0126-xxxx	Shelton	Route 714	Between Huntington Avenue and Constitution Boulevard	2020
GBVMPO	0015-0371	Bridgeport	Seaview Ave	Seaview Avenue corridor: Operational improvements to corridor, and north of Rt 1 to provide access for proposed Lake Success Business Park and future local developments	2020
GBVMPO	0015-xxxx	Bridgeport	Route 130	Reconstruct and widen Rt 130 from Stratford Avenue bridge to Yellow Mill bridge	2020
GBVMPO		Stratford	Main St/Route 113	Main St Complete Street Implementation: Narrow Main St. from 4 lanes to 3, add buffered bike lanes, expand sidewalks and increase landscaped buffer	2020
WESTCOG	0034-0347	Danbury	SR 806 (Newtown Rd)	Improvements: Old Newtown to Plumtrees and Eagle to Industrial Plaza Rd	2020
WESTCOG	0008-xxxx	Danbury	White Street	Operational Improvements on White Street at Locust Avenue and Eighth Avenue	2020
CNV MPO	0080-0128	Middlebury	I-84/Route 63/Route 64	Improvements on Routes 63, 64 & I-84 WB Interchange 17: Build new connector road and realign existing state routes	2025
CNV MPO		Beacon Falls	NRG	NRG Beacon Falls -- Phase II: Naugatuck River Greenway: Extend the road diet along South Main Street and install a multi-use trail	2025
CNV MPO		Beacon Falls	NRG	NRG Beacon Falls -- Phase III: Naugatuck River Greenway: Extend the road diet along North Main Street and install a multi-use trail from about Depot Street to Church Street	2025
CNV MPO		Prospect	Route 69	Route 69 Traffic & Pedestrian Improvements: Optimize signal timing. Provide a lead or lag phase for the NB Route 69 approach left turners and prohibit the SB left turn onto Scott Road	2025
CNV MPO		Thomaston	US Route 6	Main St Safety Improvements: Narrowing lanes, eliminating one of the EB Main St lanes west of the ramps, and providing turn (deceleration) lanes into Pleasant St	2025
CNV MPO		Waterbury	SR 801	East Main St Spot Improvements & Lane configurations: Reconfigure to provide a uniform road width and number of lanes – one travel lane in each direction	2025
CNV MPO		Waterbury	SR 801	Safety improvments East Main Street: Remove 1 through lane in eastbound direction between Cherry Street and Brass Mill Dr. Shorten pedestrian crossing distances.	2025
CNV MPO		Waterbury	CT Transit	Lakewood Road Bus: Add new 1 hour headway service along Lakewood Road. Stagger service with 422 to reduce headways to one half hour on trunk.	2025
CRCOG	0042-0317	East Hartford	Route 2	Rt. 2 Operational & Safety Improvements Between Exits 3 and 5	2025
CRCOG	0055-0142	Granby	10/202	Major Intersection Improvement at CT 20/189	2025
CRCOG	0063-0703	Hartford	I-91/Route 15	Relocation & Reconfigure Interchange 29 (CN)	2025
CRCOG	0131-0190	Southington	CT 10	NHS - Remove Br 00518, reconstruct CT10/322 intersection	2025

MPO	Project #	Town	Route/Street Number	Project Description	Network Year
CRCOG	0155-0171	West Hartford	I-84	I-84 West Hartford Exits 40 & 42	2025
CRCOG		Manchester	I-84	Auxiliary lanes between Exits 62 and 63	2025
CRCOG		Manchester	I-84	Auxiliary lanes between Exits 63 and 64/65	2025
GBVMPO	0015-0368	Bridgeport	Route 700	Lafayatte Circle realignment: Realign from a large, irregular one-way circulating configuration to several more typical roadway intersections connecting several city streets	2025
GBVMPO	0036-0184	Derby	Route 34	Reconstruct and widen Main Street from Bridge St. to Ausonio Dr. to 4 travel lanes	2025
GBVMPO	0138-0248	Stratford	I-95	Interchange 33: Reconstruct the partial interchange and replace it with a full-directional, diamond interchange.	2025
GBVMPO		Fairfield	Route 58 at Black Rock Tpke.	Provide a 4-leg single-lane roundabout: Modify access with Moritz Pl and Rt. 58 to be right-in/right-out access preceding roundabout. Remove access from Rt 58 to Whitewood Dr.	2025
GBVMPO		Fairfield	Route 58	Formalize left lane southbound as a dedicated left-turn lane	2025
GBVMPO		Fairfield	Route 58	Widen Black Rock Turnpike transition from 2 lanes to 4 in area of Samp Mortar to Tahmore Drive	2025
GBVMPO		Monroe	Route 25	Additional Southbound through lane; Widening on Purdy Hill Rd and Judd Rd for an exclusive left, exclusive through, and an exclusive right turn lanes.	2025
GBVMPO		Seymour	New Road	Route 42 & Route 67 Connector: Construct new connector arterial (2 lanes) between Route 42 in Beacon Falls and Route 67 in Seymour.	2025
GBVMPO		Seymour	WBL	Relocate the Seymour Rail Station to north of Route 67 as part of TOD redevelopment project	2025
GBVMPO		Stratford	Main St/Route 113	Main St Complete Street Implementation: Narrow Main St. from 4 lanes to 3 (Barnum Ave to Fenelon Pl) Single lane in each direction w/a center turn lane.	2025
MULTIPLE	0096-0204	Newtown	I-84	Exit 11 Intersection Improvements at Rt. 34/SR 490	2025
RiverCOG	0082-0316	Middletown	Route 9/Route 17	Rt. 9 / Rt. 17 Operational & Safety Improvements at Ramp (Reconfigure Rt 17 On-ramp to Rt 9 NB)	2025
RiverCOG	0082-0318	Middletown	Route 9	Rt. 9 Removal of Lights in Middletown	2025
SCCOG	0085-0146	Montville/Salem	Route 85	Corridor Improvements South of CT 82	2025
SCCOG	0120-0079	Montville	Route 85	Addition of a second through lane on Route 85 Northbound - north of Chesterfield Rd to south of Deer Run	2025
SCCOG	0120-0094	Salem	Route 85	Corridor Improvements North of CT 82	2025
SCCOG		Colchester	Route 2	Interchange improvements at Exit 17, add eastbound on-ramp, westbound off-ramp	2025
SCCOG		Norwich/New London	CT Transit	New BRT-like service - Norwich and New London	2025
SCCOG		Various	SEAT	25% increase in service frequency,	2025
WESTCOG	0102-0297	Norwalk	East Ave	Reconstruction @ Metro North Br No. 42.14	2025
SCCOG		Norwich	Route 82	Removal of a through lane on Rt 82 eastbound from west of Pine St to west of Fairmont St	2028
CNV MPO		Naugatuck	Route 8	Interchange 27 Improvements: Widening SB off-ramp on structure at Interchange 27 to provide right turn lane; Close NB off-ramp to North Main St; Close SB on-ramp from North Main St;	2030
CNV MPO		Naugatuck	Route 8	Interchange 28/29 Improvements: Close SB on-ramp from Exit 29 and SB off-ramp to North Main St; Install barrier to provide local access between Platts Mill Rd & North Main St; New SB on-ramp from local	2030
CRCOG	0109-xxxx	Plainville	New Britain Ave	Add lane from New Britain Ave/Cooke Street to Hooker Street	2030
GBVMPO	0036-xxxx	Derby	Route 8	Route 8 Interchange 16 and 17; Construct new NB ramps. Close old ramps	2030
GBVMPO	0126-xxxx	Shelton	Route 8	Interchange 14 - Construct new SB entrance ramp	2030
GBVMPO		Bridgeport	I-95	Reconstruct and modify the southbound approach I-95 project to eliminate the weave section created by the entrance to Rt 8/25 from Washington Ave followed by the exit to Myrtle Ave.	2030
GBVMPO		Bridgeport	Route 8/Route 25	Construct a third lane for Rt 8 northbound from the split to the vicinity of off-ramp to Rt 15.	2030
GBVMPO		Fairfield	Mill Plain Road	Addition of lane to southbound approach from I-95 ramps to US 1	2030
GBVMPO		Fairfield	Route 58	Reduce Rt. 58 to one travel lane in each direction - Black Rock Tpke and Burroughs Dr	2030
GBVMPO		Fairfield	Route 58	Provide a 4-leg single-lane roundabout with a right-turn bypass lane for SB approach at Burroughs Dr & Katona Dr	2030
GBVMPO		Fairfield	Route 58	Narrow Rt 58 to one through lane in each direction. Shoprite to Stillson Rd	2030
GBVMPO		Fairfield	Route 58	Narrow Rt. 58 to one through lane in the southbound direction. Old Navy to Fairfield Woods Rd	2030
GBVMPO		Shelton	SR 714	Widening of Bridgeport Avenue to provide a consistent 4-lane cross section with turn lanes from Trumbull town line to Constitution Boulevard	2030
MULTIPLE	0320-0012	Various	Hartford Line	Hartford Line-North Haven Station (FDP 7/1/2020)	2030
MULTIPLE	0320-0013	Newington	Hartford Line	Hartford Line - Future Stations - Newington	2030
MULTIPLE	0320-0014	West Hartford	Hartford Line	Hartford Line - Future Stations - West Hartford	2030

MPO	Project #	Town	Route/Street Number	Project Description	Network Year
MULTIPLE	0320-0017	Enfield	Hartford Line	Hartford Line - Future Stations - Enfield	2030
MULTIPLE	0034-xxxx	Various	I-84	Add lane between Interchanges 3 and 4. Between Interchanges 12 and 13	2030
SCCOG		New London	I-95	Close exit 84E to Williams Street	2030
SCCOG		Norwich	12/2	Convert downtown circulation to two-way, convert chelsea harbor drive to local parking/park facility, streetscape - Water Street to carry Chelsea Harbor Drive traffic	2030
SCCOG		Preston	Route 2A	New Parallel 2-lane Route 2A Bridge (Add Second Span to Mohegan Pequot Bridge)	2030
SCCOG		Windham	Plains Road/Route 203	New Road Connecting Plains Road to Route 203	2030
SCROG	0014-xxxx	Branford	Route 1	Widening East Haven Town Line to Alps Road (Echlin Road Private)	2030
SCROG	0014-xxxx	Branford	Route 1	Widening Route 146 to Cedar Street	2030
SCROG	0014-xxxx	Branford	Route 1	Widening Cedar Street to East Main	2030
SCROG	0014-xxxx	Branford	Route 1	Widening East Main to 1-95 Exit 55	2030
SCROG	0014-xxxx	Branford	Route 1	Widening I-95 Exit 55 to Leetes Island Road	2030
SCROG	0059-xxxx	Guilford	Route 1	Widening Bullard Road extension to Route 77	2030
SCROG	0059-xxxx	Guilford	Route 1	Widening State Street to Tanner Marsh Road	2030
SCROG	0061-xxxx	Hamden	Route 10	Widening Washington Avenue to Route 40	2030
SCROG	0061-xxxx	Hamden	Route 10	Widening Route 40 to Todd Street	2030
SCROG	0061-xxxx	Hamden	Route 10	Widening Todd Street to Shepard Avenue	2030
SCROG	0061-xxxx	Hamden	Route 10	Widening River Street to Cheshire Town Line	2030
SCROG	0061-xxxx	Hamden/North Haven	Route 5	Widening Olds Street (Hamden) to Sackett Point Road	2030
SCROG		Orange	NHL	NHL - New Stations/Parking - Orange	2030
SCROG	0079-xxxx	Meriden	Route 5	Widening Wallingford Town Line to Olive Street (Route 71)	2030
SCROG	0083-xxxx	Milford	Route 162	Widening from West of Old Gate Lane to Gulf Street/Clark Street to Route 1	2030
SCROG	0092-0649	New Haven		Long Wharf access Plan Widen I-95 (in separate project), Eliminate Long Wharf Drive to expand park, add new road from Long Wharf Drive	2030
SCROG	0092-xxxx	New Haven/Woodbridge	Route 69	Widening from Route 63 to Landin Street	2030
SCROG	0092-xxxx	New Haven/Woodbridge	Route 63	Widening from Dayton Street (NH) to Landin Street (Wdbg)	2030
SCROG	0098-xxxx	North Branford	Route 80	Widening from East Haven Town Line to Doral Farms Road and Route 22 to Guilford Town Line	2030
SCROG	0106-xxxx	Orange	Route 162	Widening from West Haven Town Line to US 1	2030
SCROG	0148-xxxx	Wallingford	Route 5	Widening from South Orchard Street. to Ward Street and Christian Road to Meriden Town Line	2030
SCROG	0148-xxxx	Wallingford	Route 5	Widening from Route 71 overpass South of Old Colony Road to Route 68	2030
SCROG	0156-xxxx	West Haven	Route 122	Widening from Route 1 to Elm Street	2030
SCROG	0156-xxxx	West Haven	Route 1	Widening from Campbell Avenue to Orange Town Line	2030
SCROG	0156-xxxx	West Haven	Route 162	Widening from Elm Street to Greta Street	2030
SCROG	0156-xxxx	West Haven	Route 162	Widening from Bull Hill Ln to Orange Town Line	2030
WESTCOG	0018-0124	Brookfield	US 202	Widening South of Old State Road to Route 133	2030
WESTCOG	0034-0288	Danbury	Route 6	Add lane from Kenosia Avenue easterly to I-84 (Exit 4)	2030
WESTCOG	0102-0269	Norwalk	Route 7/Route 15	Upgrade to full interchange at Merritt Parkway (Route 15)	2030
WESTCOG	0102-0312	Norwalk	Route 7/Route 15	Reconstruction of Interchange 40 Merritt Parkway and Route 7 (Main Avenue).	2030
WESTCOG	0102-0358	Norwalk	Route 7	Rt. 7/Rt. 15 Interchange Reconstruction and Reconfiguration	2030
WESTCOG	0034-xxxx	Danbury	Route 6	Add lane from I-84 (Exit 2) East to Kenosia Avenue	2030
WESTCOG	0034-xxxx	Danbury	Route 37	Add lane from Route I-84 (Exit 6) Northerly to Jeanette Street	2030
WESTCOG	0034-xxxx	Danbury	Route 37	Add lane from Route 53 (Main Street) northerly to I-84 (Exit 6)	2030
WESTCOG	0034-xxxx	Danbury	Kenosia Ave	Add lane Kenosia Avenue from Backus Avenue to Vicinity of Lake Kenosia	2030
WESTCOG	0034-xxxx	Danbury	Backus Ave	Add lane Backus Avenue from Kenosia Avenue to Miry Brook Road	2030
WESTCOG	0034-xxxx	Danbury	Route 53	Add lane from South Street northerly to Boughton Street	2030
WESTCOG	0096-xxxx	Newtown	New Road	New Road across Old Fairfield Hills Hospital Campus, From Route 6 South to Route 860	2030
WESTCOG	0403-xxxx	Stamford	CT Transit	Route 1 BRT - Norwalk/Stamford	2030
CRCOG		Manchester	New Road	Buckland: Redstone Rd Extension - Modify existing I-84E off-ramp at Exit 62 to provide access from the existing ramp to proposed structures over Buckland Street and existing on-ramp to I-84 eastbound.	2035
CRCOG		Rocky Hill	Elm Street	Elm Street Connector Roadway - Create an extension from Corporate Place to Elm Street	2035

MPO	Project #	Town	Route/Street Number	Project Description	Network Year
CRCOG		Simsbury	Route 10	Rt.10 between Ely Lane and Wolcott Rd - build parallel road west of Rt.10 between Hoskins Rd and north through new development properties.	2035
CRCOG		Windsor Locks	Bradley Park Road	Bradley Airport-East Granby - Bradley Park Road Extension	2035
CRCOG		Windsor Locks	Northern Bradley Connector	A new Northern Bradley Connector Roadway is recommended to connect Rt. 75 near Bradley Airport to Rt. 190 over the Connecticut River.	2035
GBVMPO		Monroe/Trumbull	Route 25	Major widening of Main Street (Rt. 25) to four lanes with turn lanes at major intersections from the end of the divided section north of Rt. 111 to the Monroe-Newtown town line.	2035
GBVMPO		Stratford	I-95	Interchanges 31 & 32: Reduce the number of ramps and provide separation of the interchanges, relocating and constructing a new diamond interchange at Rt. 130	2035
GBVMPO		Bridgeport	NHL	NHL - New Stations/Parking - Barnum	2040
MULTIPLE		Various	WBL	Operations: Expand service along the Waterbury branch line to provide 30-minute headways during the AM & PM peak periods	2040
CNV MPO		Various	I-84	I-84 Widening: Increase I-84 to three lanes west of Waterbury	2045
CNV MPO		Various	WBL	Operations: Expand service along the Waterbury branch line to provide 30-minute headways during the AM & PM peak periods	2045
CRCOG	0051-0259	Farmington	I-84	I-84 Interchange at Rt. 4 & Rt. 6 in Farmington	2045
GBVMPO		Bridgeport/Fairfield	I-95	I-95 Northbound Widening Between Exits 19 and 27A (Phase 1 - Route 8 Connector)	2045
GBVMPO		Bridgeport/Fairfield	I-95	I-95 Northbound Widening Between Exits 19 and 27A (Phase 2 - Exits 19-25)	2045
GBVMPO		Bridgeport/Fairfield/Stratford	Route 1	Provide lane continuity over its entire length by widening US Rt. 1 to a uniform four travel lanes with left turn lanes at signalized intersections. Westport/Fairfield line to Stratford/Milford line	2045
GBVMPO		Trumbull	Route 25	Rt. 25 at Whitney Avenue: Construct a partial interchange to provide access to and from Whitney Ave	2045
MULTIPLE		Stamford/Darien/Norwalk	I-95	I-95 Northbound Widening Between Exits 9 and 19	2045
MULTIPLE	0173-xxxx	Statewide	I-95	Widen I-95 between Stamford to Bridgeport (PE), $99 million total	2045
MULTIPLE		Various	SLE	SLE - Extension of Rail Service to Rhode Island	2045
SCCOG	0044-xxxx	East Lyme/New London	I-95	Placeholder - Widen I-95 b/t I-395 and Gold Star Bridge	2045
SCCOG	0044-xxxx	East Lyme/New London	I-95	Placeholder - Widen I-95 b/t I-395 and Gold Star Bridge - extend the frontage roads between the two projects 2 lanes additional in each direction (mainline and frontage road combined)	2045
SCCOG	0172-xxxx	Old Saybrook/New London	I-95	Placeholder - Widen I-95 from the Baldwin to Gold Star Bridge (3 lanes in each direction)	2045
SCCOG		East Lyme	I-95	I-95 Exit 70 to Exit 74 widening from Baldwin to I-395 Interchange	2045
SCCOG		Niantic	SLE	SLE - Niantic Station	2045
SCCOG		Various	I-95	I-95 Spot Improvements East of Thames River to Rhode Island State Line (at Exits 88,89 and 90)	2045
SCCOG		Waterford	I-95	I-95 Improvements between Exit 80 and Exit 82A	2045
SCROG		Branford	I-95	I-95 Northbound Widening from Branford Exit 54 to Exit 56	2045
WESTCOG		Darien/Norwalk	I-95	I-95 Northbound & Southbound Widening & Reconfiguration Between Exits 13 &16	2045
WESTCOG		Greenwich/Stamford	I-95	I-95 Southbound Widening Between Exits 1 and 7 and Replacing Bridge #0001	2045

Appendix C

Interagency Consultation Meeting

Interagency Consultation Meeting
2019-2045 Metropolitan Transportation Plan
Connecticut Department of Transportation
November 19, 2018 Room 2141
GoTo Meeting

Attendees:

Ken Shooshan-Stoller – FHWA
Erik Shortell – FHWA
Kurt Salmoiraghi - FHWA
Leah Sirmin - FTA
Ariel Garcia – EPA
Eric Rackauskas – EPA
Louis Corsino - CTDEEP
Tom Malone – CRCOG
Devon Lechtenberg - CRCOG
Rob Aloise – CRCOG
Christian Meyer – CNVMPO
Zachary Guarino – CNVMPO
Matt Fulda – CTMetro COG
Patrick Carlton – CTMetro COG
Mark Hoover – CTMetro COG
Robert Haramut – LCRVCOG
Kate Rattan – SECCOG
Kristen Hadjstylianos – Western COG
Jamie Bastian – Western COG
Robbin Cabelus - CTDOT
Maribeth Wojenski – CTDOT
Judy Raymond – CTDOT
Kasey Faraci – CTDOT
Edgar Wynkoop - CTDOT
Grayson Wright – CTDOT
Sara Radacsi – CTDOT
Matthew Cegielski – CTDOT
Steven Giannitti - CTDOT
Greg Pacelli – CTDOT

The Interagency Consultation Meeting was held to review projects submitted for the 2019-2045 MTP.

The Conformity Documents will be electronically distributed to the MPOs, FHWA, FTA, EPA and CTDEEP. The MPOs will need to hold a 30-day public review and comment period. At the end of this review period, the MPO will hold a Policy Board meeting to endorse the Air Quality Conformity determination.

There was also a brief discussion on the travel demand model and emissions software planning assumptions employed in the conformity analysis. CTDEEP is updating the Vehicle Registration Data and should have it available for use by the end of November 2018.

The schedule for the 2019-2045 Metropolitan Transportation Plan Conformity Determination Analysis is as follows:

- MPOs transmit signed and dated Concurrent Form to judy.raymond@ct.gov by November 20, 2018
- CTDOT Travel Demand Model Unit performs the air quality analysis and sends the Air Quality Conformity Determination Report electronically to all MPOs in early February 2019
- MPOs advertise and hold a 30-day public review and comment period for the Air Quality Conformity
- MPOs hold a Policy Board meeting approving and endorsing the Air Quality Conformity and transmit resolutions to judy.raymond@ct.gov after Policy Board meeting.

It is important that all MPOs follow this schedule to ensure that the MTP Conformity Determinations can go forward on schedule.

PLANNING ASSUMPTIONS

Ozone and $PM_{2.5}$
2019-2045 Metropolitan Transportation Plan
November 19, 2018

Planning Assumptions for Review	Frequency of Review*	Responsible Agency	Year of Data
Socioeconomic Data	At least every 5 years	CTDOT	2015 ACS Data 2015 DOL
DMV Vehicle Registration Data	At least every 5 years	CTDEEP	2018**
State Vehicle Inspection and Maintenance Program	Each conformity round	CTDEEP	Same as currently approved I&M SIP
State Low Emission Vehicle Program	Each conformity round following approval into the SIP	CTDEEP	Same as SIP
VMT Mix Data	At least every 5 years	CTDEEP	2018***
Analysis Years – $PM_{2.5}$	Each conformity round	CTDOT/CTDEEP	2018, 2025, 2035, 2045
Analysis Years – Ozone	Each conformity round	CTDOT/CTDEEP	2018, 2025, 2035, 2045
Emission Budget – $PM_{2.5}$	As SIP revised/updated	CTDEEP	2018: PM2.5 575.8 NOx 12,791.8 2025: PM2.5 516.0 NOx 9,728.1
Emission Budget – Ozone	As SIP revised/updated	CTDEEP	NY Area: VOC 17.6 NOx 24.6 Gr. CT: VOC 15.9 NOx 22.2
Temperatures and Humidity	As SIP revised/updated	CTDEEP	X
Control Strategies	Each conformity round	CTDEEP	X
HPMS VMT	Each conformity round	CTDOT	2015

* Review of Planning Assumptions does not necessarily prelude an update or calibration of the travel demand model.
** Data updated in 2018 based on 2011 DMV registration data and 2018 motorcycle and school bus registration data
*** Data available 2018 based on an average of 2015-2017

Appendix D

Emission Summary Tables

Pollutants		2018 Emission Quantities (Tons/Day)										
		NY/NJ/CT Non-Attainment Area				Greater CT Non-Attainment Area						Statewide
ID	Name	Fairfield	Middlesex	New Haven	***Subtotal***	Hartford	Litchfield	New London	Tolland	Windham	***Subtotal***	
1	Hydrocarbons	7.8429	1.6358	7.0339	**16.5127**	7.8208	1.7419	2.5621	1.4183	1.2897	**14.8328**	**31.3455**
3	Nox	10.8518	2.4853	10.4053	**23.7424**	11.3999	1.8162	3.9036	2.2179	1.8427	**21.1802**	**44.9226**
79	NM Hydrocarbons	7.4463	1.5435	6.6463	**15.6361**	7.4085	1.6828	2.4178	1.3315	1.2249	**14.0655**	**29.7016**
87	VOC	7.9078	1.6403	7.0660	**16.6142**	7.8747	1.7877	2.5727	1.4197	1.3028	**14.9575**	**31.5717**

Pollutants		2025 Emission Quantities (Tons/Day)										
		NY/NJ/CT Non-Attainment Area				Greater CT Non-Attainment Area						Statewide
ID	Name	Fairfield	Middlesex	New Haven	***Subtotal***	Hartford	Litchfield	New London	Tolland	Windham	***Subtotal***	
1	Hydrocarbons	5.9434	1.2084	5.3267	**12.4785**	6.0399	1.2773	1.8854	1.0503	0.9844	**11.2373**	**23.7158**
3	Nox	6.3261	1.4598	6.1517	**13.9376**	6.8527	1.0129	2.2877	1.3191	1.0594	**12.5318**	**26.4694**
79	NM Hydrocarbons	5.5579	1.1174	4.9398	**11.6151**	5.6226	1.2263	1.7426	0.9619	0.9207	**10.4741**	**22.0892**
87	VOC	5.9232	1.1920	5.2723	**12.3875**	5.9986	1.3059	1.8615	1.0302	0.9830	**11.1791**	**23.5666**

Pollutants		2035 Emission Quantities (Tons/Day)										
		NY/NJ/CT Non-Attainment Area				Greater CT Non-Attainment Area						Statewide
ID	Name	Fairfield	Middlesex	New Haven	***Subtotal***	Hartford	Litchfield	New London	Tolland	Windham	***Subtotal***	
1	Hydrocarbons	3.4633	0.7223	3.2878	**7.4734**	3.5915	0.7110	1.1078	0.6373	0.6107	**6.6583**	**14.1317**
3	Nox	3.7052	0.8875	3.8597	**8.4524**	4.0978	0.5244	1.4034	0.8571	0.6426	**7.5253**	**15.9776**
79	NM Hydrocarbons	3.1410	0.6437	2.9414	**6.7261**	3.2356	0.6744	0.9839	0.5578	0.5552	**6.0070**	**12.7331**
87	VOC	3.3891	0.6963	3.1804	**7.2658**	3.4938	0.7251	1.0655	0.6063	0.5999	**6.4905**	**13.7564**

Pollutants		2045 Emission Quantities (Tons/Day)										
		NY/NJ/CT Non-Attainment Area				Greater CT Non-Attainment Area						Statewide
ID	Name	Fairfield	Middlesex	New Haven	***Subtotal***	Hartford	Litchfield	New London	Tolland	Windham	***Subtotal***	
1	Hydrocarbons	3.0452	0.6457	2.9196	**6.6104**	3.1976	0.6161	0.9849	0.5754	0.5492	**5.9231**	**12.5336**
3	Nox	3.4243	0.8293	3.6006	**7.8542**	3.8143	0.4667	1.3158	0.8148	0.6011	**7.0127**	**14.8669**
79	NM Hydrocarbons	2.7335	0.5685	2.5800	**5.8820**	2.8486	0.5817	0.8632	0.4964	0.4945	**5.2844**	**11.1664**
87	VOC	2.9732	0.6201	2.8127	**6.4059**	3.1007	0.6298	0.9426	0.5441	0.5383	**5.7556**	**12.1615**

County	Total Energy Consumption 91 (Joules/Day)	2018 Pollutant Emission Quantities (Tons/Day)				
		NOx	PM 2.5			
		3 Oxides of Nitrogen	110 Engine Exhaust	116 Brakewear	117 Tirewear	**County Total**
Fairfield	4.4265E+16	3994.21623	123.36123	29.34219565	11.80939687	**164.51282**
New Haven	4.15247E+16	3843.30617	117.79660	24.81758188	10.98438051	**153.59856**
Totals	**8.57898E+16**	**7837.52240**	**241.15783**	**54.15978**	**22.79378**	**318.11139**

County	Total Energy Consumption 91 (Joules/Day)	2025 Pollutant Emission Quantities (Tons/Day)				
		NOx	PM 2.5			
		3 Oxides of Nitrogen	110 Engine Exhaust	116 Brakewear	117 Tirewear	**County Total**
Fairfield	3.88056E+16	2388.69194	71.22119	31.93961191	12.55215974	**115.71296**
New Haven	3.6392E+16	2319.18481	67.15783	27.0412736	11.6731486	**105.87225**
Totals	**7.51976E+16**	**4707.87675**	**138.37902**	**58.98089**	**24.22531**	**221.58521**

County	Total Energy Consumption 91 (Joules/Day)	2035 Pollutant Emission Quantities (Tons/Day)				
		NOx	PM 2.5			
		3 Oxides of Nitrogen	110 Engine Exhaust	116 Brakewear	117 Tirewear	**County Total**
Fairfield	3.27937E+16	1471.09154	39.64026	33.73769155	13.0972526	**86.47520**
New Haven	3.21317E+16	1516.28868	38.81126	31.18423878	12.6882525	**82.68376**
Totals	**6.49254E+16**	**2987.38022**	**78.45152**	**64.92193**	**25.78551**	**169.15896**

County	Total Energy Consumption 91 (Joules/Day)	2045 Pollutant Emission Quantities (Tons/Day)				
		NOx	PM 2.5			
		3 Oxides of Nitrogen	110 Engine Exhaust	116 Brakewear	117 Tirewear	**County Total**
Fairfield	3.19346E+16	1376.02777	30.88100	32.74441427	13.13581643	**76.76123**
New Haven	3.15232E+16	1427.50157	30.55733	32.18442155	12.9399948	**75.68175**
Totals	**6.34578E+16**	**2803.52935**	**61.43833**	**64.92884**	**26.07581**	**152.44298**

Appendix E

Public Comments

Appendix 2

Appendix 1 Chapter 7 New and Emerging Technologies

CTDOT is developing a Traffic Signal Management Plan to be completed in 2019 and a Strategic Plan for Implementing CVs/AVs in Connecticut, which will be used to highlight the current status of CV/AV technologies and their high-level impacts, and justify next step strategies, investments and partnerships. The plan outlines CV/AV interests and needs by bureau/office, identifies Connecticut's mission, vision, goals and objectives, presents an internal organizational structure for the implementation of CV/AV in the state, and provides an action plan with roles and responsibilities separated into four time frames (immediate, near term, mid-term and long term). The plan is scheduled to be published in fall 2018. CTDOT is also looking to update their existing Statewide ITS Architecture to include CV/AV applications. They have programmed approximately $2.5 million for CV/AV projects in the Capital Program for 2019 (pending approval).

Appendix 3

Compendium of
CRCOG Memoranda on
Federal Performance Measures

Compiled December 3, 2018
for **Initial Performance Period of 2018-2022**

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FHWA Goal	*Performance Area*	*Performance Measure*	*Initial Targets / Due Dates*
Safety (PM1)	Injuries & Fatalities	• Number of fatalities • Fatality rate (per 100 million vehicle miles traveled) • Number of serious injuries • Serious injury rate (per 100 million vehicle miles traveled) • Number of non-motorized fatalities and non-motorized serious injuries	State & MPO: 257 or less[1] State & MPO: 0.823 or less[1] State & MPO: 1,571 or less[1] State & MPO: 5.03 or less[1] State & MPO: 280 or less[1]
structure Condition (PM2)	Pavement Condition	• Percentage of pavements on the Interstate System in Good condition • Percentage of pavements on the Interstate System in Poor condition • Percentage of pavements on the non-Interstate NHS in Good condition • Percentage of pavements on the non-Interstate NHS in Poor condition	State Targets for 2020 & 2022: See drop down on left side of webpage MPO Target Due Date: 11/16/2018[2]
	Bridge Condition	• Percentage of NHS bridges classified as in Good condition • Percentage of NHS bridges classified as in Poor condition	
Performance of the NHS, Freight, and CMAQ Measures (PM3)	Performance of the National Highway System	• Percent of person miles traveled on the Interstate System that are reliable • Percent of person miles traveled on the non-Interstate NHS that are reliable	State Targets for 2020 & 2022: See drop down on left side of webpage MPO Target Due Date: 11/16/2018[2]
	Freight Movement /Economic Vitality	• Truck Travel Time Reliability Index	
	Congestion Reduction	• Annual hours of peak-hour excessive delay per capita • Percent of non-single-occupant vehicle travel	
	Environmental Sustainability	• On-Road Mobile Source Emissions reduction	
FTA Goal	***Performance Area***	***Performance Measure***	***Initial Targets/ Due Dates***
Transportation Asset Management	Rolling Stock	• Percentage of revenue vehicles (by type) that exceed the Useful Life Benchmark (ULB)	State & MPO: 0%[3], 7%[4], 14%[5], 17%[6]
	Equipment	• Percentage of non-revenue service vehicles (by type) that exceed the ULB	State & MPO: 0%[7], 7%[8], 17%[9], 20%[10]
	Facilities	• Percentage of facilities (by group) that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale	State & MPO: 0%
	Infrastructure	• Percentage of track segments (rail fixed-guideway only) that have performance restrictions	State & MPO: 2%
Safety	Fatalities	• Total number reportable fatalities and rate per total vehicle revenue miles by mode	State Target Due Date: TBD MPO Target Due Date: TBD[2]
	Injuries	• Total number reportable injuries and rate per total vehicle revenue miles by mode	
	Safety Events	• Total number reportable events and rate per total vehicle revenue miles by mode	
	System Reliability	• Mean distance between major mechanical failures by mode	

[1] *5 year moving average (2011-2015) for 2018 Safety Targets.*
[2] *Maximum 180 days after the State sets target*
[3] *FY2018 target for Tier I and II Commuter Rail Locomotive, Commuter Rail Passenger Coaches, Commuter Self-Propelled Passenger Cars, and Ferry Boat*
[4] *FY2018 target for Tier II Trolley*
[5] *FY2018 target for Tier I and II Articulated Bus, Bus and BR Over-the-Road Bus*
[6] *FY2018 target for Tier I Cutaway Bus and Minivan*
[7] *FY2018 target for Tier I Steel Wheel Vehicles*
[8] *FY2018 target for Tier I and II Rubber and Tire Vehicles*
[9] *FY2018 target for Tier II Van and Minivan*
[10] *FY2018 target for Tier I and II Automobiles and Sport Utility Vehicles*

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Part 1:

CRCOG Policy Board Resolutions for CTDOT Performance Targets

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AUTHORIZING RESOLUTION

FOR ENDORSEMENT OF THE STATE OF GOOD REPAIR PERFORMANCE TARGETS SET BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION

WHEREAS, the Federal Transit Administration (FTA) and FTA regulations governing federal transportation assistance prescribe new requirements for Metropolitan Planning Organizations (MPOs) to coordinate with transit providers, set performance targets, and integrate those performance targets and performance plans into their planning documents. As per 23 CFR 450.324 and 23 CFR 450.326, MPOs are required to reference performance targets and performance-based planning into their Transportation Improvement Programs (TIPs) and Metropolitan Transportation Plans by October 2018; and

WHEREAS, FTA established four State of Good Repair (SGR) Performance Measures in asset categories of Rolling Stock, Equipment, Facilities, and Infrastructure. The SGR Performance Targets for these measures were set by the Connecticut Department of Transportation (CTDOT) in coordination with the transit providers, including Metro-North Railroad, CT***transit***, and all the rural and urban Transit Districts to comply with a January 1, 2017 deadline; and

WHEREAS, each MPO is required to establish SGR performance targets for each FTA Performance Measure and for each asset class offered within the metropolitan planning area, as per 23 CFR 450.306 (d)(3), 180 days after the transit providers have set their respective performance targets, or by July 1, 2017; and

WHEREAS, the SGR Performance Measure Targets set by CTDOT have been reviewed by the Policy Board of the Capitol Region Council of Governments and align with regional goals for transit asset management;

NOW THEREFORE BE IT RESOLVED THAT, the Capitol Region Council of Governments does herby endorse the State of Good Repair Performance Measure Targets established by the Connecticut Department of Transportation as the regional performance targets for the MPO.

CERTIFICATE

I certify the above is a true copy of a resolution adopted by the Transportation Committee, acting on behalf of the Policy Board, at its meeting held on June 26, 2017.

BY: _____ DATE: 7/5/17

Lisa Heavner, CRCOG Secretary

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RESOLUTION REGARDING TARGETS FOR SAFETY PERFORMANCE MEASURES ESTABLISHED BY CTDOT

WHEREAS, the Capitol Region Council of Governments (CRCOG) has been designated by the Governor of the State of Connecticut as the Metropolitan Planning Organization responsible, together with the State, for the comprehensive, continuing, and cooperative transportation planning process for the Capitol Region; and

WHEREAS, the Highway Safety Improvement Program (HSIP) final rule (23 CFR Part 490) requires States to set targets for five safety performance measures by August 31, 2017, and

WHEREAS, the Connecticut Department of Transportation (CTDOT) has established targets for five performance measures based on five year rolling averages for:
(1) Number of Fatalities,
(2) Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT),
(3) Number of Serious Injuries,
(4) Rate of Serious Injuries per 100 million VMT, and
(5) Number of Non-Motorized Fatalities and Non-motorized Serious Injuries, and

WHEREAS, the CTDOT generally discussed safety performance measures with the 8 Metropolitan Planning Organizations (MPOs) in Connecticut at the February 22, 2017 Safety Target Setting Coordination and Training Workshop; and at the December 2016 and the April 2017 RPO Coordination meetings, and

WHEREAS, the CTDOT has officially adopted the safety targets in the Highway Safety Improvement Program annual report dated August 28, 2017, and the Highway Safety Plan dated June 2017, and

WHEREAS, the CRCOG may establish safety targets by agreeing to plan and program projects that contribute toward the accomplishment of the aforementioned State's targets, or establish its own target within 180 days of the State establishing and reporting its safety targets,

NOW THEREFORE, BE IT RESOLVED, that the MPO Policy Board has agreed to support CTDOT's 2018 targets for the five safety performance targets as attached herein, and

BE IT FURTHER RESOLVED, that the MPO Policy Board will plan and program projects that contribute to the accomplishment of said targets.

CERTIFICATE: The undersigned duly qualified CRCOG Board Member certifies that the foregoing is a true and correct copy of a resolution adopted by the voting members of the CRCOG on December 13, 2017.

Marcia LeClerc
Capitol Region Council of Governments

12/13/17
Date

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RESOLUTION REGARDING TARGETS FOR TEN PERFORMANCE MEASURES ESTABLISHED BY CTDOT

WHEREAS, the Capitol Region Council of Governments (CRCOG) has been designated by the Governor of the State of Connecticut as the Metropolitan Planning Organization responsible, together with the State, for the comprehensive, continuing, and cooperative transportation planning process for the Capitol Region; and

WHEREAS, the National Performance Management Measures final rule (23 CFR Part 490) requires States to set targets for ten performance measures by May 20, 2018, and

WHEREAS, the Connecticut Department of Transportation (CTDOT) has established targets for four pavement performance measures for:
(1) Percentage of Pavements on the Interstate System in Good condition,
(2) Percentage of Pavements on the Interstate System in Poor condition,
(3) Percentage of Pavements on the non-Interstate NHS in Good condition,
(4) Percentage of Pavements on the non-Interstate NHS in Poor condition,
(5) Percentage of NHS Bridges classified as in Good Condition (by deck area),
(6) Percentage of NHS Bridges classified as in Poor Condition (by deck area),
(7) Percentage of Person-miles traveled on the Interstate System that are reliable,
(8) Percentage of Person-miles traveled on the non-Interstate System that are reliable,
(9) Truck Travel Time Reliability Index,
(10) Total Emissions Reduction,

WHEREAS, the CTDOT generally discussed performance measures with the 8 Metropolitan Planning Organizations (MPOs) in Connecticut at the March 27 and May 8 RPO coordination meetings as well as on other occasions during the course of this new Federal mandate,

WHEREAS, the CTDOT has officially adopted the ten targets in the State Long Range Transportation Plan in March 2018,

WHEREAS, the CRCOG may establish performance targets by agreeing to plan and program projects that contribute toward the accomplishment of the aforementioned State's targets, or establish its own target within 180 days of the State establishing and reporting its performance targets,

NOW THEREFORE, BE IT RESOLVED, that the MPO Policy Board has agreed to support CTDOT's 2018 targets for the ten performance targets as previously discussed and endorsed, and

BE IT FURTHER RESOLVED, that the MPO Policy Board will plan and program projects that contribute to the accomplishment of said targets.

CERTIFICATE: The undersigned duly qualified CRCOG Board Member certifies that the foregoing is a true and correct copy of a resolution adopted by the voting members of the CRCOG on October 24, 2018.

Lori L. Spielman, Secretary
Capitol Region Council of Governments

10-24-18
Date

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Part 2:

Background to FHWA Performance Measures and Targets

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To: Transportation Committee

From: Rob Aloise, Principal Transportation Engineer
Jennifer Carrier, Director of Transportation Planning

Date: March 19, 2018

Subject: Transportation Performance Measures and Target Setting

This memorandum provides an update on CTDOT and CRCOG's efforts in complying with federally required Transportation Performance Measures and Target Setting. The attached table summarizes each of the FHWA and FTA performance measures. The table was previously provided to the committee in September 2017, however it's status column has been updated to apprise the committee of the latest for the following measures:

- FHWA - Safety (PM1)
- FHWA - Infrastructure Condition (PM2)
- FHWA - Performance of the NHS, Freight, and CMAQ Measures (PM3)

Background

MAP-21 and the FAST Act legislation required US-DOT to establish transportation performance measures, and required States and Regions to set performance targets for those measures. The Federal Transit and Federal Highway Administrations have established a performance management framework through a series of federal rulemakings, each of which contains requirements and deadlines for transit providers, Metropolitan Planning Organizations (MPOs), and state DOTs. The attached table identifies the specific performance measures and dates that initial targets are to be set by CTDOT and the MPOs. Following each State established target, MPOs will have up to 180 days either to confirm that target, or set their own for the region. It's required that these measures be regularly monitored and reported with new targets typically set in 2 or 4 year timeframes.

CRCOG staff will be monitoring and coordinating with CTDOT regarding complying with all federal performance measure mandates. This will include reviewing state targets and providing recommendations to the Transportation Committee regarding the appropriate targets for the region. It is anticipated that staff will be seeking Transportation Committee and Policy Board approvals of motions to set each regional target. Penalties for non-compliance are stiff, with the possibility of a reduction of participating federal transportation funding levels. There are also consequences for not meeting identified performance targets, which could result in a loss of flexibility in how federal funds are programmed.

FHWA Goal	***Initial Target Due Dates***	***Performance Area***	***Performance Measure***	***Status***
Safety (PM1)	State: 8/31/2017 MPO: 2/27/2018	Injuries & Fatalities	• Number of fatalities • Fatality rate (per 100 million vehicle miles traveled) • Number of serious injuries • Serious injury rate (per 100 million vehicle miles traveled) • Number of non-motorized fatalities and non- motorized serious injuries	*On December 13, 2017, CRCOG's Policy Board endorsed CTDOT's 2018 Safety Performance Targets as the regional performance targets for the MPO*
Infrastructure Condition (PM2)	State: 5/20/2018 MPO: 11/16/2018*	Pavement Condition	• Percentage of pavements on the Interstate System in Good condition • Percentage of pavements on the Interstate System in Poor condition • Percentage of pavements on the non-Interstate NHS in Good condition • Percentage of pavements on the non-Interstate NHS in Poor condition	*CTDOT is evaluating Pavement and Bridge Conditions and will be updating the regions regarding data-set and target setting progress on March 27, 2018*
		Bridge Condition	• Percentage of NHS bridges classified as in Good condition • Percentage of NHS bridges classified as in Poor condition	
Performance of the NHS, Freight, and CMAQ Measures (PM3)	State: 5/20/2018 MPO: 11/16/2018*	Performance of the National Highway System (NHS)	• Percent of person miles traveled on the Interstate System that are reliable • Percent of person miles traveled on the non-Interstate NHS that are reliable	*CRCOG has calculated historical metric results for Performance of the NHS and Freight Movement/ Economic Vitality and has attended a February 27th technical meeting with CTDOT to discuss. CRCOG has begun analysis of historical Congestion Reduction and Environmental Sustainability data.*
		Freight Movement /Economic Vitality	• Truck Travel Time Reliability (TTTR) Index	
		Congestion Reduction	• Annual hours of peak-hour excessive delay per capita • Percent of non-single-occupant vehicle travel	
		Environmental Sustainability	• On-Road Mobile Source Emissions reduction	
FTA Goal	***Initial Target Due Dates***	***Performance Area***	***Performance Measure***	***Status***
Transportation Asset Management	State: 1/1/2017 MPO: 6/30/2017	Rolling Stock	• Percentage of revenue vehicles (by type) that exceed the Useful Life Benchmark (ULB)	*On June 26, 2017, CRCOG's Transportation Committee (acting on behalf of the Policy Board) endorsed CTDOT's State of Good Repair Performance Targets as the regional performance targets for the MPO*
		Equipment	• Percentage of non-revenue service vehicles (by type) that exceed the ULB	
		Facilities	• Percentage of facilities (by group) that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale	
		Infrastructure	• Percentage of track segments (rail fixed-guideway only) that have performance restrictions	
Safety	State: TBD MPO: TBD*	Fatalities	• Total number reportable fatalities and rate per total vehicle revenue miles by mode	*States and MPOs are awaiting final federal rulemaking on this measure including finalized target due dates*
		Injuries	• Total number reportable injuries and rate per total vehicle revenue miles by mode	
		Safety Events	• Total number reportable events and rate per total vehicle revenue miles by mode	
		System Reliability	• Mean distance between major mechanical failures by mode	

* Maximum 180 days after the State sets target

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To: Transportation Committee

From: Jennifer Carrier, Director of Transportation Planning
Rob Aloise, Principal Transportation Engineer

Date: May 15, 2018

Subject: Transportation Performance Measures and Target Setting

This memorandum provides an update on the Connecticut Department of Transportation's (CTDOT) efforts to comply with federally required Transportation Performance Measures and Target Setting. As a reminder, CTDOT must set 2-year and 4-year targets by May 20, 2018 for ten (10) FHWA performance measures covering 5 general areas, summarized below. After CTDOT establishes targets, CRCOG has 180 days (until November 16, 2018) to either adopt/support each CTDOT target, or set our own.

- Pavement Conditions
- Bridge Conditions
- Performance of the National Highway System (NHS)
- Performance of Freight
- CMAQ Program – On-Road Mobile Source Emissions

Performance targets for highway safety and transit asset management have already been established by our region. Performance targets for congestion reduction do not need to be set until November 2022 and we are awaiting federal guidance and final rule-making for transit safety performance targets.

Background

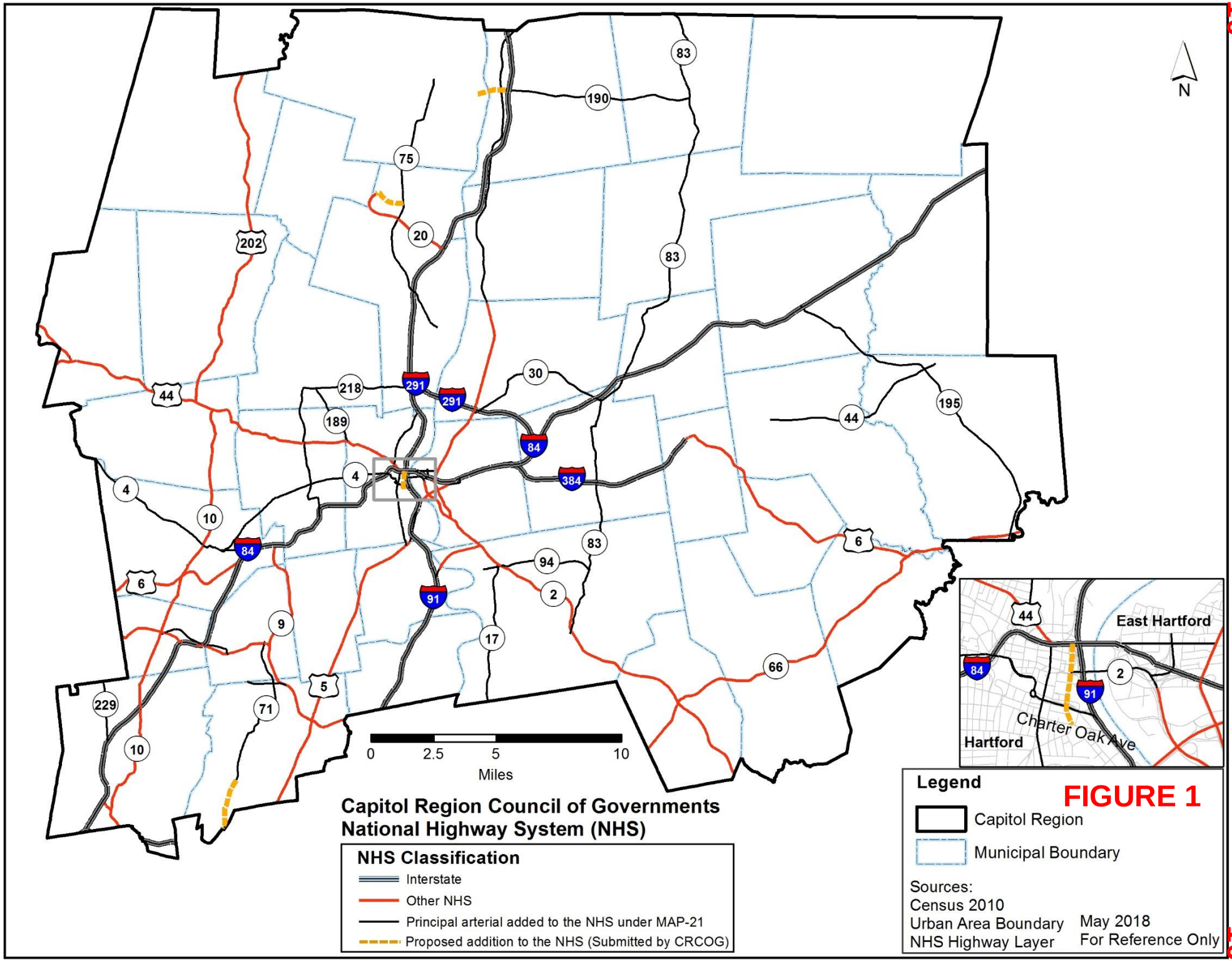
CTDOT met with the regions on May 8th to discuss their methodology for developing specific performance targets. The attached sheets summarize each performance area along with CTDOT's targets. This information should assist us in framing the discussion in our region as we work to understand and establish targets.

One item to specifically note, federal guidance focuses the performance measures on the National Highway System (NHS) which consists of a network of strategic highways, including interstates and other roads that serve major airports, rail or truck terminals, and other strategic transport facilities. The specific NHS roadways within our region are illustrated in Figure 1.

Next Steps

There are a number of complicated components to consider when establishing performance targets however it is an important assignment and opportunity for our region. CRCOG staff recommends the following next steps, in an effort to meet the upcoming November regional deadline and more transparently link transportation funding with performance goals. We would be interested in discussing this in more detail at the May 21st Transportation Committee meeting.

- Establish a performance measures working group to discuss these measures and targets in more detail
- Begin to outline goals and objectives for each performance area, linking them back to the Long Range Transportation Plan (LRTP), which will be updated in the coming months.
- Begin to outline projects in CRCOG's Transportation Improvement Program (TIP) that fit within each performance area, ensuring projects are advanced
- Begin to outline new initiatives and projects that work to address performance
- Regularly coordinate with CTDOT given their management of the NHS within our region (e.g. ensure we receive updates as it relates to pavement and bridge conditions and investments within our region)


N
0
2.5
5
10
Miles
East Hartford
Hartford
Charter Oak Ave
Capitol Region Council of Governments
National Highway System (NHS)
NHS Classification
Interstate
Other NHS
Principal arterial added to the NHS under MAP-21
Proposed addition to the NHS (Submitted by CRCOG)
Legend
Capitol Region
Municipal Boundary
Sources:
Census 2010
Urban Area Boundary
NHS Highway Layer
May 2018
For Reference Only
FIGURE 1

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Pavement Conditions

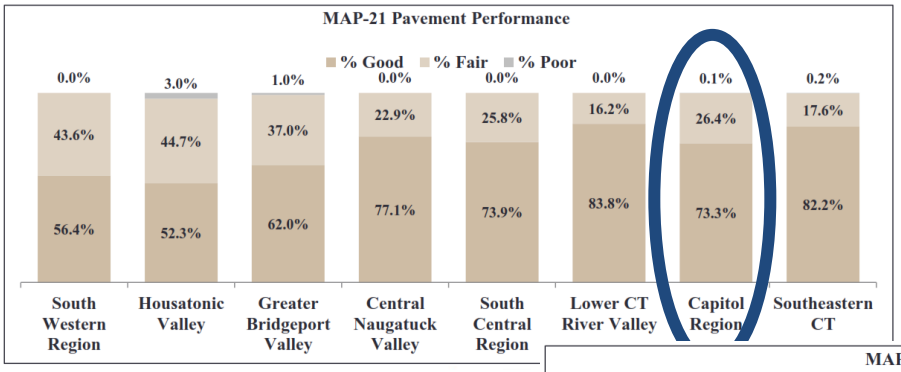
The four performance measures include:

- Percentage of Pavements on the Interstate System in Good condition
- Percentage of Pavements on the Interstate System in Poor condition
- Percentage of Pavements on the non-Interstate NHS in Good condition
- Percentage of Pavements on the non-Interstate NHS in Poor condition

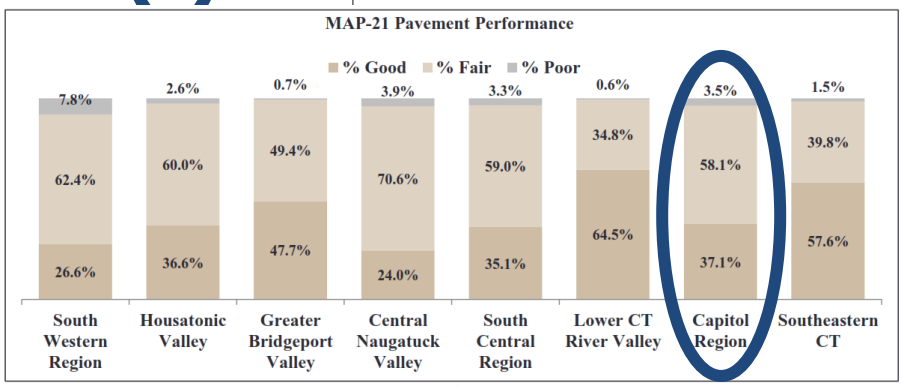
To understand these measures it is important to have the following background:

- CTDOT uses dTIMs, developed by Deighton Associates, as their asset management system. The program encompasses strategic planning components with maintenance, operations and capital investment decision-making aspects.
- CTDOT's Pavement Management System, consists of three major components: a system to regularly collect highway condition data; a computer database (ROADWARE Vision) to process, sort, and store the collected data, and dTIMS to evaluate repair or preservation strategies and suggest cost-effective projects to maintain highway conditions.
- The below graphics represent pavement conditions within our region, compared to other regions.

Percentage of Pavements on the Interstate System in Good/Poor Condition



Percentage of Pavements on the non-Interstate NHS in Good/Poor Condition



CTDOT's pavement condition performance targets are to the right. The current conditions column reflects what CTDOT provided to the Federal Highway Administration (FHWA) last year in their Highway Performance Monitoring System (HPMS) submittal. HPMS is required of all states and is primarily used when assigning federal highway funding to states.

Pavement Condition Measures

- % of Interstate system in "Good" and "Poor" condition
  - MAX % Poor (Interstates): 5%
- % of National Highway System in "Good" and "Poor" condition

Asset (unit of measure)	Current Condition (HPMS submittal 6/2017)		2-year targets (2020)		4-year targets (2022)	
	Good %	Poor %	Good %	Poor %	Good %	Poor %
Interstate Pavement (lane miles)	66.2	2.2	65.5	2.0 Better	64.4	2.6
Non-Interstate NHS Pavement (lane miles)	37.9	8.6	36.0	6.8 Better	31.9	7.6

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Bridges

The four performance measures include:

- Percentage of NHS Bridges classified as in Good condition
- Percentage of NHS Bridges classified as in Poor condition

To understand these measures it is important to have the following background:

- CTDOT uses dTIMs, developed by Deighton Associates, as their asset management system. The program encompasses strategic planning components with maintenance, operations and capital investment decision-making aspects.
- CTDOT's Bridge Management System starts with the current status of the bridge, accounts for programmed work and adjusts for predicted decay. Major bridges are analyzed individually by engineers and spreadsheets and all other structures are analyzed by dTIMS. Bridge inputs to dTIM include current bridge condition data, deterioration curves, scheduled projects, treatments and costs, budgets, time spans, inflation and discount rates.
- The below graphics represent bridge conditions within our region, compared to other regions.

Percentage of NHS Bridges classified as in Good/Poor condition

MPO	NHS-NBI Bridges (Deck Area - ft²)	Locally Owned NHS-NBI Bridges	FAST Act *National Performance Management Measures*	
			% Good (by deck area)	% Poor or % Structurally Deficient (by deck area)
1 - South Western	2,183,450	0	3.3%	19.1%
2 - Housatonic Valley	920,157	2	22.0%	7.4%
3 - Northwest Hills (RPO)	273,510	0	22.7%	10.0%
5 - Central Naugatuck Valley	1,917,348	1	9.7%	34.2%
7 - Greater Bridgeport Valley	3,765,462	0	24.8%	6.3%
8 - South Central Region	4,014,609	4	42.8%	6.0%
10 - Capitol Region	8,567,699	5	13.6%	15.7%
11 - Lower CT River Valley	1,418,300	2	11.0%	16.2%
13 - Southeastern CT	2,832,830	0	7.4%	23.0%
15 - Northeastern CT (RPO)	377,273	0	15.3%	12.6%
TOTAL	26,270,638	14	18.1%	14.9%

CTDOT's bridge performance targets are summarized to the right. The current conditions column reflects what CTDOT provided to the Federal Highway Administration (FHWA) last year in their Highway Performance Monitoring System (HPMS) submittal. HPMS is required of all states and is primarily used when assigning federal highway funding to states.

Bridge Condition Measures

- % of NHS Bridges in "Good" and "Poor" condition
- Max % poor: 10 (MAP-21)

Asset (unit of measure)	Current Condition (NBI submittal 3/2017)		2-year targets (2020)		4-year targets (2022)	
	Good %	Poor %	Good %	Poor %	Good %	Poor %
NHS Bridge (deck area)	18.1	15.0	22.1 Better	7.9 Better	26.9 Better	5.7 Better

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National Highway System (NHS) Performance

The three performance measures include:

- Percent of person-miles traveled on the Interstate System that are reliable
- Percent of person-miles traveled on the non-Interstate NHS that are reliable
- Annual hours of peak-hour excessive delay per capita (CTDOT will establish in 2022; CRCOG not required to set this target until 2022 given our region is less than 1 million population.)

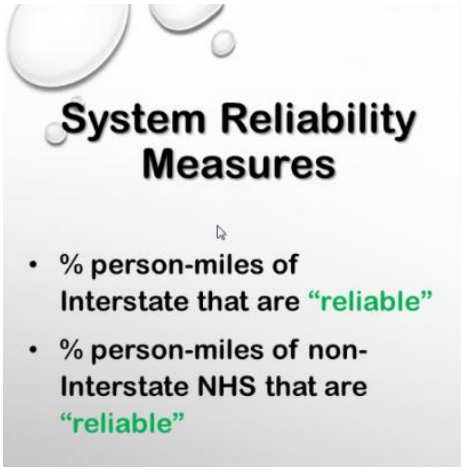
To understand these measures it is important to have the following background:

- Data come from the National Performance Management Research Data Set (NPMRDS), which provides an average travel time in seconds for each segment and 15-minute period
- Reliability is defined as the Level of Travel Time Reliability (LOTTR) and it is a ratio of the longer travel times (defined by 80th percentile) to a normal travel time (defined by the 50th percentile)
- If LOTTR is less than 1.5, it is considered to be reliable
- LOTTR is calculated for each road segment on an annual basis for the AM, Midday, PM, and Weekend time periods, the maximum determines a segment's overall reliability (e.g. AM LOTTR: 1.49, Midday LOTTR: 1.38, PM LOTTR: 1.63, Weekend LOTTR: 1.35, Overall Segment LOTTR = 1.63, and is therefore Unreliable)
- The percentage of reliable person-miles comes from the sum of all "reliable" segments compared to the sum of all segments. Person-miles are a factor of a segment's length, annual traffic volume and occupancy factor (persons per vehicle). CTDOT assumed an occupancy factor of 1.7. (e.g. 1.5 mile segment * 95,000 vehicles *1.7 occupancy factor = 242,250 person-miles for that segment)
- CTDOT used the Mobility Measurement in Urban Transportation (MMUT) pooled fund program based at Texas A&M University to perform data analysis on NPMRDS and prepare the performance targets; CRCOG staff has been using other statistical software (including excel and R software programs) when calculating the same measures
- The below illustrates a general example expanding upon the above:

Segment	AM LOTTR	Midday LOTTR	PM LOTTR	Weekend LOTTR	Overall	Reliability
Segment A	1.49	1.38	**1.63**	1.35	**1.63**	Unreliable
Segment B	1.48	1.35	1.49	1.31	1.49	Reliable

Segment	Length (miles)	Annual Traffic Volume	Occupancy Factor	Person-Miles	Percentage
Segment A (Unreliable)	1.5	95,000	1.7	242,250	50.25%
Segment B (Reliable)	1.7	83,000	1.7	239,870	49.75%
			Total	482,120	100.00%

CTDOT's NHS performance targets for the State of Connecticut are illustrated to the right.



System (unit of measure)	Current Condition	2-year targets (2020)	4-year targets (2022)
	Reliable %	Reliable %	Reliable %
Interstate (person-miles)	78.3	75.2	72.1
		Reliability declines in all cases	
Non-Interstate NHS (person-miles)	83.6	80.0	76.4

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Freight Performance

The freight performance measure includes:

- Truck Travel Time Reliability Index (TTTR)

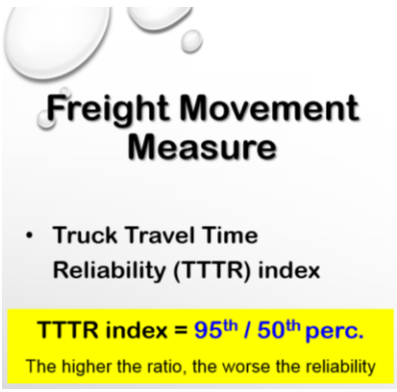
To understand this measures it is important to have the following background:

- Data come from the National Performance Management Research Data Set (NPMRDS), which provides an average travel time in seconds for each segment and 15-minute period
- Reporting is divided into 5 time periods: morning peak (6-10 am); midday (10am – 4 pm) and afternoon peak (4-8 p.m.) Mondays through Fridays; weekends (6 a.m.-8 p.m.); and overnights for all days (8 p.m.-6 a.m.).
- Truck Travel Time Reliability Index (TTTR) is a ratio of the 95th percentile time to the 50th percentile time (also called normal time) for each segment. The TTTR Index is generated by multiplying each segment's largest ratio of the five periods by its length, then dividing the sum of all length-weighted segments by the total length of Interstate.
- CTDOT used the Mobility Measurement in Urban Transportation (MMUT) pooled fund program based at Texas A&M University to perform data analysis on NPMRDS and prepare the performance targets; CRCOG staff has been using other statistical software (including excel and R software programs) when calculating the same measures
- The below illustrates a general example expanding upon the above:

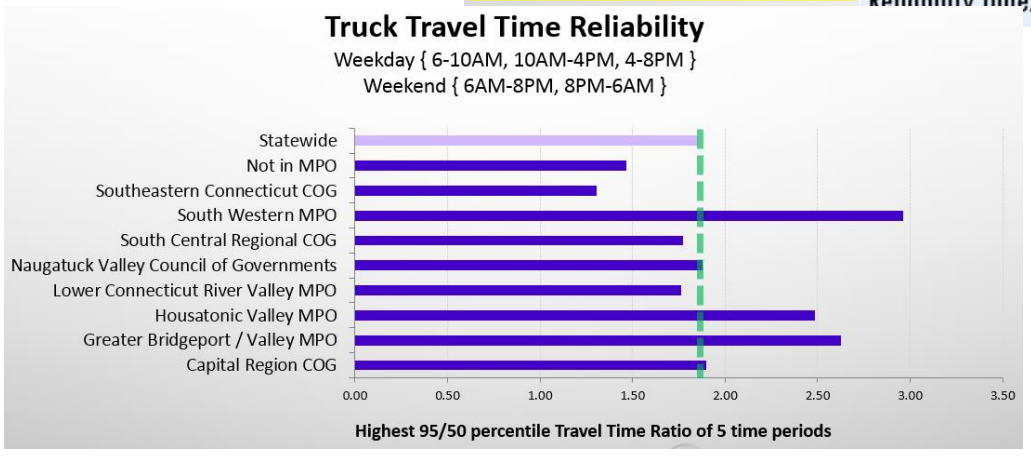
Segment	AM TTTR	Midday TTTR	PM TTTR	Weekend TTTR	Overnight TTTR	Largest TTTR	Segment Length
Segment A	1.8	1.7	1.9	1.4	1.2	1.9	1.5 miles
Segment B	1.9	1.8	2.0	1.5	1.2	2.0	1.3 miles

Segment	Largest TTTR	Segment Length (miles)	Length-Weighted Segment
Segment A	1.9	1.5	2.85
Segment B	2.0	1.3	2.60
	Calculated TTTR	Sum of Segment Lengths	Sum of Length-Weighted Segments
TTTR Index	**1.94**	2.8	5.45

CTDOT's freight performance targets for the State of Connecticut are illustrated to the right and below along with the regional findings. The below graphics represent freight conditions within our region, compared to other regions.



System (unit of measure)	Current Condition	2-year targets (2020)	4-year targets (2022)
	TTTR	TTTR	TTTR
Interstate (Truck Travel Time Reliability Index)	1.75	1.79	1.83
		Reliability gets worse	



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Congestion Mitigation and Air Quality (CMAQ) Program – On-Road Mobile Source Emissions

The CMAQ Program – On-Road Mobile Source Emission measure includes:

- Total Emissions Reduction (kg/day)

To understand these measures it is important to have the following background:

- Emissions components for CMAQ funded projects include Volatile Organic Compounds (VOCs), Nitrogen Oxide (NOx), and Particulate Matter (PM2.5)
- Emissions benefits are counted only on the year funds are first obligated (e.g. When CTfastrak opened in 2015, the emissions reduction was only able to be shown in 2015 per federal guidelines when there were also actual benefits in years following).
- CTDOT has relayed that there is variability in yearly obligations under the CMAQ program and mega-projects have significant impacts on the overall emissions reductions.
- Emissions reduction estimates for each CMAQ funded project by pollutant and precursor are identified here: https://fhwaapps.fhwa.dot.gov/cmaq_pub/

CTDOT's air quality performance targets, denoting anticipated future <u>additional reductions</u> to emissions for the State of Connecticut, are illustrated below.

Air Quality Measure

- **Total Emissions Reduction**
- **From projects entered into the CMAQ Public Access system in previous year**

Emissions Component	Current Measurements (CMAQ Public Access as of 2017)		2-year targets (2020)	4-year targets (2022)
	2-year cumulative kg/day	4-year cumulative kg/day	2-year cumulative kg/day	4-year cumulative kg/day
VOC	10.820	263.890	19.320	30.140
NOx	34.680	462.490	67.690	102.370
PM2.5	1.040	12.950	1.632	2.674

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Part 3:
FHWA Performance Measures and Targets

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To: Transportation Committee

From: Jennifer Carrier, Director of Transportation Planning
Jillian Massey, Senior Transportation Planner

Date: November 3, 2017

Subject: Safety Performance Measures

It has recently been brought to CRCOG's attention that CTDOT has established targets for safety performance measures. They were included in the Highway Safety Plan (HSP) sent by CTDOT to the National Highway Traffic Safety Administration (NHSTA) (approved on August 18, 2017) and the Highway Safety Improvement Program (HSIP) annual report sent by CTDOT to FHWA (approved on September 26, 2017). The purpose of this memo is to begin the conversation of safety performance measures with the Committee and to begin working toward endorsing targets with our Metropolitan Planning Organization (MPO).

Federal Regulations

Federal regulations (23 CFR 490.207 (a) (National performance management measures for the Highway Safety Improvement Program) state that MPOs shall establish performance targets for each of the measures identified in the HSIP by **February 27, 2018**. CRCOG's Policy Board acts as the MPO for the Hartford Urbanized Area, and is advised by the Transportation Committee. The five (5) safety performance measures that MPOs are required to set targets for include:

- Number of Fatalities
- Rate of Fatalities (per 100 million VMT)
- Number of Serious Injuries
- Rate of Serious Injuries (per 100 million VMT)
- Number of Non-motorized Fatalities plus Serious Injuries

To provide MPOs with flexibility, federal regulations allow MPOs to support the State targets or establish their own targets. CRCOG will be required to integrate safety goals, objectives, performance measures and targets into the transportation planning process. We will, in our Long Range Transportation Plan, have to identify the anticipated effect of the TIP toward achieving targets and link investment priorities in the TIP to those safety targets. Consequences for not meeting identified performance targets could result in a loss of flexibility in how federal funds are programmed.

CTDOT Safety Targets

CTDOT safety targets were issued to NHTSA and FHWA without being vetted with the Regional Planning Organizations (RPOs). CTDOT has acknowledged this disconnect and has agreed to better coordinate with the RPOs for the 2019 target setting exercise. The following identifies the five (5) safety performance measures. CTDOT's targets are based on a 5-year rolling average. Also included are segments from the HSP and HSIP in Attachments A through E.

- To maintain the five year (2011-2015) moving average of 257 Fatalities during the five year (2014-2018) period.

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- To maintain the Fatality rate per 100 M VMT from the five year (2011-2015) moving average of .823 during the five year (2014-2018) period.
- To maintain the five year (2011-2015) moving average of 1,571 Serious (A) Injuries during the five year (2014-2018) period.
- To maintain the five year (2011-2015) moving average of 5.03 Serious (A) Injuries per 100M VMT during the five year (2014-2018) period.
- To maintain the five year moving average of 280 Non-motorized Fatalities and Serious Injuries.

CRCOG Safety Targets

CRCOG reviewed national and regional trends in safety data. Approximately 30% of fatalities and 22% of serious injuries in the last 5 years in Connecticut have occurred in the Capitol Region. Crashes associated with distracted and impaired (under the influence of alcohol or drugs) driving within our region have been on the increase since 2015. The number of distracted driving related crashes increased from 9,392 in 2015 to 10,924 in 2016 and the number of impaired driving related crashes increased from 883 in 2015 to 937 in 2016. Furthermore, fatalities have been on the rise (about 6%) nationally since 2015.

CTDOT is encouraging CRCOG to support the targets set by the CTDOT, as most MPOs in the country are doing for this first year of performance measure target setting. Should we decide to support and endorse the CTDOT's targets, the Unified Planning Work Program (UPWP) will need to be amended to outline roles and responsibilities for the Department and the MPO with regards to performance measures. If we elect to establish our own targets they would apply to all public roads in the region and we would need to estimate vehicle miles traveled (VMT) for all of these roads.

As we begin to review the material and consider safety performance targets we may want to consider the following:

- Fatalities and serious accidents are on the rise and our state's small geography may support CRCOG adopting CTDOT's targets for this first year. CTDOT's targets "maintain" 5-year averages which are good assumptions given crashes are on the rise. CRCOG can work in the coming year to assess what other regions are doing nationally and get a better handle on VMTs within the region (this incorporates understanding daily traffic on all public roads).
- CRCOG will be advancing a regional safety plan in the next couple of years (a joint effort with DOT and the regions). This regional plan can help us pinpoint safety patterns and areas of concerns.
- If we adopt CTDOT targets we may want to request CTDOT coordinate quarterly meetings with Regional Planning Organizations to collaborate on safety efforts and reaching targets.
- Continuing to work closely and collaborate with the Safety Circuit Rider program to address safety on local roads and understand best practices as it relates to safety projects.
- Consider amending our rating criteria or funding set-aside amounts on certain funding programs (e.g. LOTCIP, TA Set-Aside) to support projects that address safety.

We would be interested in your opinions in the coming months. Feel free to contact either of us if you have any comments or concerns: jcarrier@crcog.org or jmassey@crcog.org.

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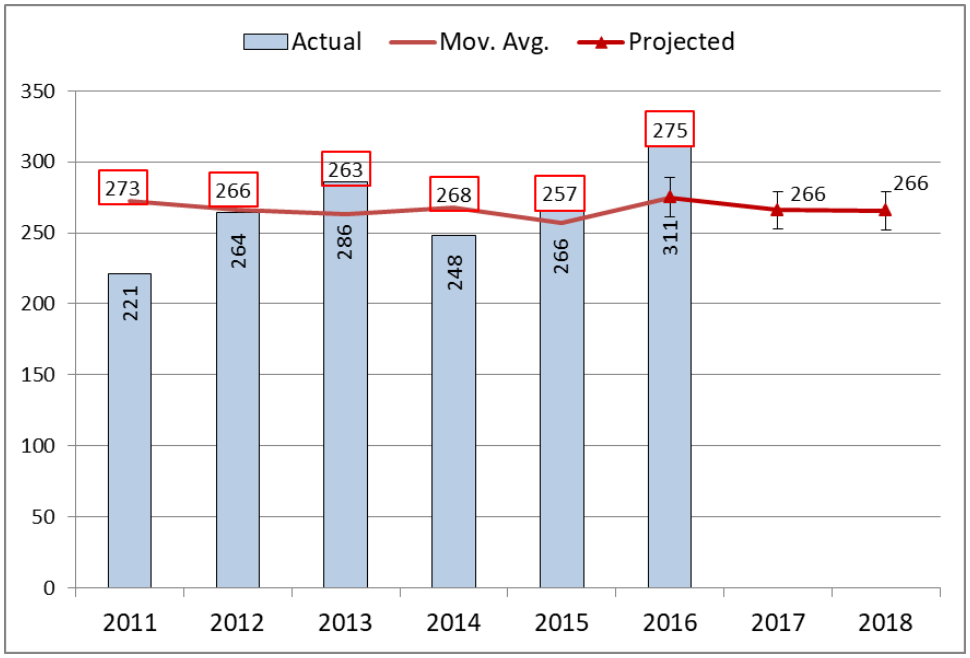
Fatalities 2011-2016



Source: FARS Final 2015/Connecticut Department of Transportation 2016 Crash File

To maintain the five year (2011-2015) moving average of 257 Fatalities during the five year (2014-2018) period.

- While fatality figures have fluctuated during the five year reporting period, the five year moving average and trend has continued to decrease for the 2011-2015 baseline period.
- Although the five year moving average decreased during the 2011-2015 baseline period, preliminary 2016 data show the fatality total of 311 and the five year moving average of 275 to represent an increase in the five year moving average.
- 2017 data show current fatality trends to keep pace with 2016 for the year to date.
- For this reason, the fatality trend is expected to increase during the planning period. Collaboration with SHSP targets has led to the choice to maintain the current five year moving average.

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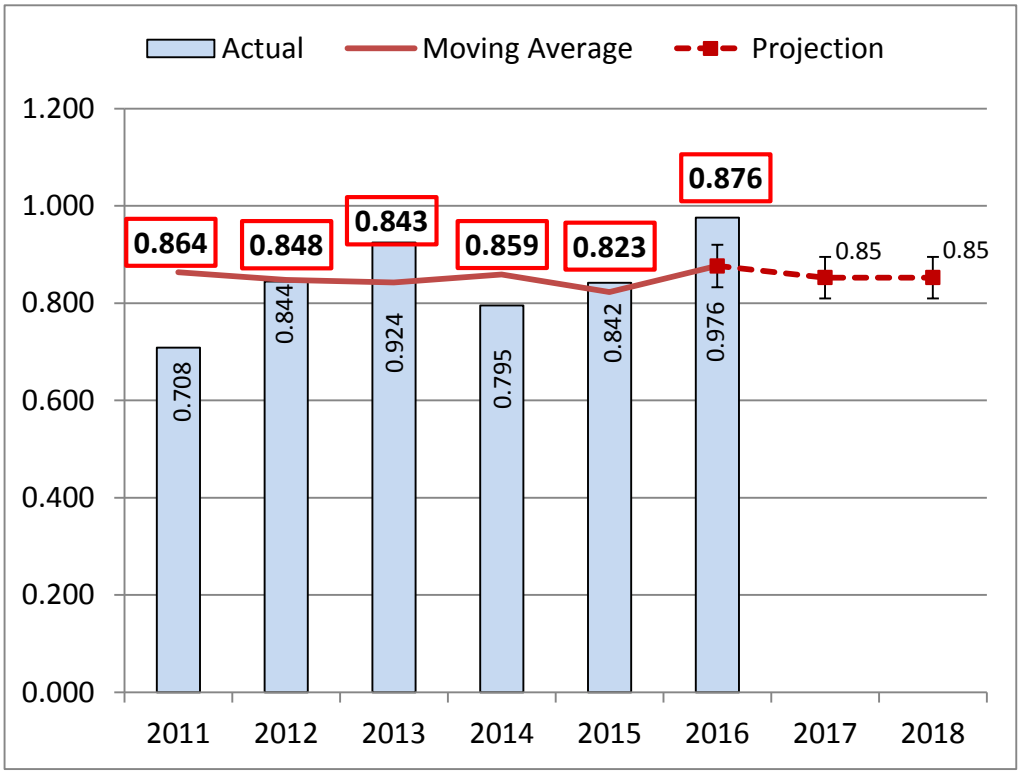
Fatality Rate per 100 M VMT 2011-2016



Source: FARS final files 2011-2014, Annual Report File 2015, CT Crash Data Repository 2016

To maintain the Fatality rate per 100 M VMT from the five year (2011-2015) moving average of .823 during the five year (2014-2018) period.

- The five year moving average decreased from .864 (2007-2011) to .823 during the 2011-2015 baseline period.
- Although the five year moving average decreased during the 2011-2015 baseline period, preliminary 2016 data show the fatality total of 311 and the five year moving average of 275 to represent an increase in the five year moving average.
- 2017 data show current fatality trends to keep pace with 2016 for the year to date.
- Although 2016 VMT data was not available at the time of publishing (projected VMT was used in the 2016 figure in this graph),
- Based on the anticipated increase in fatalities in 2016 and 2017, the Fatality rate per 100M VMT trend is expected to increase during the planning period. Collaboration with SHSP targets has led to the choice to maintain the current five year moving average.

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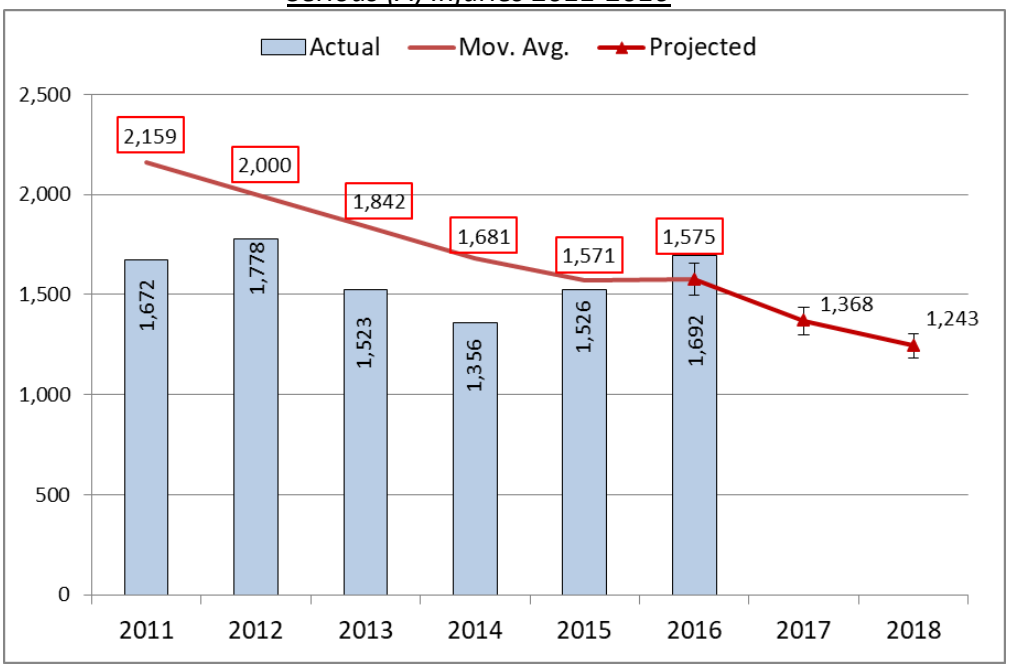
Serious (A) Injuries 2011-2016



Source: FARS final files 2011-2014, Annual Report File 2015, CT Crash Data Repository 2016

To maintain the five year (2011-2015) moving average of 1,571 Serious (A) Injuries during the five year (2014-2018) period.

- While Serious (A) Injuries have fluctuated during the five year reporting period, the five year moving average and trend has continued to decrease for the 2011-2015 baseline period.
- Although the five year moving average decreased during the 2011-2015 baseline period, preliminary 2016 data show the Serious (A) Injury total of 1,692 and the five year moving average of 1,575 to represent an increase in the five year moving average.
- Serious Injury totals have increased for consecutive years, for this reason, the Serious (A) Injury trend is expected to increase during the planning period. Collaboration with SHSP targets has led to the choice to maintain the current five year moving average.

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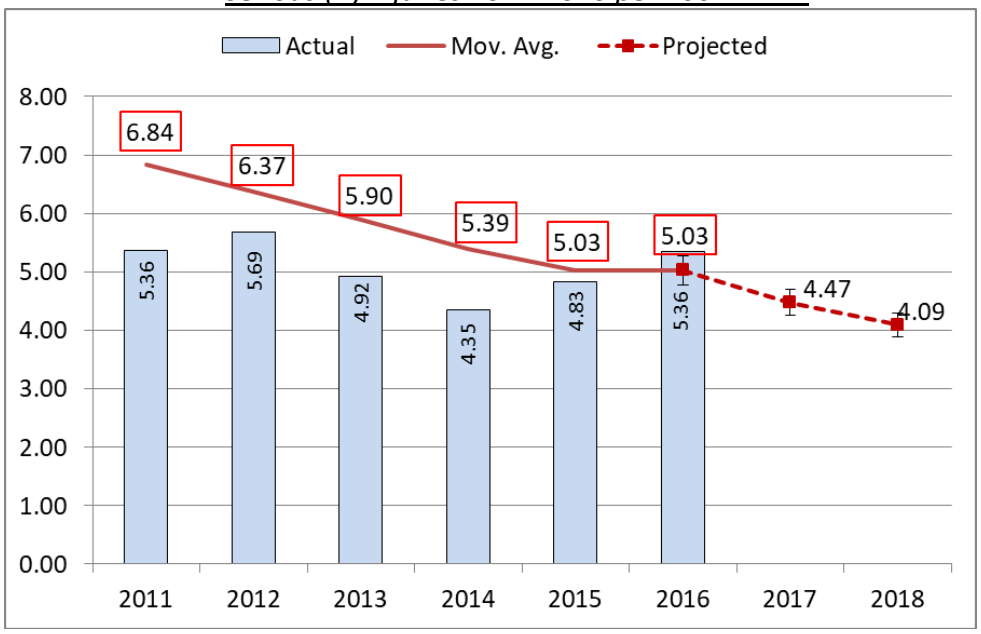
Serious (A) Injuries 2011-2016 per 100M VMT



Source: Connecticut Crash Data Repository

To maintain the five year (2011-2015) moving average of 5.03 Serious (A) Injuries per 100M VMT during the five year (2014-2018) period.

- While Serious (A) Injuries have fluctuated during the five year reporting period, the five year moving average and trend has continued to decrease for the 2011-2015 baseline period.
- Although the five year moving average decreased during the 2011-2015 baseline period, preliminary 2016 data show the Serious (A) Injury per 100M VMT total of 4.83 and the five year moving average of 5.03 to represent an increase in the five year moving average.
- Although 2016 VMT data was not available at the time of publishing projected VMT was used in the 2016 figure in this graph.
- Serious Injury totals have increased for consecutive years, for this reason, the Serious (A) Injury per 100M VMT trend is expected to increase during the planning period. Collaboration with SHSP targets has led to the choice to maintain the current five year moving average.

Total Number of Non-Motorized Fatalities and Serious Injuries	280

Describe the basis for established target, including how it supports SHSP goals.

•Although Pedestrian and Bicyclist Fatalities and Serious Injuries have maintained a fairly steady level over the reporting period, there has been an increase in this measure during the last two years. Preliminary 2016 and 2017 data show this increase to be maintained during the current year. •Though 2016 VMT data was not available at the time of goal setting for the 2018 planning period, this trend is expected to continue and possibly increase. For this reason, the fatality and serious injury trends are expected to increase during the planning period and maintaining the current number of pedestrian bicyclists killed and seriously injured was chosen. After reviewing the 2017-2021 SHSP goals and emphasis area strategies, CTDOT chose to maintain the current number of pedestrian and bicyclists killed and seriously injured.

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REVISED

Revisions to:
- Text in RED
- Figure 3

To: Transportation Committee
Transportation Subcommittee

From: Jennifer Carrier, Director of Transportation Planning
Rob Aloise, Principal Transportation Engineer

Date: June 6, 2018; REVISED June 15, 2018

Subject: Performance Measures and Target Setting – Bridge Conditions

Per Federal requirements, on May 20, 2018 CTDOT set 2-year and 4-year Transportation Performance Measures targets for ten (10) FHWA performance measures covering 5 general areas, summarized below. CRCOG now has until November 16, 2018 to either adopt/support each CTDOT target, or set our own.

- Bridge Conditions
- Pavement Conditions
- Performance of the National Highway System (NHS)
- Performance of Freight
- CMAQ Program – On-Road Mobile Source Emissions

This memorandum presents and reviews the current Bridge Conditions and CTDOT Performance Measure Targets, and offers potential CRCOG Target recommendations for review and discussion at the upcoming June Subcommittee meeting.

FHWA Bridge Conditions Performance Measure

The two FHWA Bridge Condition performance measures include:

- Percentage of NHS Bridges classified as in Good condition (by deck area)
- Percentage of NHS Bridges classified as in Poor condition (by deck area)

To understand these measures, it is important to have the following background:

- Federal guidance focuses the bridge performance measures on the National Highway System (NHS) which consists of a network of strategic highways, including interstates and other roads that serve major airports, rail or truck terminals, and other strategic transport facilities. The specific NHS roadways within our region are illustrated in Figure 1.
- Per federal guidelines, structures with lengths exceeding 20 feet (sum of its spans) are considered bridges. CTDOT regularly inspects all Connecticut bridges (regardless of ownership), and assigns each a condition rating (Good, Fair, Poor) also per federal guidelines.
- CTDOT uses dTIMs, developed by Deighton Associates, as their asset management system. The program encompasses strategic planning components with maintenance, operations and capital investment decision-making aspects.
- CTDOT's Bridge Management System starts with the current status of the bridge, accounts for programmed work and adjusts for predicted decay. Major bridges are analyzed individually by engineers and spreadsheets and all other structures are analyzed by dTIMS. Bridge inputs to dTIMS include current bridge condition data, deterioration curves, scheduled projects, treatments and costs, budgets, time spans, inflation and discount rates.

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Current NHS Bridge Conditions

The below graphics represent NHS bridge conditions within our region, compared to other regions.

MPO	NHS-NBI Bridges (Deck Area - ft²)	Locally Owned NHS-NBI Bridges	FAST Act *National Performance Management Measures*	
			% Good (by deck area)	% Poor or % Structurally Deficient (by deck area)
1 - South Western	2,183,450	0	3.3%	19.1%
2 - Housatonic Valley	920,157	2	22.0%	7.4%
3 - Northwest Hills (RPO)	273,510	0	22.7%	10.0%
5 - Central Naugatuck Valley	1,917,348	1	9.7%	34.2%
7 - Greater Bridgeport Valley	3,765,462	0	24.8%	6.3%
8 - South Central Region	4,014,609	4	42.8%	6.0%
10 - Capitol Region	8,567,699	5	13.6%	15.7%
11 - Lower CT River Valley	1,418,300	2	11.0%	16.2%
13 - Southeastern CT	2,832,830	0	7.4%	23.0%
15 - Northeastern CT (RPO)	377,273	0	15.3%	12.6%
TOTAL	26,270,638	14	18.1%	14.9%

Currently, 15.0% of NHS Bridges statewide (by deck area) are categorized in Poor condition, with bridges within CRCOG experiencing a similar percentage of 15.7%. A map showing the region's NHS Bridges currently in Poor condition appears in Figure 2.

Bridge Condition Measures

- % of NHS Bridges in "Good" and "Poor" condition
- Max % poor: 10 (MAP-21)

Asset (unit of measure)	Current Condition (NBI submittal 3/2017)		2-year targets (2020)		4-year targets (2022)	
	Good %	Poor %	Good %	Poor %	Good %	Poor %
NHS Bridge (deck area)	18.1	15.0	22.1	7.9	26.9	5.7
			Better	Better	Better	Better

CTDOT's statewide bridge performance targets are summarized above.

Staff Review of CTDOT NHS Bridge Condition Targets

Federal regulations require that State DOT's maintain bridges so the percentage of bridge deck area classified as poor does not exceed 10%. If, for 3 consecutive years, this condition is not met, States are required to obligate and set aside National Highway Performance Program (NHPP) funds for eligible bridge projects on the NHS.

To determine the future 2-year and 4-year statewide targets, CTDOT relied on projections from its bridge asset management program, and utilized an assumption that, 2017 funding levels would be maintained. Under this scenario, CTDOT sees the condition of NHS Bridges improving, with both the percentage of bridges in Good condition increasing, and the percentage of bridges in Poor condition decreasing. The anticipated percent of NHS Bridges in Poor condition, is anticipated to decreases to 7.9% and 5.7% in 2 and 4 years, respectively.

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Non-NHS Bridge Conditions

As previously noted, the FHWA bridge performance measures only apply to bridges located on the NHS. However, there are almost as many bridges within the region that are not located on the NHS (516 vs. 528). Currently, 39 of the region's Non-NHS bridges (representing 7.6% of Non-NHS bridge deck area) are in Poor condition. All regional non-NHS bridges are mapped in Figure 3.

An item worth noting, we understand there are 5 locally owned bridges on the NHS. These bridges are generally summarized below:

Condition	Town	Facility Carried	Features Intersected
Poor	West Hartford	North Main St.	West Branch Trout Brook
Good	West Hartford	Farmington Ave.	Trout Brook
Fair	Hartford	I-84 AMTRAK CTFA	North Branch of Park River
Fair	Hartford	I-84 RAMPS and Locals Streets	Park River Conduit
Fair	Hartford	SR 598 + Local Streets	Park River Conduit

As we consider bridge conditions and investments, we may want to consider prioritizing improvements to these 5 bridges, when conditions merit, given they are locally owned and appear to be regionally significant. CRCOG will further discuss these structures with the towns of West Hartford and Hartford.

Current TIP Bridge Funding

CRCOG reviewed the Transportation Improvement Program (TIP) and the TIP Bridge Report (April 2018) to assess financials associated with bridge improvements within the Capital Region. In general, we found that approximately $793 million is programmed in the TIP for bridge projects (including inspection, design, repair and construction) between FFY2018 and 2021.

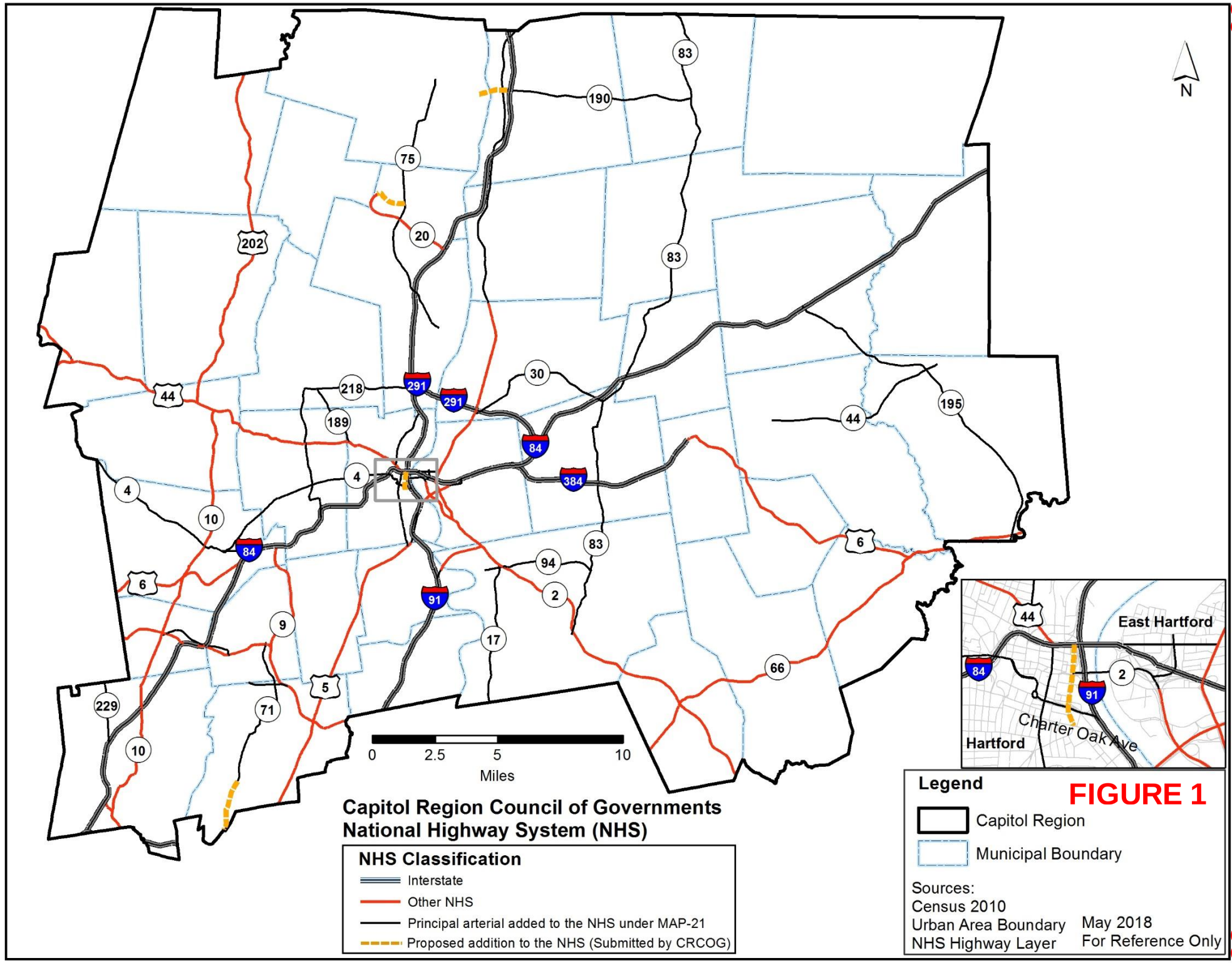
Staff Recommendations

The CTDOT 2020 and 2022 targets work to address the Poor condition of bridges on the NHS and meet federal guidelines. CRCOG feels developing our own regional targets for NHS roads is outside of what we can reasonably do given limited access to DOT's asset management system and regional data. CRCOG recommends supporting DOT's 2 and 4-year targets for the NHS bridge conditions.

However, CRCOG staff feels that we should also aim to improve the non-NHS bridges in our region, with the goal of not exceeding a maximum of 10% in poor condition in 2020 and 2022. We suggest that this goal would be an administrative one and something to monitor and work with CTDOT and municipalities on to ensure projects not on the NHS are being addressed. Many of these non-NHS bridges are municipally owned and therefore of prime importance to us.

CRCOG staff also recommends that we work on the following initiatives:

- Monitor the 5 locally owned bridges on the NHS (identified above) and ensure improvements are prioritized for structures in 'Poor' conditions
- Coordinate with CTDOT to understand the dTIMS asset management system and assess regional use
- Incorporate the Non-NHS Bridges in poor condition data and map into CRCOG's Long Range Transportation Plan
- Update bridge condition mapping on a year basis to monitor progress and bridge conditions
- Coordinate with CTDOT as it relates to bridge investments within our region
- Ensure improvements to Interstate 84 in Hartford advance, especially reconstruction of the Interstate 84 Viaduct project
- Monitor bridge performance best practices in other states and Regional Planning Organizations



Capitol Region Council of Governments
National Highway System (NHS)

NHS Classification
- Interstate
- Other NHS
- Principal arterial added to the NHS under MAP-21
- Proposed addition to the NHS (Submitted by CRCOG)

Legend
- Capitol Region
- Municipal Boundary

Sources:
Census 2010
Urban Area Boundary
NHS Highway Layer

May 2018
For Reference Only

FIGURE 1

	Municipality	Feature Carried	Area (sq ft)	Length (ft)
1	East Hartford	I-84 TR 829	9,386	143
2	East Hartford	ROUTE 2 WESTBOUND	20,315	645
3	East Hartford	SR 500 TR 801	18,694	419
4	East Hartford	INTERSTATE-84 EB	88,933	1390.1
5	Farmington	INTERSTATE-84 EB	33,796	485.9
6	Glastonbury	ROUTE 17 NB	3,336	73.2
7	Hartford	I-84 TR 826	6,992	263.1
8	Hartford	I-91 TR 840	11,783	408.1
9	Hartford	INTERSTATE-91 NB	64,226	1350.1
10	Hartford	SR 598 EASTBOUND	17,215	361.9
11	Hartford	INTERSTATE-84	58,805	870.1
12	Hartford	I-84 TR 825	13,408	524
13	Hartford	INTERSTATE-84 EB	89,654	1271
14	Hartford	INTERSTATE-84 WB	59,796	810
15	Hartford	INTERSTATE-84 EB	161,105	3252
16	Hartford	INTERSTATE-84 WB	188,670	3177.2
17	Hartford	I-84 RAMP 114	10,621	415
18	Hartford	I-84 RAMP 115	10,881	307.1
19	Hartford	INTERSTATE-84 EB	46,339	974.1
20	Hartford	INTERSTATE-84 EAST	102,688	1852
21	Hartford	I-84 TR 824	42,059	1187
22	Hartford	I-84 TR 823	51,612	1430.1
23	Hartford	I-84 TR 823	16,510	599.1
24	Marlborough	ROUTE 2 WESTBOUND	5,154	118.1
25	New Britain	I-84 TR 815	29,233	928.1
26	New Britain	I-84 RAMPS 181&184	25,542	430.1
27	New Britain	ROUTE 71	67,272	630.9
28	Plainville	INTERSTATE-84 WB	36,764	663.1
29	Plainville	INTERSTATE-84 EB	47,297	853
30	Simsbury	ROUTE 10	2,164	44
31	South Windsor	I-291 & KING ST.	2,925	36.1
32	Southington	ROUTE 10	2,015	59.1
33	West Hartford	NORTH MAIN STREET	3,053	50.9

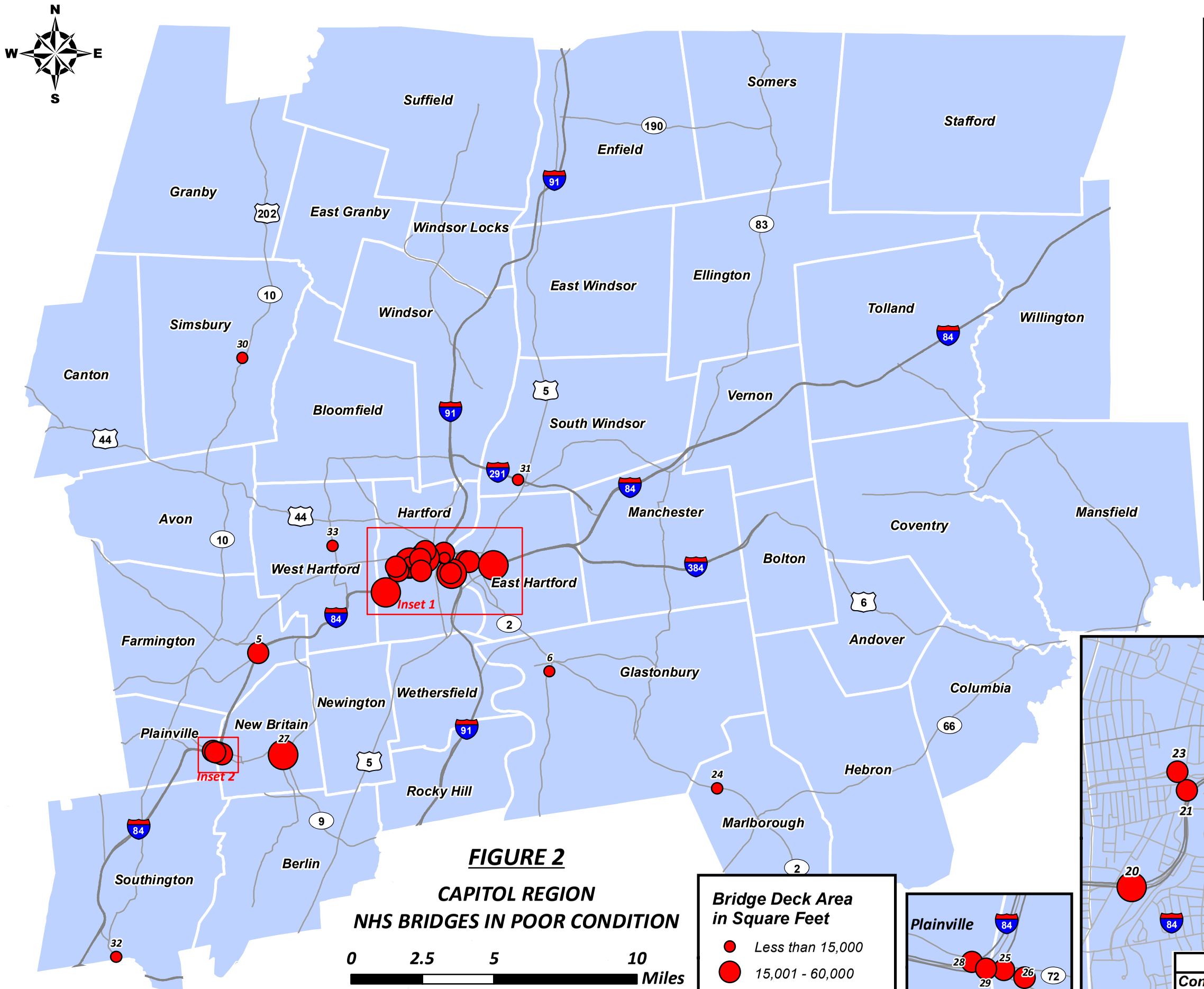


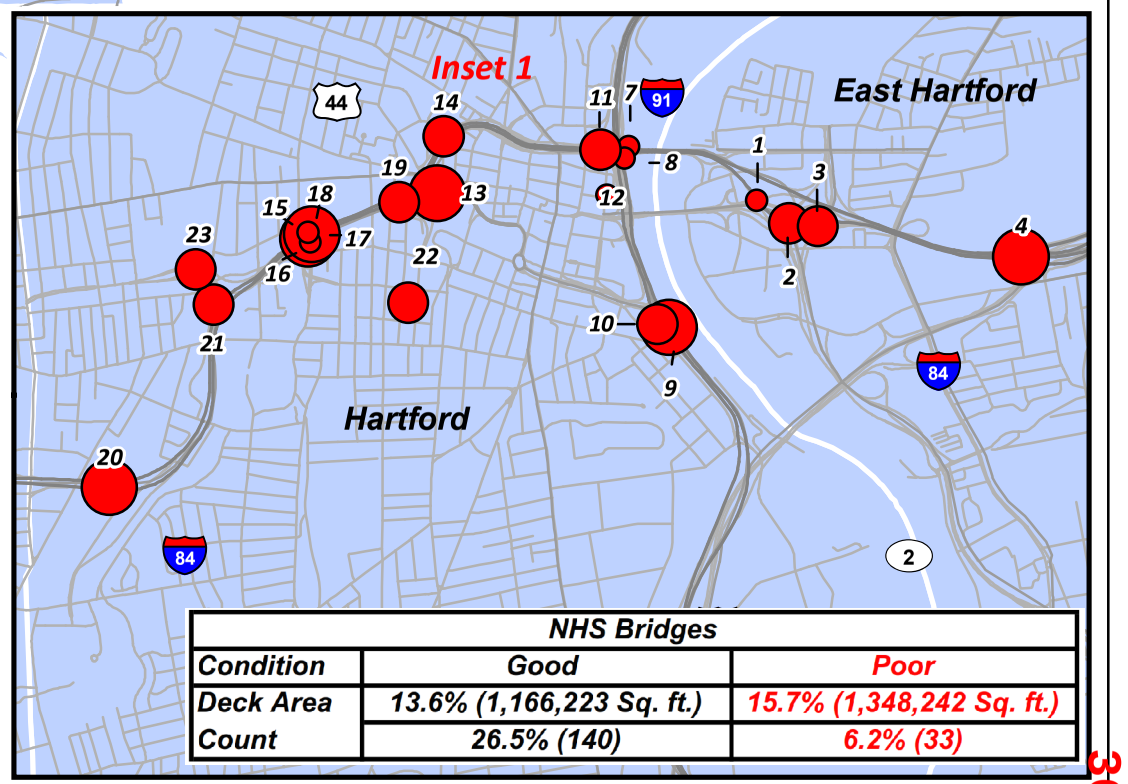
FIGURE 2

CAPITOL REGION
NHS BRIDGES IN POOR CONDITION

0 2.5 5 10 Miles

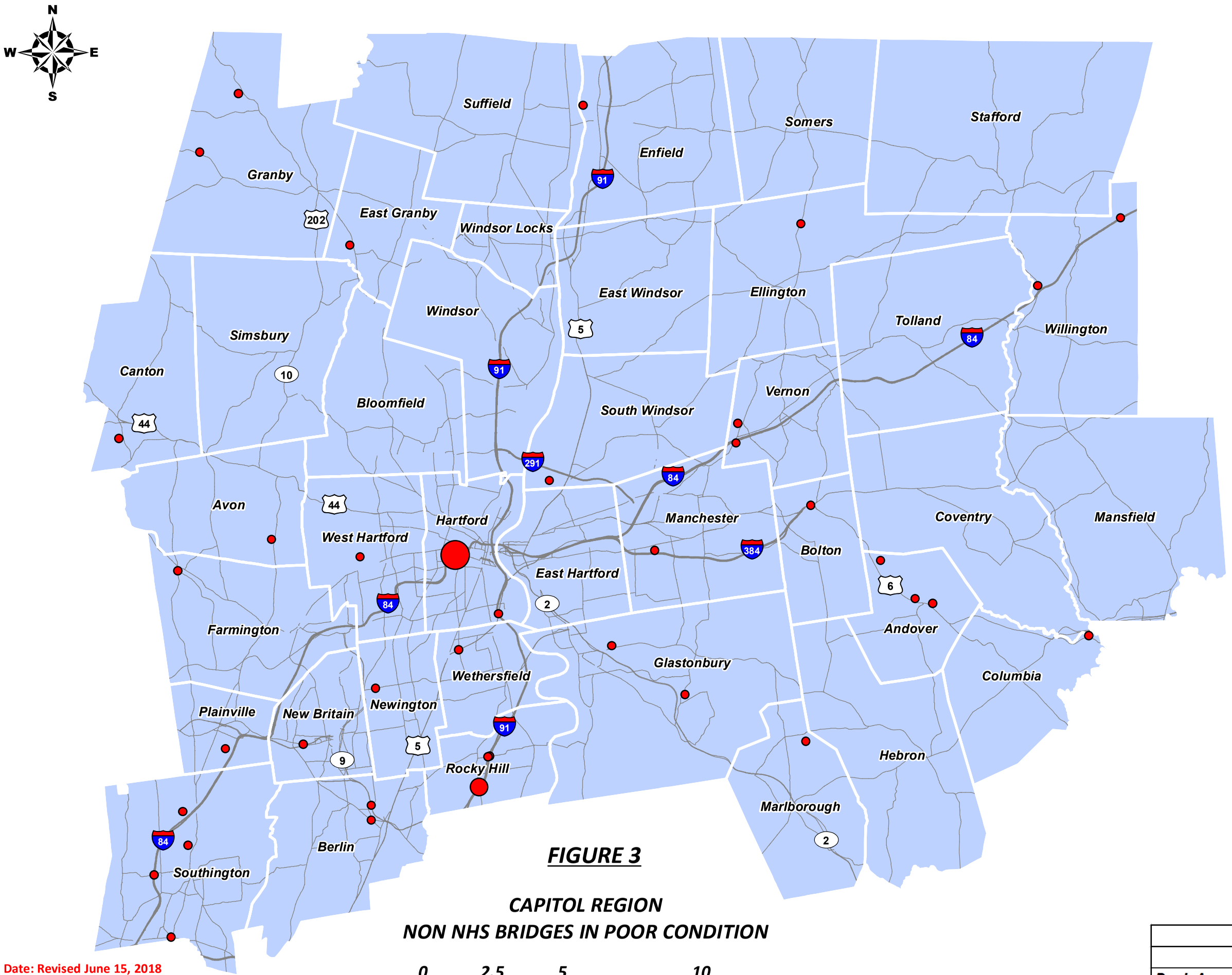
Bridge Deck Area in Square Feet

- Less than 15,000
- 15,001 - 60,000
- Greater than 60,000



NHS Bridges		
Condition	Good	Poor
Deck Area	13.6% (1,166,223 Sq. ft.)	15.7% (1,348,242 Sq. ft.)
Count	26.5% (140)	6.2% (33)

Date: June 2018
Datasource: 2017 National Bridge Inventory
For Reference Purposes Only



Municipality	Non NHS Bridges in Poor Condition
Andover	3
Avon	1
Berlin	2
Bloomfield	0
Bolton	1
Canton	1
Columbia	0
Coventry	1
East Granby	1
East Hartford	0
East Windsor	0
Ellington	1
Enfield	1
Farmington	1
Glastonbury	2
Granby	2
Hartford	2
Hebron	0
Manchester	1
Mansfield	0
Marlborough	1
New Britain	1
Newington	1
Plainville	1
Rocky Hill	3
Simsbury	0
Somers	0
South Windsor	1
Southington	4
Stafford	0
Suffield	0
Tolland	0
Vernon	2
West Hartford	1
Wethersfield	1
Willington	3
Windsor	0
Windsor Locks	0
CRCOG Total	39

Bridge Deck Area in Square Feet

- Less than 15,000
- 15,001- 60,000
- Greater than 60,000

FIGURE 3

CAPITOL REGION
NON NHS BRIDGES IN POOR CONDITION

0 2.5 5 10 Miles

Date: Revised June 15, 2018
Datasource: 2017 National Bridge Inventory
For Reference Purposes Only

Non-NHS Bridges		
	Good	Poor
Deck Area	21.4% (630,359 Sq. ft.)	6.8% (198,925 Sq. ft.)
Count	37.2% (192)	7.6% (39)

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To: Transportation Committee

From: Jennifer Carrier, Director of Transportation Planning
Rob Aloise, Principal Transportation Engineer

Date: June 12, 2018

Subject: Performance Measures and Target Setting – Pavement Conditions

This memorandum presents and reviews the current Pavement Conditions and CTDOT Performance Measure Targets, and offers potential CRCOG Target recommendations for review and discussion at the June Subcommittee meeting. CRCOG has until November 16, 2018 to either adopt CTDOT's targets or set our own.

FHWA Pavement Condition Performance Measures

The four performance measures include:

- Percentage of Pavements on the Interstate System in Good condition
- Percentage of Pavements on the Interstate System in Poor condition
- Percentage of Pavements on the non-Interstate NHS in Good condition
- Percentage of Pavements on the non-Interstate NHS in Poor condition

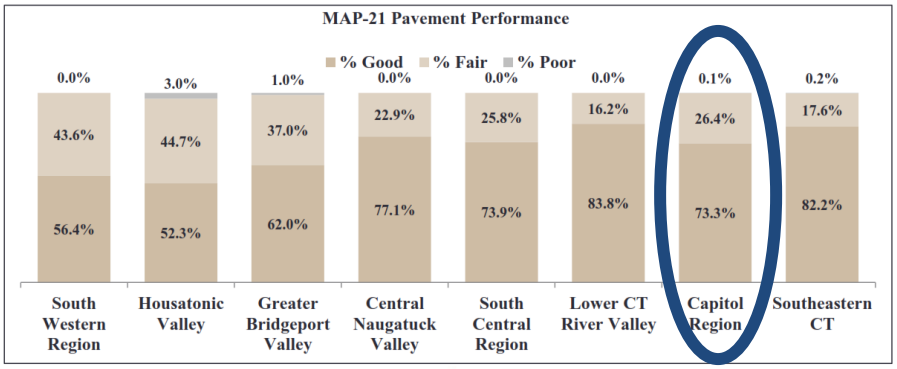
To understand these measures it is important to have the following background:

- Federal guidance focuses the pavement performance measures on the National Highway System (NHS) which consists of a network of strategic highways, including interstates and other roads that serve major airports, rail or truck terminals, and other strategic transport facilities. The specific NHS roadways within our region are illustrated in Figure 1.
- CTDOT uses dTIMS, developed by Deighton Associates, as their asset management system. The program encompasses strategic planning components with maintenance, operations and capital investment decision-making aspects.
- CTDOT's Pavement Management System, consists of three major components: a system to regularly collect highway condition data; a computer database (ROADWARE Vision) to process, sort, and store the collected data, and dTIMS to evaluate repair or preservation strategies and suggest cost-effective projects to maintain highway conditions.

Current NHS Pavement Conditions

The following graphics represent pavement conditions within our region, compared to other regions.

Percentage of Pavements on the Interstate NHS in Good/Poor Condition



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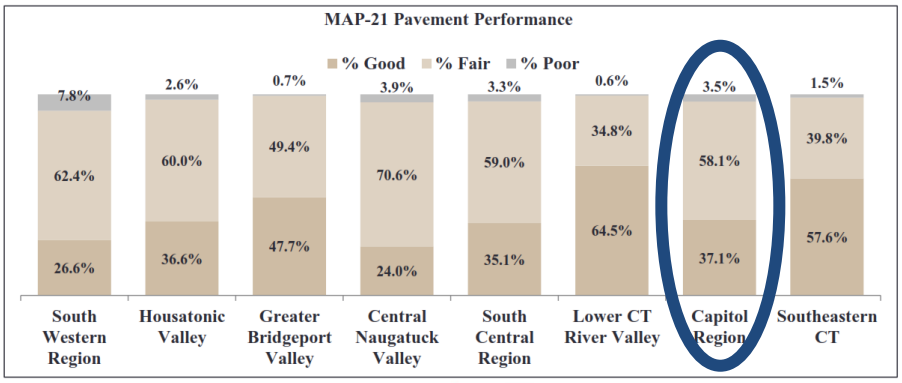
Percentage of Pavements on the non-Interstate NHS in Good/Poor Condition



As illustrated in these graphics, the region's Interstate NHS pavements and non-Interstate NHS pavements are rated 0.1% and 3.5% poor, respectively.

Statewide, 2.2% of the Interstate NHS pavements and 8.6% of the non-interstate NHS pavements are in poor condition.

CTDOT's pavement condition performance targets for 2020 and 2022 are shown to the right.

Pavement Condition Measures

- % of Interstate system in "Good" and "Poor" condition
  - MAX % Poor (Interstates): 5%
- % of National Highway System in "Good" and "Poor" condition

Asset (unit of measure)	Current Condition (HPMS submittal 6/2017)		2-year targets (2020)		4-year targets (2022)	
	Good %	Poor %	Good %	Poor %	Good %	Poor %
Interstate Pavement (lane miles)	66.2	2.2	65.5	2.0 Better	64.4	2.6
Non-Interstate NHS Pavement (lane miles)	37.9	8.6	36.0	6.8 Better	31.9	7.6

Staff Review of CTDOT NHS Pavement Condition Targets

Federal regulations require that State DOT's maintain pavements so the percentage of Interstate pavement classified as poor does not exceed 5% (there is no threshold for non-Interstate pavement). If this condition is not met States are required to set aside and obligate a specified percentage of its NHPP funds and STP funds to correct the Interstate pavement conditions until the 5% minimum threshold is met.

To determine the future 2-year and 4-year statewide targets, CTDOT relied on projections from its pavement asset management program, utilizing the assumption that 2017 funding levels would be maintained. Under this scenario, CTDOT sees the condition of NHS pavements improving slightly in the 2-year projection, then receding slightly back to approximately current conditions in the 4-year timeframe. It should be noted that in both timeframes the percent of Interstate Pavement in Poor condition remains below the 3%, which is below the 5% federal threshold.

Within CRCOG, NHS Pavement Conditions are significantly better than the statewide averages, with only 0.1% of Interstate and 3.5% of Non-Interstate pavement in Poor condition. Both of these measures are within the 5% maximum threshold that FHWA applies to Interstates. A map showing locations where the region's NHS roadway's pavements are in Poor condition appears in Figure 2. As shown on the map, there is very little in Interstate pavement that is in Poor condition, and Poor pavement conditions on NHS Non-Interstate roadways are primarily limited to the following three areas:

- Route 71 in Berlin
- Route 30 in South Windsor
- Route 83 in Ellington and in southern Somers

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Staff Recommendations

The CTDOT 2020 targets work to address the Poor condition of pavement on the NHS Interstate and NHS non-interstate system; the 2022 targets show a deterioration of the 2020 targets. It should be noted that the 2022 targets still meet federal requirements as it relates to NHS Interstate poor pavement conditions being below 5%.

CRCOG staff feels developing our own regional targets for NHS Interstate and NHS non-Interstate pavements is currently outside of what we can reasonably do given limited access to DOT's asset management system and regional data. CRCOG staff feels the NHS Interstate targets represent pavement improvements in the next 2 years. CRCOG also feels the NHS non-interstate poor pavement conditions targets represent an improvement over current conditions. Understanding this, CRCOG staff recommends supporting DOT's 2 and 4-year targets for the pavement conditions.

However, understanding the FHWA pavement performance measures only apply to NHS roadways, and that over 95% of lane miles (20,427 of 21,390) of Connecticut's public roadways are not located on the NHS, we feel CRCOG should also aim to improve the non-NHS pavements within the region. Currently almost 85% of these non-NHS lane miles (17,287 of 20,427) are municipally owned, with pavement conditions either unknown, or documented within the respective municipality. There is no comprehensive source of aggregated data available, and therefore Non-NHS pavement conditions are mostly unquantifiable on a regional basis.

Therefore, CRCOG staff also recommends that we work on the following initiatives:

- Support improvements that address these three stretches of non-Interstate NHS roadways with poor conditions generally identified above and in the attached (e.g. Route 71 in Berlin; Route 30 in South Windsor; Route 83 in Ellington and a portion of Somers)
- Coordinate with CTDOT to understand the dTIMS asset management system and assess regional use
- Incorporate the NHS Pavement Condition data and map into CRCOG's Long Range Transportation Plan
- Update pavement condition mapping on a regular basis to monitor progress and pavement conditions
- Coordinate with CTDOT as it relates to pavement investments within our region
- Monitor pavement performance best practices in other states and Regional Planning Organizations
- Evaluate if the establishment of a comprehensive regional pavement management system, that focuses on non-NHS roadways, has merit and if so evaluate the pros, cons, options, and feasibility of beginning to establish one.

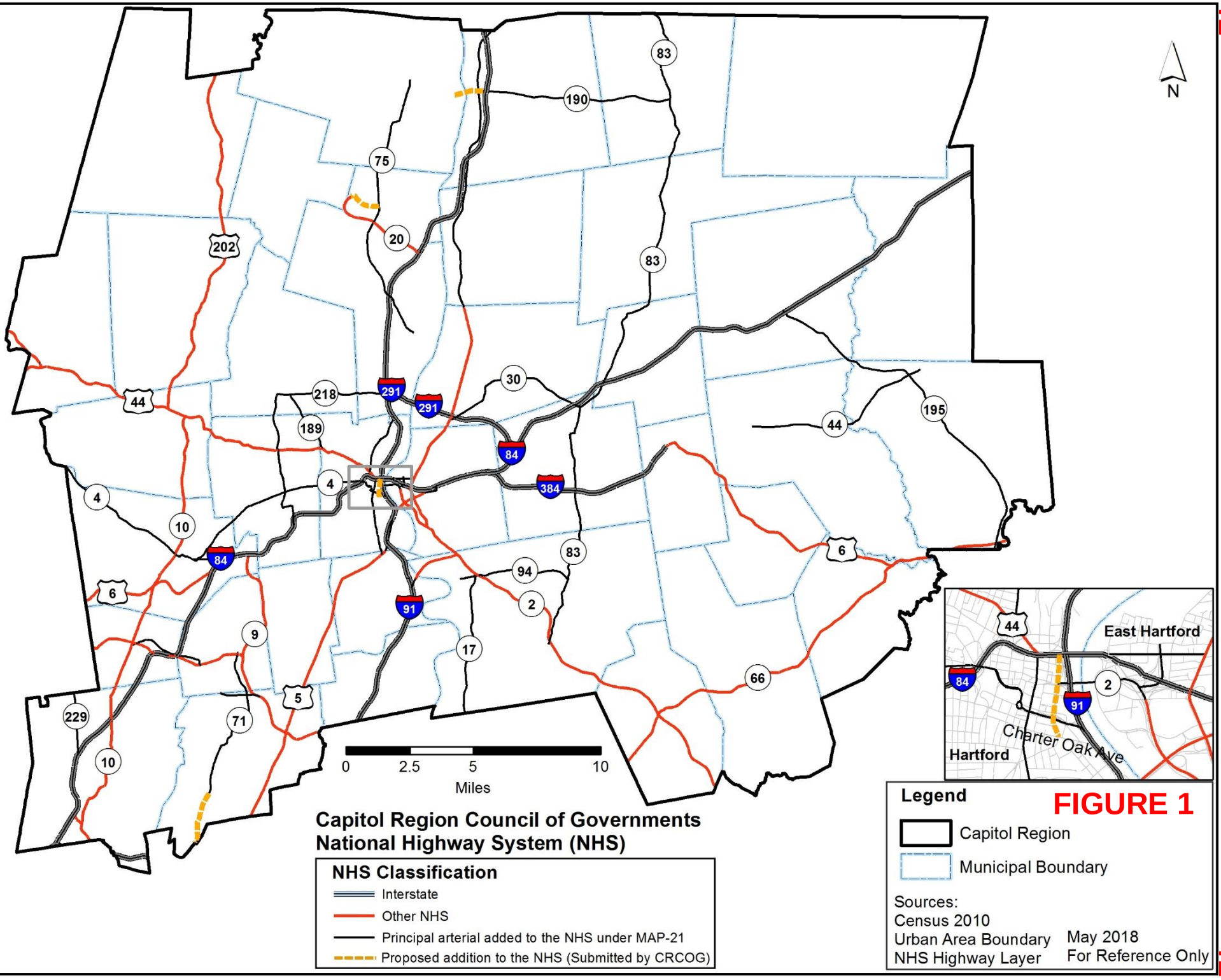
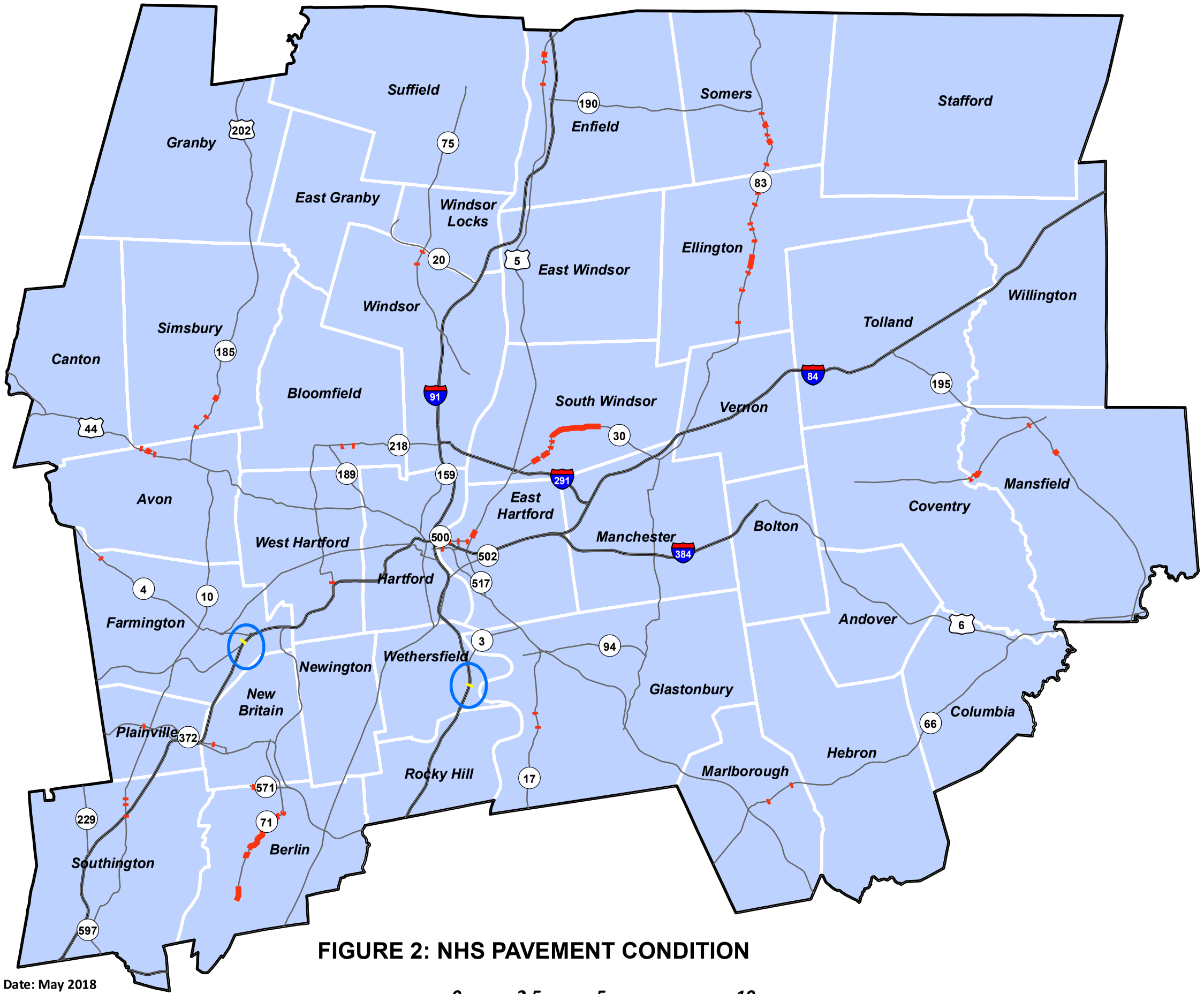

N
0
2.5
5
10
Miles
East Hartford
Hartford
Charter Oak Ave
Capitol Region Council of Governments
National Highway System (NHS)
NHS Classification
Interstate
Other NHS
Principal arterial added to the NHS under MAP-21
Proposed addition to the NHS (Submitted by CRCOG)
Legend
Capitol Region
Municipal Boundary
Sources:
Census 2010
Urban Area Boundary
NHS Highway Layer
May 2018
For Reference Only

FIGURE 1



Municipality	Total Lane Miles in Poor Condition
South Windsor	6.60
Berlin	5.31
East Hartford	3.68
Ellington	3.12
Avon	2.21
Enfield	1.57
Southington	1.50
Mansfield	1.43
Somers	1.40
Bloomfield	0.83
Simsbury	0.80
Farmington	0.70
Windsor	0.45
Glastonbury	0.44
Marlborough	0.40
Wethersfield	0.40
New Britain	0.20
Plainville	0.20
West Hartford	0.12
Capitol Region	**31.37**

Interstates Pavement Condition		
	Good Condition	Poor Condition
Lane Miles	459.5 (73.3%)	0.7 (0.1%)
Non-Interstate Pavement Condition		
	Good Condition	Poor Condition
Lane Miles	322.3 (37.1%)	30.7 (3.5%)

NHS Pavement Condition

Interstate Poor Pavement Condition

Non-Interstate Poor Pavement Condition

(Locations are approximate and for illustration purposes only)

FIGURE 2: NHS PAVEMENT CONDITION

Date: May 2018
Datasource: CTDOT Pavement Data
For Refrence Purposes Only.

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To: Transportation Committee
Cost Review and Schedule Subcommittee

From: Jennifer Carrier, Director of Transportation Planning
Rob Aloise, Principal Transportation Engineer

Date: July 13, 2018 (Revised 8/24/18: See Changes in Red)

Subject: Performance Measures and Target Setting – Performance of the National Highway System (NHS)

This memorandum presents and reviews the current performance of the National Highway System (NHS) and associated CTDOT Performance Measure Targets, and offers potential CRCOG recommendations for review and discussion at the July Subcommittee and Transportation Committee meetings. CRCOG has until November 16, 2018 to either adopt CTDOT's targets or set our own.

Performance of the NHS Measures

The four performance measures include:

- Percent of person-miles traveled on the Interstate System that are reliable
- Percent of person-miles traveled on the Non-Interstate NHS that are reliable
- Annual hours of peak-hour excessive delay (PHED) per capita (CTDOT will establish in 2022; CRCOG is not required to set this target until 2022 given our region is less than 1 million in population)
- Percentage of Non-Single Occupancy Vehicle (SOV) Travel (CTDOT will establish in 2022; CRCOG is not required to set this target until 2022 given our region is less than 1 million in population)

To understand these measures, it is important to have the following background:

- Federal guidance focuses these performance measures on the National Highway System (NHS) which consists of a network of strategic highways, including interstates and other roads that serve major airports, rail or truck terminals, and other strategic transport facilities. The specific NHS roadways within our region are illustrated in Figure 1.
- The Performance of the NHS measures strive to assess travel time reliability. The measurement of travel time reliability is an emerging practice that compares days with high delay to days with average delay. To determine the reliability of a segment, a Level of Travel Time Reliability (LOTTR) is calculated as the ratio of the longer travel times (80th percentile) to a "normal" travel time (50th percentile), with reliability defined as an LOTTR of less than 1.5.
- Predicting future NHS performance in this manner is new, and therefore CTDOT has a low level of confidence in the accuracy of these predictions and targets. CTDOT has obtained newly provided data and software to determine current conditions, however software and/or systems that can predict future performance based on projects or investments are not readily available. CTDOT arrived at the 2-year and 4-year targets by extrapolating future reliability based the very limited number of available historical reliability data-points (less than five data points).
- Penalties may be assessed if reliability targets are not met, however unlike some of the other performance measures, there are no penalties associated with exceeding a minimum percentage of reliability.

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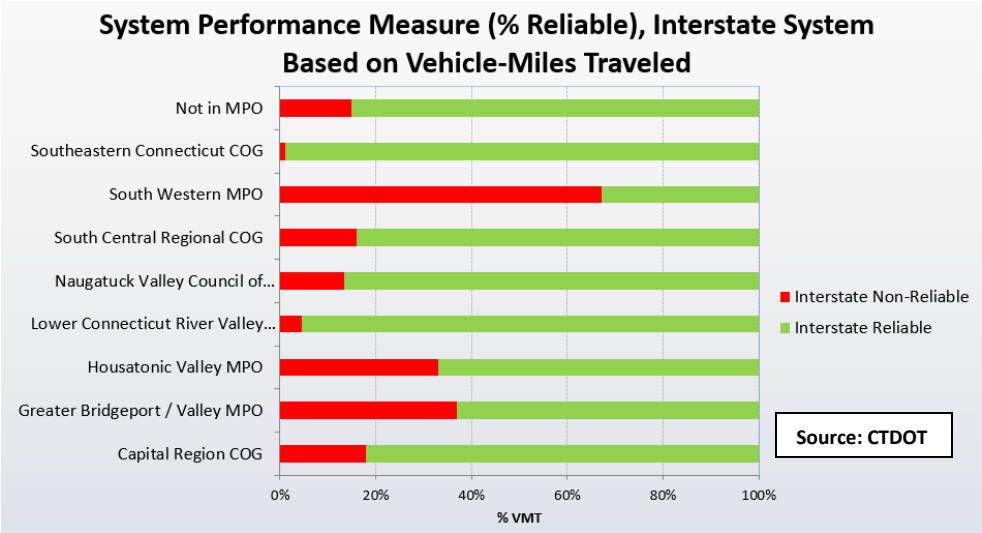
National Highway System (NHS) Performance

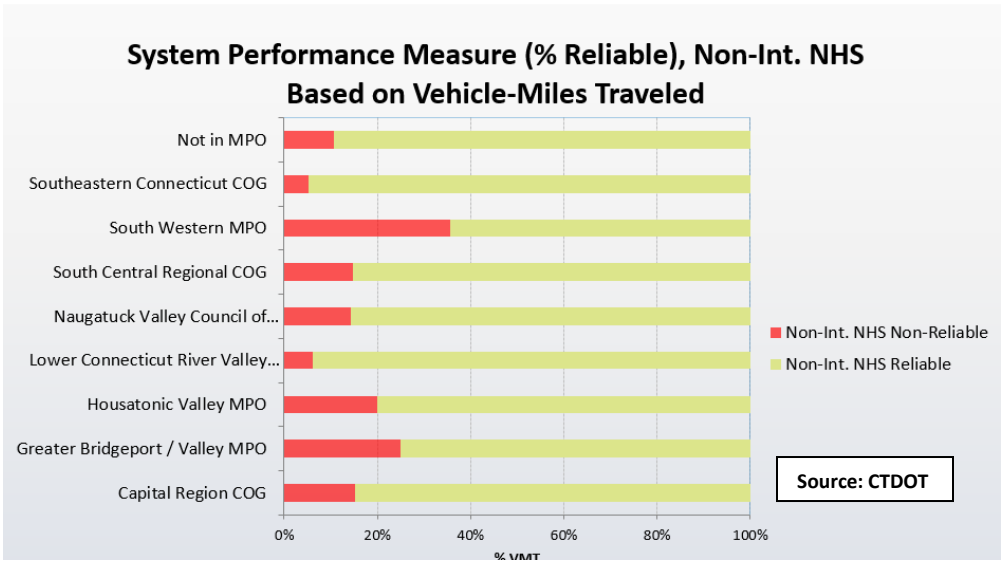
CTDOT's NHS performance targets for the State of Connecticut are illustrated to the right. Of note is that both the 2-year and 4-year targets represent an expected slight decline in travel time reliability on the NHS. These are predicted based on linear extrapolations of limited historical data in various formats, and therefore CTDOT has a low confidence level in their predictive capability.

System Reliability Measures

- % person-miles of Interstate that are "reliable"
- % person-miles of non-Interstate NHS that are "reliable"

System (unit of measure)	Current Condition	2-year targets (2020)	4-year targets (2022)
	Reliable %	Reliable %	Reliable %
Interstate (person-miles)	78.3	75.2	72.1
		Reliability declines in all cases	
Non-Interstate NHS (person-miles)	83.6	80.0	76.4





The graphics to the left illustrate current NHS system reliability within CRCOG as compared to other Connecticut regions. The top graphic shows that CRCOG's Interstates experience reliability of 86.8%, which is more reliable than the 78.3% statewide average. The bottom graphic illustrates that CRCOG's Non-Interstate NHS roadways experience reliability of 84.7%, which is slightly more reliable than the 83.6% statewide average.

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Maps showing locations of the region's reliable and unreliable segments of NHS roadway appear in Figure 2 (for the Interstate System) and Figure 3 (for the Non-Interstate NHS). As shown in Figure 2, the region's unreliable Interstate travel times are mostly contained within the following segments:

- I-84 in West Hartford and Hartford, and portions of I-84 in East Hartford
- Portions of I-91 in Hartford and Wethersfield
- A Portion of I-291 in Windsor and South Windsor

As shown in Figure 3, unreliable segments of the Non-Interstate NHS are distributed throughout CRCOG, with segments contained in most municipalities.

Staff Review of CTDOT's Targets for Performance of the NHS

As mentioned, CTDOT arrived at the 2-year and 4-year targets by extrapolating future reliability based a very limited number of annual historical data-points (less than five). Of note is that these targets represent an expected slight decline in travel time reliability on the NHS statewide. Because the measurement of travel time reliability is an emerging practice, and due to the limited availability of historical data and analysis tools, CTDOT has a low confidence level in the accuracy of these predictions and the resulting targets. Similarly, CRCOG's analysis efforts have focused on determination of existing travel time reliability and have not employed sophisticated future prediction methodologies. Given that the development and use of travel time reliability measures and predictive tools are emerging practices, at this time staff concurs with CTDOT's extrapolation method of target setting.

Staff Recommendations

Given that travel time reliability is an emerging practice, and the lack of tools currently available for predicting targets, CRCOG staff concurs with CTDOT's extrapolation method of targets setting and feels it is premature to employ a separate method on a regional basis. Understanding this, CRCOG staff recommends supporting CTDOT's 2 and 4-year targets for travel time reliability.

However, to further understand and develop this performance measure and associated future target setting, CRCOG staff also recommends that we work on the following initiatives:

- Update CRCOG's Congestion Management Process methodologies to align with travel time reliability performance measure methodologies, and include relevant performance measure/target setting information
- Work towards reviewing and assuring adequate ITS infrastructure is provided in high volume areas (Interstates, etc.) with travel times categorized as unreliable
- Work collaboratively with CTDOT and FHWA to research and implement travel time reliability methodologies and predictive capabilities.
- Incorporate the Travel Time Reliability data and maps into CRCOG's Long Range Transportation Plan
- Monitor Travel Time Reliability best practices in other states and Regional Planning Organizations

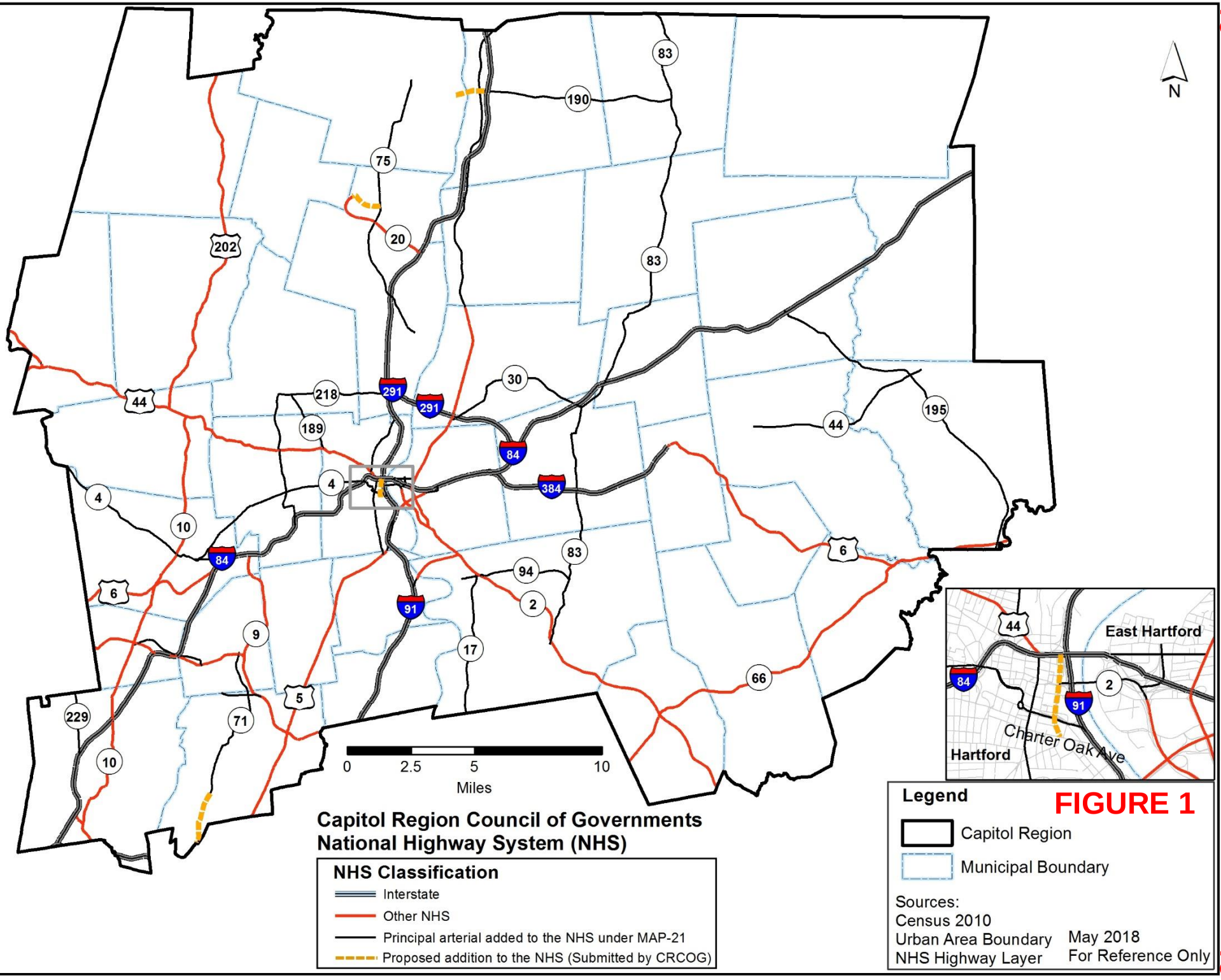
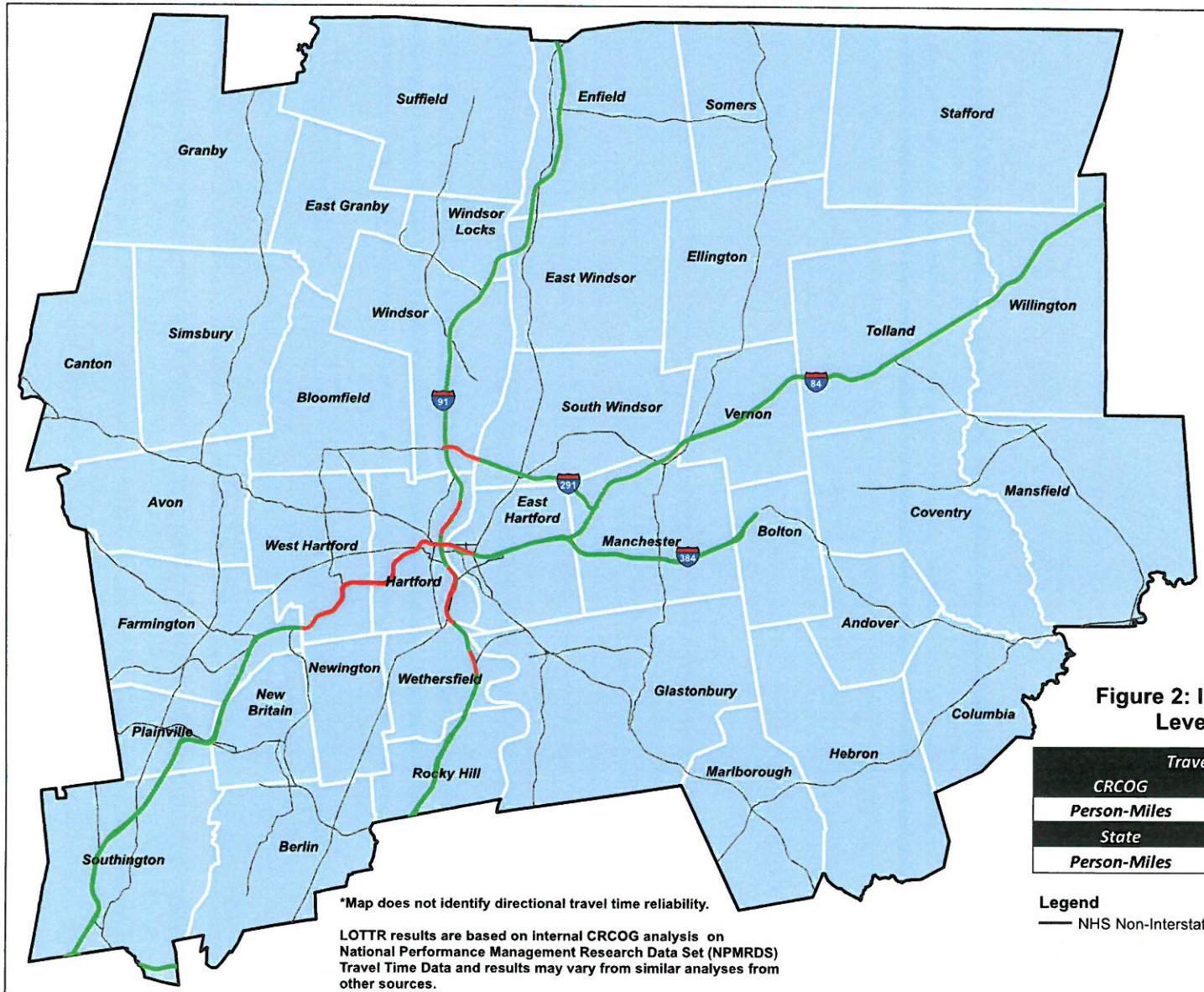

N
0
2.5
5
10
Miles
East Hartford
Hartford
Charter Oak Ave
Capitol Region Council of Governments
National Highway System (NHS)
NHS Classification
Interstate
Other NHS
Principal arterial added to the NHS under MAP-21
Proposed addition to the NHS (Submitted by CRCOG)
Legend
Capitol Region
Municipal Boundary
Sources:
Census 2010
Urban Area Boundary
NHS Highway Layer
May 2018
For Reference Only

FIGURE 1



*Map does not identify directional travel time reliability.

LOTTR results are based on internal CRCOG analysis on National Performance Management Research Data Set (NPMRDS) Travel Time Data and results may vary from similar analyses from other sources.

NPMRDS data is provided by INRIX and subject to frequent updates. Gaps in the INRIX data exist and results may change as updates and refinements (eg. HOV Lanes) are made.

Date: July 2018
Datasource: 2017 NPMRDS Travel Time Data
For Refrence Purposes Only.

0 3.75 7.5 15 Miles

Figure 2: Interstate National Highway System (NHS) Level of Travel Time Reliability (LOTTR)*

Travel Time Reliability on Interstate Highways			
CRCOG	Reliable	Unreliable	Total
Person-Miles	86.8%	13.2%	100.0%
State	Reliable	Unreliable	Total
Person-Miles	78.3%	21.7%	100.0%

Legend
NHS Non-Interstate Highways

Level of Travel Time Reliability (LOTTR) Threshold
1.5 and Below (Reliable)
Over 1.5 (Unreliable)

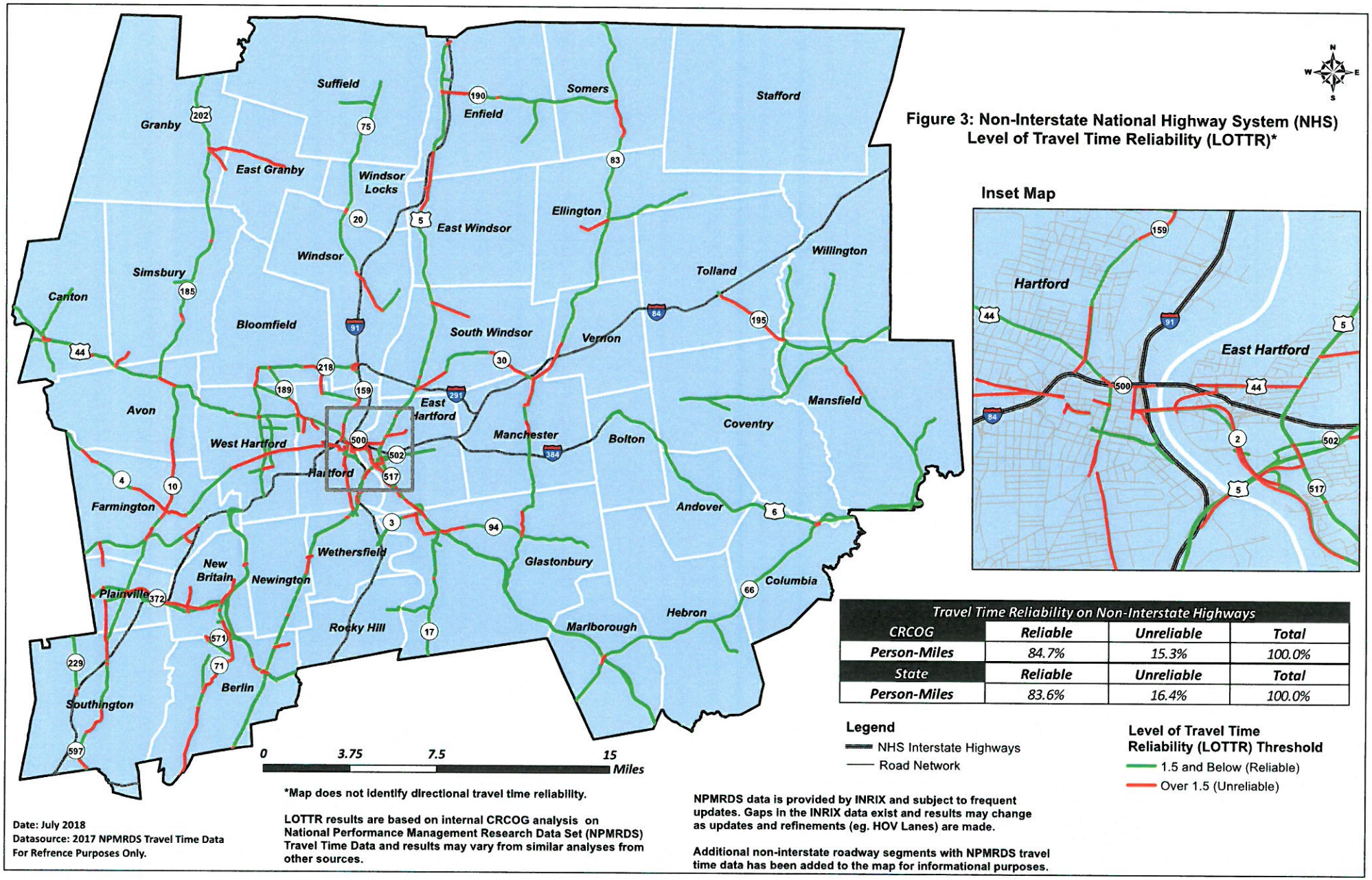


Figure 3: Non-Interstate National Highway System (NHS) Level of Travel Time Reliability (LOTTR)*

Inset Map

Travel Time Reliability on Non-Interstate Highways			
CRCOG	Reliable	Unreliable	Total
Person-Miles	84.7%	15.3%	100.0%
State	Reliable	Unreliable	Total
Person-Miles	83.6%	16.4%	100.0%

Legend

NHS Interstate Highways

Road Network

Level of Travel Time Reliability (LOTTR) Threshold

1.5 and Below (Reliable)

Over 1.5 (Unreliable)

Date: July 2018
Datasource: 2017 NPMRDS Travel Time Data
For Refrence Purposes Only.

*Map does not identify directional travel time reliability.

LOTTR results are based on internal CRCOG analysis on National Performance Management Research Data Set (NPMRDS) Travel Time Data and results may vary from similar analyses from other sources.

NPMRDS data is provided by INRIX and subject to frequent updates. Gaps in the INRIX data exist and results may change as updates and refinements (eg. HOV Lanes) are made.

Additional non-interstate roadway segments with NPMRDS travel time data has been added to the map for informational purposes.

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To: Transportation Committee
Cost Review and Schedule Subcommittee

From: Devon Lechtenberg, Transportation Planner
Rob Aloise, Interim Director of Transportation Planning

Date: August 24, 2018

Subject: Performance Measures and Target Setting – Freight Performance

This memorandum presents and reviews the current freight performance measure on the Interstate Highway system in CRCOG and associated CTDOT Performance Measure Targets, and offers potential CRCOG recommendations for review and discussion at the September Subcommittee and Transportation Committee meetings. CRCOG has until November 16, 2018 to either adopt CTDOT's targets or set our own.

Freight Performance Measure

The freight performance measure is:

- Truck Travel Time Reliability (TTTR) Index

To understand this measure, it is important to have the following background:

- The freight performance measures focuses on Interstate highways. Interstate Highways and other major roadways within the Capitol Region are illustrated in Figure 1.
- The freight performance measure strives to assess the reliability of travel time for trucks on the Interstate system. This is an emerging practice that compares days with extremely high delay to days with average delay. To determine the reliability of a segment, a Truck Travel Time Reliability (TTTR) measure is calculated as the ratio of the longer travel times (95th percentile) to a "normal" travel time (50th percentile). The TTTR's of interstate segments are then used to create the TTTR Index for the entire Interstate system using a weighted aggregate calculation for the worst performing times of each segment.
- Predicting future freight performance in this manner is new, and therefore CTDOT has a low level of confidence in the accuracy of these predictions and targets. CTDOT has obtained newly provided data and software to determine current conditions, however software and/or systems that can predict future performance based on projects or investments are not readily available. CTDOT arrived at the 2-year and 4-year targets by extrapolating future reliability based the limited historical data.
- Penalties may be assessed if reliability targets are not met, however unlike some of the other performance measures, there are no penalties associated with not achieving a specific level of reliability.

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Freight Performance on the Interstate System

CTDOT's freight performance targets for the State of Connecticut are illustrated to the right. Of note is that both the 2-year and 4-year targets represent an expected slight decline in travel time reliability on the Interstate System. These are predicted based on linear extrapolations of limited historical data in various formats, and therefore CTDOT has a low confidence level in their predictive capability.

Source: CTDOT

Freight Movement Measure

- Truck Travel Time Reliability (TTTR) index

TTTR index = 95th / 50th perc.
The higher the ratio, the worse the reliability

System (unit of measure)	Current Condition	2-year targets (2020)	4-year targets (2022)
	TTTR	TTTR	TTTR
Interstate (Truck Travel Time Reliability Index)	1.75	1.79	1.83
		Reliability gets worse	

MATURITY	TOP RISK(S)	CONFIDENCE
Aspirational/ Extrapolation 1.5	1. Measure is very abstract and may not reflect individual experience 2. Outcomes subject to external factors 3. Declining reliability has to be explained and communicated	Low

Mapping of Truck Travel Time Reliability (TTTR)

A map depicting reliable and unreliable (defined here by the 1.5 threshold) TTTR scores for each roadway segment on the Interstates in CRCOG can be found in Figure 2. As shown, the region's Interstate TTTR of 1.83 is slightly higher than the state average. CRCOG Interstate segments with higher truck travel times are mostly contained within the following areas:

- I-84 from New Britain town line to Vernon town line
- I-91 from southern CRCOG border in Rocky Hill to Windsor Locks
- Most of I-291 in Windsor and South Windsor
- A small portion of I-384 in Manchester

It should be noted that independent of these measures, the *Connecticut Statewide Freight Plan* identified two truck freight "bottlenecks" within CRCOG, which include the I-84 Viaduct in Hartford and I-91 from CT 3 to Charter Oak Bridge.

Staff Recommendations

There is no feasible way for CRCOG to address bottlenecks on the Interstates independently of CTDOT, and therefore setting our own targets *and* assuming responsibility for meeting them is not currently within our organizational and financial capacity. Given that travel time reliability is an emerging practice, as well as the lack of tools currently available for predicting targets, CRCOG staff concurs with CTDOT's extrapolation method of targets setting and feels it is premature to employ a separate method on a regional basis. Understanding this, CRCOG staff recommends supporting CTDOT's 2 and 4-year targets for truck travel time reliability.

However, to further understand and develop this performance measure and associated future target setting, CRCOG staff also recommends that we work on the following initiatives:

- Update CRCOG's Congestion Management Process methodologies to align with travel time reliability performance measure methodologies, and include relevant performance target setting information
- Work towards reviewing and assuring adequate ITS infrastructure is provided on Interstates with truck travel times categorized as unreliable
- Work collaboratively with CTDOT and FHWA to research and implement truck travel time reliability methodologies and predictive capabilities
- Incorporate the Travel Time Reliability data and maps into CRCOG's Long Range Transportation Plan
- Monitor Travel Time Reliability best practices in other states and Regional Planning Organizations

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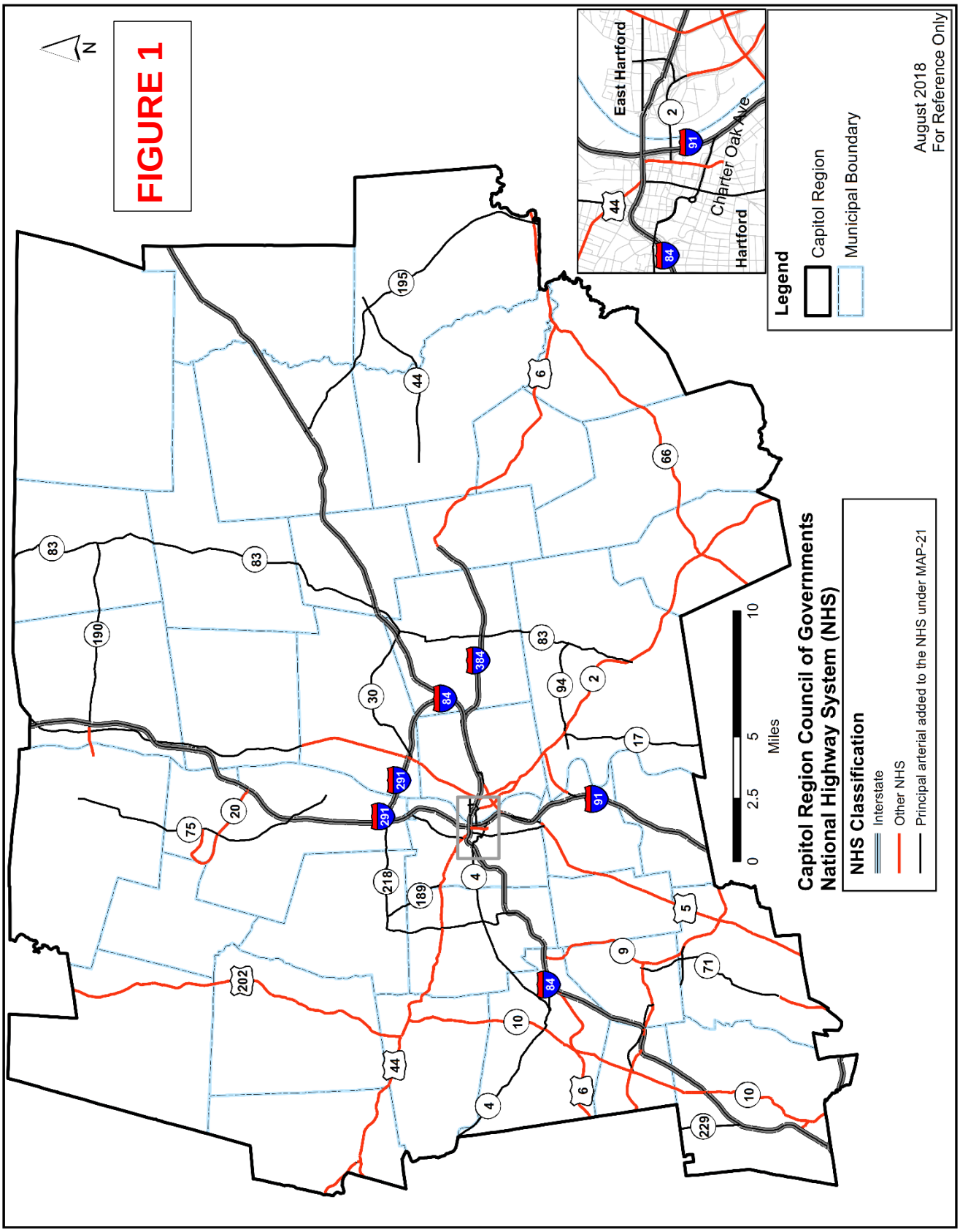
FIGURE 1
N
Capitol Region Council of Governments
National Highway System (NHS)
NHS Classification
Interstate
Other NHS
Principal arterial added to the NHS under MAP-21
0
2.5
5
10
Miles
Legend
Capitol Region
Municipal Boundary
August 2018
For Reference Only
East Hartford
Hartford
Charter Oak Ave

FIGURE 2

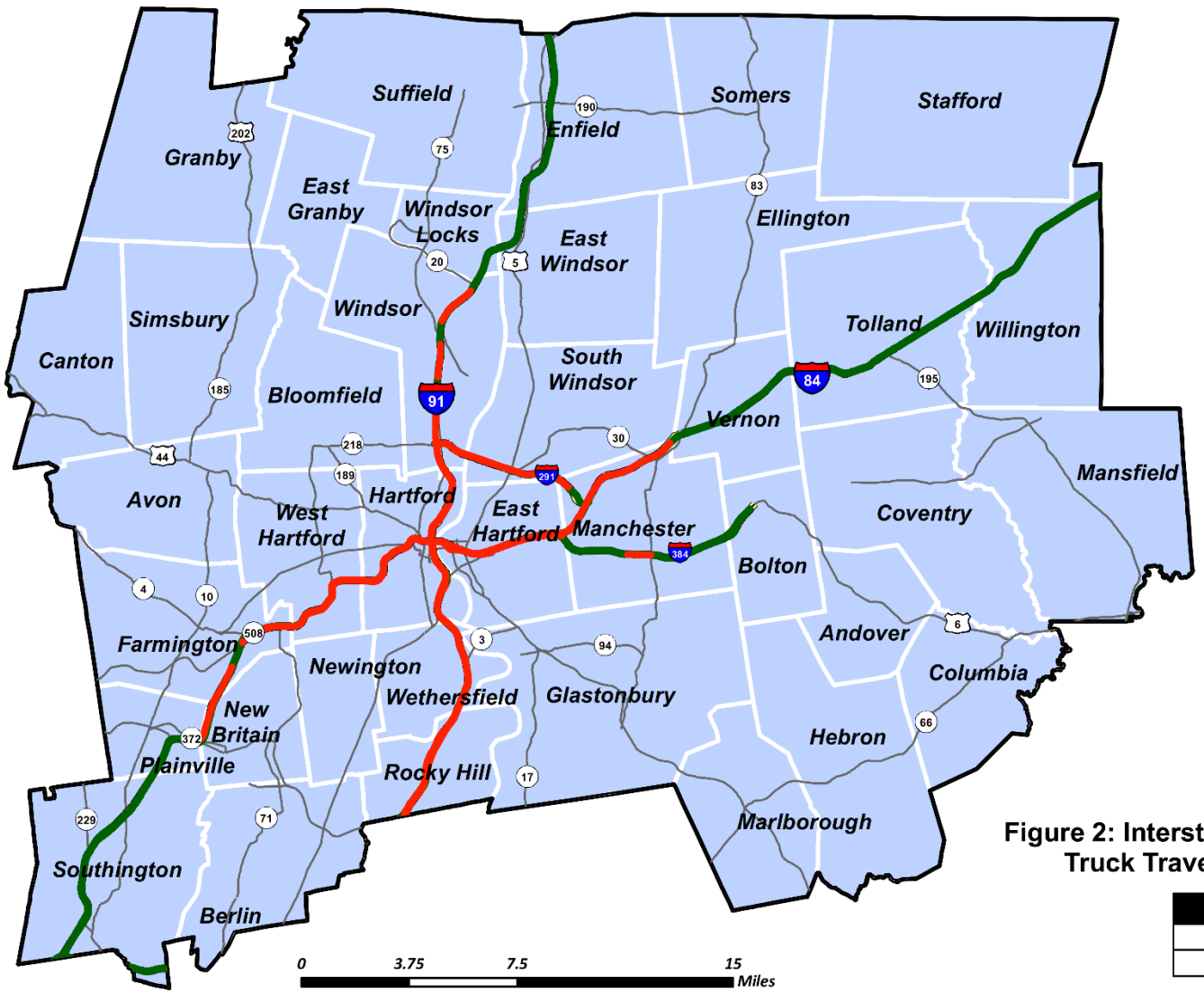

Figure 2: Interstate National Highway System (NHS) Truck Travel Time Reliability (TTTR)* Index

TTTR Index	
CRCOG	1.83
State	1.75

*Map does not identify directional travel time reliability.

TTTR results are based on internal CRCOG analysis on National Performance Management Research Data Set (NPMRDS) Freight Travel Time Data and results may vary from similar analyses from other sources.

NPMRDS data is provided by INRIX and subject to frequent updates. Gaps in the INRIX data exist and results may change as updates and refinements are made.

Legend
NHS Non-Interstate Highways

Level of TruckTravel Time Reliability (TTTR) Index Threshold
1.5 and Below
Over 1.5

Date: August 2018
Datasource: 2017 NPMRDS Travel Time Data
For Refrence Purposes Only.

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To: Transportation Committee
Cost Review and Schedule Subcommittee

From: Devon Lechtenberg, Transportation Planner
Rob Aloise, Interim Director of Transportation Planning

Date: August 24, 2018

Subject: Performance Measures and Target Setting – On-Road Mobile Source Emissions

This memorandum presents and reviews the On-Road Mobile Source Emissions Measure and the associated CTDOT Performance Measure Target, and offers potential CRCOG recommendations for review and discussion at the July Subcommittee and Transportation Committee meetings. CRCOG has until November 16, 2018 to either adopt CTDOT's target or set our own.

On-Road Mobile Source Emissions Measures

The performance measure:

- Total Emissions Reduction

To understand this measure, it is important to have the following background:

- The measure consists of the cumulative 2-year and 4-year Emissions Reductions (kg/day) for CMAQ-funded projects for nonattainment and maintenance areas.
- Covers the *criteria pollutants*: **Nitrogen Oxide** (**NOx**), **Carbon Monoxide** (**CO**), **Particulate Matter** (**PM_{10} & $PM_{2.5}$**), and **Ozone** (**O_3**), as well as *applicable precursors*: **NOx**, **CO**, **PM_{10} & $PM_{2.5}$**, and **Volatile Organic Compounds** (**VOCs**) for nonattainment and maintenance areas.
- The contribution of a given project toward emissions reduction are counted in its launch year, not subsequently.
- The emission reduction measure does not measure the actual level of pollutants in the environment. Instead, a rate of reduction (kg/day) is being measured. This rate must be at least maintained in order to continue to make progress under the rule.
- No penalty has been formulated for failure to meet an emissions reduction performance target. However, MPO's could potentially expect to receive more scrutiny in the future if targets are not met.

Staff Review of CTDOT's Target for On-Road Mobile Source Emissions

Congestion Mitigation and Air Quality (CMAQ) supported transportation projects are subject to this performance measure requirement. The Capitol Region, along with the rest of Connecticut, is classified as a non-attainment area and is therefore eligible for Federal funds for transportation projects that will help it attain the National Ambient Air Quality Standards (NAAQS). Air quality does not conform to political borders and thus pollution in one region can greatly affect the air quality in another and vice versa. The measure is calculated as the sum of the reduction of each individual criteria pollutant in kilograms per day over both a cumulative 2-year period, and a cumulative 4-year period. The analysis process is very complex, requiring access to specialized data sources and analytical tools that aid in the calculation. CTDOT has been developing these resources as well as needed expertise for some time. The rate of emission reduction improved gradually in 2013 and 2014, then saw drastic improvement in 2015 because of the CT*fastrak* launch. However, additional reductions were not as significant in

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2016 and 2017. Future CMAQ projects that contribute to additional emission reductions in the next 2-year (2018 and 2019) and 4-year (2020 and 2021) periods, are not expected to be of the same magnitude created by past projects.

Air Quality Measure

- Total Emissions Reduction
- From projects entered into the CMAQ Public Access system in previous year

Emissions Component	Current Measurements (CMAQ Public Access as of 2017)		2-year targets (2020)	4-year targets (2022)
	2-year cumulative kg/day	4-year cumulative kg/day	2-year cumulative kg/day	4-year cumulative kg/day
VOC	10.820	263.890	19.320	30.140
NOx	34.680	462.490	67.690	102.370
PM2.5	1.040	12.950	1.632	2.674

MATURITY	TOP RISK(S)	CONFIDENCE
Extrapolation Level 2	1. Qualitative benefits are not captured in measure 2. Given program priorities, quantifiable benefits may appear low with respect to other agencies	Moderate

Staff Recommendations

Given the complexity and resource demands of developing measures and targets for emissions reduction, considerable expertise and experience needed, CRCOG staff feel it is premature to employ a separate method on a regional basis. Understanding this, CRCOG staff recommends supporting CTDOT's 2 and 4-year targets for On-Road Mobile Source Emissions.

However, to further understand and develop this performance measure and associated future target setting, CRCOG staff also recommends that we work on the following initiatives:

- Being aware of the environmental benefits in terms of emission reductions that CMAQ transportation projects in our region can produce.
- Developing staff understanding and competency in assessing emission's data.
- Incorporating consideration of On-Road Mobile Source Emissions Measure and maps into CRCOG's Long Range Transportation Plan
- Monitoring applicable best practices in other states and Regional Planning Organizations

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To: Transportation Committee
Cost Review and Schedule Subcommittee

From: Devon Lechtenberg, Transportation Planner
Rob Aloise, Acting Director of Transportation Planning

Date: October 5, 2018

Subject: Discussion of Performance Targets

At the September 5, 2018 Transportation Committee and Cost Sub-Committee meetings, the committees discussed staff's recommendation to support CTDOT's performance measure targets for NHS performance, Freight performance, and On-Road Mobile Source Emissions. The committee proposed and carried a motion to postpone supporting performance targets set by CTDOT until more information was available regarding the resulting implications.

CRCOG staff contacted representatives from the FHWA and CTDOT shortly after the September 5th committee meetings. A meeting between CRCOG, FHWA, and CTDOT was held on September 24th, 2018 where staff could discuss the consequences of supporting performance targets. The main outcomes were as follows:

- There are no penalties for failing to attain a set target for the NHS performance, Freight performance, and On-Road Mobile Source Emissions Reduction. However, if a target is not met, actions must be developed towards rectifying the gap in performance.

- If an MPO supports a state's target, the state bares the primary responsibility for meeting performance targets. An MPO's support should be reflected in its plans and project selection, where applicable. Far more responsibility is assigned to an MPO if it sets its own targets. However, setting an MPO target triggers significant reporting requirements which CRCOG currently does not have the resources to support.

- If an MPO neither sets its own targets nor adopts the state's, it will be deemed non-compliant by the FHWA in its planning process. This noted deficiency would linger in subsequent evaluations of the MPO's activities, such as an MPO Certification Review. In this initial stage of performance target setting, participating in the performance based-planning process is more important than meeting targets.

In light of the abovementioned discussions, CRCOG staff recommends the committee take action on supporting the state's targets for System Reliability of the NHS, Freight, and On-Road Mobile Source Emissions. Please refer to the attached resolution for Policy Board consideration as well as the associated memorandums previous issued.

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RESOLUTION REGARDING ***TARGETS FOR TEN PERFORMANCE MEASURES ESTABLISHED BY CTDOT***

WHEREAS, the Capitol Region Council of Governments (CRCOG) has been designated by the Governor of the State of Connecticut as the Metropolitan Planning Organization responsible, together with the State, for the comprehensive, continuing, and cooperative transportation planning process for the Capitol Region; and

WHEREAS, the National Performance Management Measures final rule (23 CFR Part 490) requires States to set targets for ten performance measures by May 20, 2018, and

WHEREAS, the Connecticut Department of Transportation (CTDOT) has established targets for four pavement performance measures for:
(1) Percentage of Pavements on the Interstate System in Good condition,
(2) Percentage of Pavements on the Interstate System in Poor condition,
(3) Percentage of Pavements on the non-Interstate NHS in Good condition,
(4) Percentage of Pavements on the non-Interstate NHS in Poor condition,
(5) Percentage of NHS Bridges classified as in Good Condition (by deck area),
(6) Percentage of NHS Bridges classified as in Poor Condition (by deck area),
(7) Percentage of Person-miles traveled on the Interstate System that are reliable,
(8) Percentage of Person-miles traveled on the non-Interstate System that are reliable,
(9) Truck Travel Time Reliability Index,
(10) Total Emissions Reduction,

WHEREAS, the CTDOT generally discussed performance measures with the 8 Metropolitan Planning Organizations (MPOs) in Connecticut at the March 27 and May 8 RPO coordination meetings as well as on other occasions during the course of this new Federal mandate,

WHEREAS, the CTDOT has officially adopted the ten targets in the State Long Range Transportation Plan in March 2018,

WHEREAS, the CRCOG may establish performance targets by agreeing to plan and program projects that contribute toward the accomplishment of the aforementioned State's targets, or establish its own target within 180 days of the State establishing and reporting its performance targets,

NOW THEREFORE, BE IT RESOLVED, that the MPO Policy Board has agreed to support CTDOT's 2018 targets for the ten performance targets as previously discussed and endorsed, and

BE IT FURTHER RESOLVED, that the MPO Policy Board will plan and program projects that contribute to the accomplishment of said targets.

CERTIFICATE: The undersigned duly qualified CRCOG Board Member certifies that the foregoing is a true and correct copy of a resolution adopted by the voting members of the CRCOG on September 5, 2018.

_____
Lori L. Spielman, Secretary
Capitol Region Council of Governments

_____
Date

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Part 4:
FTA Performance Measures and Targets

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FEDERAL TRANSIT ADMINISTRATION

TAM Performance Measures

Background

In 2012, MAP-21 mandated FTA to develop a rule establishing a strategic and systematic process of operating, maintaining, and improving public capital assets effectively through their entire life cycle. The TAM Final Rule 49 USC 625 became effective Oct. 1, 2016 and established four performance measures. The performance management requirements outlined in 49 USC 625 Subpart D are a minimum standard for transit operators. Providers with more data and sophisticated analysis expertise are allowed to add performance measures and utilize those advanced techniques in addition to the required national performance measures.

Performance Measures

Rolling Stock: The percentage of revenue vehicles (by type) that exceed the useful life benchmark (ULB).

Equipment: The percentage of non-revenue service vehicles (by type) that exceed the ULB.

Facilities: The percentage of facilities (by group) that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale.

Infrastructure: The percentage of track segments (by mode) that have performance restrictions. Track segments are measured to the nearest 0.01 of a mile.

TRANSIT ASSET MANAGEMENT

Data To Be Reported - Optional Report Year 2017, Mandatory Report Year 2018

Rolling Stock: The National Transit Database (NTD) lists 23 types of rolling stock, including bus and rail modes. Targets are set for each mode an agency, or Group Plan Sponsor, has in its inventory.

FTA default ULB or Agency customized ULB: Default ULBs represent maximum useful life based on the TERM model. Agencies can choose to customize based on analysis of their data OR they can use the FTA provided default ULBs.

Equipment: Only 3 classes of non-revenue service vehicles are collected and used for target setting: 1) automobiles, 2) other rubber tire vehicles, and 3) other steel wheel vehicles.

Facilities: Four types of facilities are reported to NTD. Only 2 groups are used for target setting 1) Administrative and Maintenance and 2) Passenger and Parking.

Infrastructure: The NTD lists 9 types of rail modes; the NTD collects data by mode for track and other infrastructure assets.

BRT and Ferry are NTD fixed guideway modes but are not included in TAM targets.

TAM Performance Metrics: The NTD collects current year performance data. The NTD will collect additional Asset Inventory Module (AIM) data but targets forecast performance measures in the next fiscal year.

TAM Narrative Report: The TAM Rule requires agencies to submit this report to the NTD annually. The report describes conditions in the prior year that led to target attainment status.

www.transit.dot.gov/TAM/ULBcheatsheet

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TERM Scale: Facility condition assessments reported to the NTD have one overall TERM rating per facility. Agencies are not required to use TERM model for conducting condition assessment but must report the facility condition assessment as a TERM rating score.

TERM Rating	Condition	Description
Excellent	4.8–5.0	No visible defects, near-new condition.
Good	4.0–4.7	Some slightly defective or deteriorated components.
Adequate	3.0–3.9	Moderately defective or deteriorated components.
Marginal	2.0–2.9	Defective or deteriorated components in need of replacement.
Poor	1.0–1.9	Seriously damaged components in need of immediate repair.

What You Need to Know About Establishing Targets

Include:
- Only those assets for which you have direct capital responsibility.
- Only asset types specifically referenced in performance measure.

Group Plans:
- Only one unified target per performance measure type.
- Sponsors may choose to develop more than one Group Plan.

MPOs:
- MPOs must establish targets specific to the MPO planning area for the same performance measures for all public transit providers in the MPO planning area within 180 days of when the transit provider establishes its targets.
- Opportunity to collaborate with transit providers.

Example Target Calculations

Rolling Stock and Equipment: Each target is based on the agency's fleet and age. Agencies set only one target per mode/class/asset type. If an agency has multiple fleets in one asset type (see example BU and CU) of different service age, it must combine those fleets to calculate the performance metric percentage of asset type that exceeds ULB and to set the following fiscal year's target. The performance metric calculation does not include emergency contingency vehicles.

Asset Category	*Vehicle Class/Type*	*Fleet Size*	*Vehicle age*	*default ULB*	*FY 16 Performance Metric (% Exceeding ULB)*	*FY17 Target*
Rolling Stock	Over the road bus (BU)	10	5	14 years	0%	60%
		15	13	14 years		
	Cutaway bus (CU)	19	8	10 years	21%	21%
		5	12	10 years		
	Mini Van (MV)	5	5	8 years	0%	0%
	Van (VN)	1	10	8 years	67%	67%
		2	5	8 years		
Equipment	Auto (AO)	5	4	8 years	0%	0%

This example assumes no new vehicle purchases in the calculation of targets for FY17, therefore the FY17 target for over the road bus (BU) increases due to the second fleet vehicles aging another year and exceeding the default ULB. If an agency is more conservative, then it might set higher value targets. If an agency is more ambitious or expects funding to purchase new vehicles, then it might set lower value targets.

There is no penalty for missing a target and there is no reward for attaining a target. Targets are reported to the NTD annually on the A-90 form. The fleet information entered in the inventory forms will automatically populate the A-90 form with the range of types, classes, and modes associated with the modes reported.

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To:	CRCOG Transportation Committee, acting as CRCOG Policy Board
From:	Cara Radzins, Principal Transit Planner
C:	CRCOG Policy Board Jennifer Carrier, Director of Transportation
Date:	June 16, 2017
Subject:	FTA State of Good Repair Performance Targets – Resolution of Support

In 2012, MAP-21 mandated that the Federal Transit Administration (FTA) develop a rule establishing a strategic and systematic approach to Transit Asset Management (TAM). The purpose of TAM is to "monitor and manage public transportation capital assets to enhance safety, reduce maintenance costs, increase reliability, and improve performance." The TAM Final Rule (49 CFR 625) became effective October 1, 2016 and requires that transit providers develop a TAM Plan by October 1, 2018. Tier I transit providers must each develop an individual TAM Plan, whereas Tier II providers may participate in a group plan facilitated by the State. Provider tiers are defined as follows:

- Tier I: A provider that owns, operates, or manages either (a) 101 or more vehicles in revenue service during peak regular service across all fixed route modes or in any one non-fixed route mode, or (b) rail transit
- Tier II: A provider that owns, operates, or manages (a) 100 or fewer vehicles in revenue service during peak regular service across all non-rail fixed route modes or in any one non-fixed route mode, (b) a subrecipient under the 5311 Rural Area Formula Program, or (c) any American Indian tribe

The Connecticut Department of Transportation (CTDOT) will be preparing a Tier I TAM Plan for the rail, bus, and ferry transit it provides. Within the CRCOG Region, this includes CT***transit*** Hartford Division (HNS Management) and the Rocky Hill/Glastonbury Ferry. CTDOT will also develop a group Tier II TAM Plan, which will include the Windham Regional Transit District. The Greater Hartford Transit District (GHTD) is classified as a Tier I provider and will therefore be responsible for preparing an individual TAM Plan.

As a first step towards developing these TAM Plans, transit providers must establish State of Good Repair targets for the following four performance measures:

- Rolling Stock: The percentage of revenue vehicles (by type) that exceed the useful life benchmark (ULB)
- Equipment: The percentage of non-revenue service vehicles (by type) that exceed the ULB
- Facilities: The percentage of facilities (by group) that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale
- Infrastructure: The percentage of track segments (rail fixed-guideway only) that have performance restrictions

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To this end, CTDOT has developed State of Good Repair Performance Targets for both Tier I and Tier II providers. The current performance (December 2016), anticipated performance by the end of FY2017[1], and the performance target for each of the above performance measures is summarized in the tables on pages 3 and 4 of this memorandum. Additional supporting documentation is attached to this memo. Although GHTD will not be included in CTDOT's TAM Plans, GHTD assisted CTDOT with the target setting process. As such, GHTD targets, which are included on page 5 of this memo, match the Tier I targets being used by CTDOT.

Transit providers will be required to report the above performance measures to the National Transit Database (NTD) each state fiscal year, beginning with FY2018. For providers in Connecticut, this means an initial reporting deadline of October 1, 2018 for the period of July 1, 2017 to June 30, 2018, with October 1st reporting deadlines thereafter for the preceding fiscal year. Performance targets must also be reassessed each fiscal year. It is the expectation that transit providers use the performance measure data to inform their capital planning and to improve their decision making, but it is important to note that **there is neither a reward for target attainment nor a penalty for target non-attainment**. Because of this, FTA encourages transit providers to be aggressive when setting targets, both to support making the case for additional funds to meet state of good repair goals and to encourage finding innovative ways to use existing funding levels to meet state of good repair goals.

The TAM Rule further requires that Metropolitan Planning Organizations (MPOs) establish regional performance targets relating to State of Good Repair no later than July 1, 2017. Such targets should, at a minimum, be complementary to those of the transit operators, and MPOs can opt to endorse providers' targets as those for the region.

Staff Recommendation:

It is the recommendation of CRCOG Staff that the CRCOG Transportation Committee, on behalf of the CRCOG Policy Board, pass a resolution of support endorsing CTDOT's State of Good Repair Performance Targets as the regional performance targets for the MPO. To ensure that the MPO stays informed and is given opportunities for input on future matters relating to Transit Asset Management within the Region, we further recommend that our transit representatives from CTDOT and GHTD keep the Policy Board updated on development of their TAM Plans, progress towards their performance targets, and annual reassessment of these targets.

Attachments:

- Draft Resolution of Support
- CTDOT State of Good Repair Performance Measures Target Summary: Tier I
- CTDOT State of Good Repair Performance Measures Target Summary: Tier II

[1] The forecasted performance for the end of FY2017 assumes a continuation of current business practices and funding levels.

Target Summary:	Metro North, Shore Line East, CT Transit (HNS), Nason, Collins, Northeast Transportation, New Britain Transportation, Dattco

Revenue Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Articulated Bus	ULB	51 Vehicles	0%	**0%**	14%
Bus	ULB	477 Vehicles	46%	**18%**	14%
Cutaway Bus	ULB	43 Vehicles	2%	**2%**	17%
BR Over-The-road bus	ULB	48 Vehicles	15%	**0%**	14%
Commuter Rail Locomotive	ULB	30 Vehicles	40%	**40%**	0%
Commuter Rail Passenger Coach	ULB	84 Vehicles	0%	**0%**	0%
Commuter Rail Self Propelled Passenger Car	ULB	310 Vehicles	12%	**12%**	0%
Ferry Boats	ULB	3 Vehicles	100%	**100%**	0%

Service Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Rubber and Tire Vehicles	ULB	48 Vehicles	29%	**29%**	7%
Automobiles	ULB	11 Vehicles	46%	**0%**	20%
Sport Utility Vehicle	ULB	26 Vehicles	62%	**0%**	20%
Steel Wheel Vehicles	ULB	40 Vehicles	100%	**100%**	0%

Guideway Infrastructure Total ***Goal:*** *Maintain All Transit Guideway Assets in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Commuter Rail Guideway	% Restricted	~240 Track Miles	6%	**5%**	2%

Facilities Classes Total ***Goal:*** *Maintain all Facilities in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Passenger and Parking	TERM (1-5)	46 Facilities	2%	**0%**	0%
Admin and Maintenance	TERM (1-5)	25 Facilities	4%	**4%**	0%

Target Summary:	Greater Bridgeport, Middletown, Milford, Southeast, Northwestern, Northeastern, Greater New Haven, Windham, Estuary, Valley, Norwalk, Housatonic Area Transit

Revenue Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Trolley	ULB	1 Vehicle	0%	**0%**	7%
Bus	ULB	184 Vehicles	43%	**15%**	14%
Cutaway Bus	ULB	286 Vehicles	41%	**16%**	17%
Minivan	ULB	5 Vehicles	0%	**0%**	17%

Service Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Rubber and Tire Vehicles	ULB	23 Vehicles	26%	**26%**	7%
Automobiles	ULB	9 Vehicles	56%	**56%**	20%
Van	ULB	3 Vehicles	67%	**67%**	17%
Minivan	ULB	2 Vehicles	0%	**0%**	17%
Sport Utility Vehicle	ULB	15 Vehicles	87%	**60%**	20%

Facilities Classes Total ***Goal:*** *Maintain all Facilities in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Passenger and Parking	TERM (1-5)	4 Facilities	0%	**0%**	0%
Admin and Maintenance	TERM (1-5)	11 Facilities	0%	**0%**	0%

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Target Summary:	Greater Hartford Transit District

Revenue Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Cutaway Bus	ULB	157	24%	**2%**	17%

Service Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Rubber and Tire Vehicles	ULB	5	40%	**40%**	7%
Automobiles	ULB	3	67%	**67%**	20%
Sport Utility Vehicle	ULB	4	25%	**25%**	20%

Facilities Classes Total ***Goal:*** *Maintain all Facilities in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Passenger and Parking	TERM (1-5)	2	0%	**0%**	0%
Admin and Maintenance	TERM (1-5)	2	0%	**0%**	0%

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AUTHORIZING RESOLUTION

FOR ENDORSEMENT OF THE STATE OF GOOD REPAIR PERFORMANCE TARGETS SET BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION

WHEREAS, the Federal Transit Administration (FTA) and FTA regulations governing federal transportation assistance prescribe new requirements for Metropolitan Planning Organizations (MPOs) to coordinate with transit providers, set performance targets, and integrate those performance targets and performance plans into their planning documents. As per 23 CFR 450.324 and 23 CFR 450.326, MPOs are required to reference performance targets and performance-based planning into their Transportation Improvement Programs (TIPs) and Metropolitan Transportation Plans by October 2018; and

WHEREAS, FTA established four State of Good Repair (SGR) Performance Measures in asset categories of Rolling Stock, Equipment, Facilities, and Infrastructure. The SGR Performance Targets for these measures were set by the Connecticut Department of Transportation (CTDOT) in coordination with the transit providers, including Metro-North Railroad, CT***transit***, and all the rural and urban Transit Districts to comply with a January 1, 2017 deadline; and

WHEREAS, each MPO is required to establish SGR performance targets for each FTA Performance Measure and for each asset class offered within the metropolitan planning area, as per 23 CFR 450.306 (d)(3), 180 days after the transit providers have set their respective performance targets, or by July 1, 2017; and

WHEREAS, the SGR Performance Measure Targets set by CTDOT have been reviewed by the Policy Board of the Capitol Region Council of Governments and align with regional goals for transit asset management;

NOW THEREFORE BE IT RESOLVED THAT, the Capitol Region Council of Governments does herby endorse the State of Good Repair Performance Measure Targets established by the Connecticut Department of Transportation as the regional performance targets for the MPO.

CERTIFICATE

I certify the above is a true copy of a resolution adopted by the Transportation Committee, acting on behalf of the Policy Board, at its meeting held on June 26, 2017.

BY: _____ DATE: _____

Lisa Heavner, CRCOG Secretary

FTA State of Good Repair Performance Measures Target Summary

Tier I

Commuter Rail, CT Transit, Ferry

Bureau of Public Transportation

Asset Management Unit

12/22/2016

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TIER I

Rail

Metro North - New Haven Line
Amtrak - Shore Line East

Bus

HNS - CT Transit *(Hartford, New Haven, Stamford)*
Nason - CT Transit *(Torrington)*
Collins - CT Transit *(Hartford)*
Northeast Transportation - CT Transit *(Waterbury, Meriden, Wallingford)*
New Britain Transportation - CT Transit *(New Britain)*
Dattco - CT Transit *(Bristol)*

Ferry

CTDOT - Rocky Hill/Glastonbury
CTDOT - Chester/Hadlyme

Asset Categories	Page No.
Revenue Vehicles	3
Service Vehicles	11
Guideway Infrastructure	15
Facilities	16

Asset Category: Revenue Vehicles - Tier I

Asset Class: Bus

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 46%

Forecast for End of SFY 17: *18%*

Business Practice / Target: **14%**

Useful Life Benchmark: 12 years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. Consistency of federal funds
2. Available state funding
3. Waiting period for the availability of bus procurement contracts varies

Comments:

1. Replace vehicles at the 12 year custom Useful Life Benchmark
2. Utilize a business practice to align all Connecticut Transit Providers on a 12 year bus replacement program.

Number of Vehicles
477

Average Fleet Age
9.49

Total # Past ULB
218

Total # Scheduled to be Replaced
130

Asset Category: Revenue Vehicles - Tier I

Asset Class: Articulated Bus

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 0%

Forecast for End of SFY 17: 0%

Business Practice / Target: 14%

Useful Life Benchmark: 12 years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

3 Waiting period for the availability of bus procurement contracts varies

Comments:

1 Replace vehicles at the 12 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 12 year bus replacement program.

Number of Vehicles
51

Average Fleet Age
4.55

Total # Past ULB
0

Total # Scheduled to be Replaced
0

Asset Category: Revenue Vehicles - Tier I

Asset Class: Cutaway Bus

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 2%

Forecast for End of SFY 17: *2%*

Business Practice / Target: **17%**

Useful Life Benchmark: 5 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

3 Waiting period for the availability of bus procurement contracts varies

Comments:

1 Replace vehicles at the 5 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 5 year bus replacement program.

Number of Vehicles
43

Average Fleet Age
4.2

Total # Past ULB
1

Total # Scheduled to be Replaced
0

Asset Category: Revenue Vehicles - Tier I

Asset Class: BR Over the Road Bus

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 15%

Forecast for End of SFY 17: 0%

Business Practice / Target: 14%

Useful Life Benchmark: 12 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

3 Waiting period for the availability of bus procurement contracts varies

Comments:

1 Replace vehicles at the 12 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 12 year bus replacement program.

Number of Vehicles
48

Average Fleet Age
6.19

Total # Past ULB
7

Total # Scheduled to be Replaced
7

Asset Category: Revenue Vehicles - Tier I

Asset Class: Commuter Rail Locomotive *(Diesel)*

Mode: Rail

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 40%

Forecast for End of SFY 17: *40%*

Business Practice / Target: **0%**

Useful Life Benchmark: 39 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. Metro North Capital Plan does not anticipate replacement of Locomotives until 2020 at earliest
2. Consistency of federal funds
3. Available state funding

Comments:

1. Work on programming replacement of locomotives to CTDOT Capital Plan
2. Combination of Metro North and Shore Line East locomotives
3. This ULB needs to be revisited to determine if it has met CTDOT Practices

Number of Vehicles
30

Average Fleet Age
35

Total # Past ULB
12

Total # Scheduled to be Replaced
0

Asset Category: Revenue Vehicles - Tier I

Asset Class: Commuter Rail Passenger Coaches *(Push/Pull Coaches)* Mode: Rail

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 0%

Forecast for End of SFY 17: 0%

Business Practice / Target: 0%

Useful Life Benchmark: 39 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. Asset Condition may cause vehicles to need replacement prior to ULB of 39 years, as they have exceeded the 25 year minimum for Grant Application per FTA
2. Consistency of federal funds
3. Available state funding

Comments:

1. Passenger Coaches are all within FTA's Recommended ULB. This ULB needs to be revisited to determine if it has met CTDOT Practices
2. Continue to evaluate the asset performance, to determine need for replacement
3. Combination of Metro North and Shore Line East Passenger Coaches

Number of Vehicles
84

Average Fleet Age
24

Total # Past ULB
0

Total # Scheduled to be Replaced
0

Asset Category: Revenue Vehicles - Tier I

Asset Class: Commuter Rail Self Propelled Passenger Cars *(EMU)* **Mode:** Rail

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 12%

Forecast for End of SFY 17: *12%*

Business Practice / Target: **0%**

Useful Life Benchmark: 39 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. M2's will not be removed by end of State FY 17, and are expected to be used daily in that time frame
2. Consistency of federal funds
3. Available state funding

Number of Vehicles
310

Average Fleet Age
8

Total # Past ULB
36

Total # Scheduled to be Replaced
0

Comments:

1. New Haven Line Vehicles are comprised mostly of new M8 fleet put in service within the last 5 years
2. M4's and M6's have been taken fully of out of service, but are kept as part of Tax Advantage Leasing. Does not need to be reflected in inventory
3. M2's will be taken out of service after full installation of Positive Train Control, expected to be complete in 2018

Asset Category: Revenue Vehicles - Tier I

Asset Class: Ferry Boat

Mode: Ferry

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 100%

Forecast for End of SFY 17: 100%

Business Practice / Target: 0%

Useful Life Benchmark: 42 years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funds

3 Other public transit modes supercede ferry investment

Comments:

1 Assess the replacement needs to align more with the FTA recommended ULB

2 CTDOT Ferry modes are used mainly for tourism purposes

3 Ferry boats are inpsected by US Coast Guard to ensure its operating in a State of Good Repair

Number of Vehicles
3

Average Fleet Age
62.3

Total # Past ULB
3

Total # Scheduled to be Replaced
0

Asset Category: Service Vehicles - Tier I

Asset Class: Trucks and Rubber Tire Vehicles

Mode: Bus, Rail, and Ferry

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 30%

Forecast for End of SFY 17: *30%*

Business Practice / Target: **7%**

Useful Life Benchmark: 14 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 No immediate plans to replace service vehicles way beyond the ULB

Comments:

1 Assess the replacement needs to align more with the ULB

2 2 of the 46 Vehicles are used for New Haven Line

3 There is an open grant application to replace vehicles of this asset class at CTDOT's discretion

Number of Vehicles
46

Average Fleet Age
9.23

Total # Past ULB
14

Total # Scheduled to be Replaced
0

Asset Category: Service Vehicles - Tier I

Asset Class: Automobiles

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 46%

Forecast for End of SFY 17: *0%*

Business Practice / Target: **20%**

Useful Life Benchmark: 4 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

Comments:

1 Replace vehicles at the 4 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 4 year service vehicle replacement program.

Number of Vehicles
11

Average Fleet Age
4.45

Total # Past ULB
5

Total # Scheduled to be Replaced
5

Asset Category: Service Vehicles - Tier I

Asset Class: Sport Utility Vehicle

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 62%

Forecast for End of SFY 17: *0%*

Business Practice / Target: **20%**

Useful Life Benchmark: 4 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

Comments:

1 Replace vehicles at the 4 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 4 year service vehicle replacement program.

Number of Vehicles
26

Average Fleet Age
3.62

Total # Past ULB
16

Total # Scheduled to be Replaced
16

Asset Category: Service Vehicles - Tier I

Asset Class: Steel Wheel Vehicles

Mode: Rail

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 100%

Forecast for End of SFY 17: 100%

Business Practice / Target: 0%

Useful Life Benchmark: 25 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. Uncertainty as to where MNR's plan impacts CTDOT owned Steel Wheel Vehicles
2. Low priority replacements
3. Vehicles are operated in both Connecticut and New York which would require collaboration on investment decisions with Metro North

Comments:

1. Metro North has mentioned a Steel Wheel Vehicle Replacement Program
2. Coordinate between Capital Office and Office of Rail the replacement needs of these vehicles
3. Determine what funds can be used to replace these vehicles

Number of Vehicles
40

Average Fleet Age
38.7

Total # Past ULB
40

Total # obligated for Year
0

Asset Category: Guideway Infrastructure - Tier I

Asset Class: Commuter Rail Guideway

Mode: Rail

CTDOT GOAL: **Maintain All Transit Guideway Assets in a State of Good Repair**

KPI: Percentage of Asset Class that is under a Performance Restriction

Current Percentage: 6%

Forecast for End of SFY 17: *5%*

Business Practice / Target: **2%**

Performance Restriction: # of Slow Zone Miles

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. Some slow zones are long term (will keep percentage static)
2. Need to account for temporary slow zones related to preventative maintenance, inspection, and construction
3. Percentage would be a function of the budget for track replacement/repairs

Number of Track Miles
~240

Slow Zone Miles
13.88

Performance Restriction %
5.73

Comments:

1. Further analyze projected slow zones
2. Analyze data to calibrate next years target
3. Need an expansion of C program to address mud spots, tie replacements, and drainage concerns to alleviate need for slow zones

Asset Category: Facilities - Tier I

Asset Class: Passenger and Parking Facilities

Mode: Bus and Rail

CTDOT GOAL: **Maintain all Facilities in a State of Good Repair**

KPI: Percentage of Asset Class that is below a 3 on the TERM Scale for SGR Condition

Current Percentage: 2%

Forecast for End of SFY 17: 0%

Business Practice / Target: 0%

TERM Scale Ratings: 1-5

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. No formal condition rating process currently in place to accurately establish condition
2. No formal Maintenance Management System in place to respond efficiently to SGR deficiencies
3. Target was set only based on institutional knowledge that critical issues are dealt with promptly

Number of Facilities
46

Facilities Ranked Below 3
1

% Ranked Below 3
2

Comments:

1. Address the need to perform condition assessments to determine an asset rating to better reflect SGR of our facilities to determine an appropriate target
2. Work with property managers to enhance data collection to better address deficiencies
3. Inventory is comprised of 45 rail facility assets and 1 bus facility asset

Asset Category: Facilities - Tier I

Asset Class: Administrative and Maintenance Facilities **Mode:** Bus, Rail, and Ferry

CTDOT GOAL: **Maintain all Facilities in a State of Good Repair**

KPI: Percentage of Asset Class that is below a 3 on the TERM Scale for SGR Condition

Current Percentage: 4%

Forecast for End of SFY 17: *4%*

Business Practice / Target: **0%**

TERM Scale Ratings: 1-5

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. No formal condition rating process currently in place to accurately establish condition
2. No formal Maintenance Management System in place to respond efficiently to SGR deficiencies
3. Target was set only based on institutional knowledge that critical issues are dealt with promptly

Number of Facilities
25**

Facilities Ranked Below 3
1

% Ranked Below 3
4%

Comments:

1. Address the need to perform condition assessments to determine an asset rating to better reflect SGR of our facilities to determine an appropriate target
2. Need to finalize inventory to determine if certain buildings should be considered facilities
3. Work with property managers to enhance data collection to better address deficiencies

***Number was based on treating each separate facility structure in rail yards as an asset as opposed to each campus being an asset*

Target Summary:	Metro North, Shore Line East, CT Transit (HNS), Nason, Collins, Northeast Transportation, New Britain Transportation, Dattco

Revenue Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Articulated Bus	ULB	51 Vehicles	0%	**0%**	14%
Bus	ULB	477 Vehicles	46%	**18%**	14%
Cutaway Bus	ULB	43 Vehicles	2%	**2%**	17%
BR Over-The-road bus	ULB	48 Vehicles	15%	**0%**	14%
Commuter Rail Locomotive	ULB	30 Vehicles	40%	**40%**	0%
Commuter Rail Passenger Coach	ULB	84 Vehicles	0%	**0%**	0%
Commuter Rail Self Propelled Passenger Car	ULB	310 Vehicles	12%	**12%**	0%
Ferry Boats	ULB	3 Vehicles	100%	**100%**	0%

Service Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Rubber and Tire Vehicles	ULB	48 Vehicles	29%	**29%**	7%
Automobiles	ULB	11 Vehicles	46%	**0%**	20%
Sport Utility Vehicle	ULB	26 Vehicles	62%	**0%**	20%
Steel Wheel Vehicles	ULB	40 Vehicles	100%	**100%**	0%

Guideway Infrastructure Total ***Goal:*** *Maintain All Transit Guideway Assets in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Commuter Rail Guideway	% Restricted	~240 Track Miles	6%	**5%**	2%

Facilities Classes Total ***Goal:*** *Maintain all Facilities in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Passenger and Parking	TERM (1-5)	46 Facilities	2%	**0%**	0%
Admin and Maintenance	TERM (1-5)	25 Facilities	4%	**4%**	0%

FTA State of Good Repair Performance Measures Target Summary

Tier II

Transit Providers

Bureau of Public Transportation

Asset Management Unit

12/15/2016

85

TIER II

Urban Transit Providers

Greater Bridgeport Transit (GBT)
Middletown Area Transit (MAT)
Milford (MTD)
Southeast Area Transit (SEAT)
Estuary Transit District (ETD)
Valley Transit District (VTD)
Norwalk Transit District (NTD)
Housatonic Area Transit (HART)
Greater New Haven Transit District (GNHTD)

Rural Transit Providers

Northwestern Transit District (NWCTD)
Northeastern Transit District (NECTD)
Windham Transit District (WRTD)

Asset Categories

	Page No.
Revenue Vehicles	4
Service Vehicles	8
Facilities	13

Asset Category: Revenue Vehicles - Tier II

Asset Class: Bus

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 43%

Forecast for End of SFY 17: *15%*

Business Practice / Target: **14%**

Useful Life Benchmark: 12 years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers

1 Consistency of federal funds

2 Available state funds

3 Waiting period for the availability of bus procurement contracts varies

Comments:

1 Replace vehicles at the 12 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers

Number of Vehicles
184

Average Fleet Age
8.85

Total # Past ULB
79

Total # Scheduled to be Replaced
51

Asset Category: Revenue Vehicles - Tier II

Asset Class: Minivans

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 0%

Forecast for End of SFY 17: 0%

Business Practice / Target: 17%

Useful Life Benchmark: 5 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. Consistency of federal funds
2. Available state funds
3. Waiting period for the availability of bus procurement contracts varies

Comments:

1. Replace vehicles at the 5 year custom Useful Life Benchmark
2. Utilize a business practice to align all Connecticut Transit Providers on a 5 year bus replacement program.

Number of Vehicles
5

Average Fleet Age
0

Total # Past ULB
0

Total # Scheduled to be Replaced
0

Asset Category: Revenue Vehicles - Tier II

Asset Class: Cutaway Bus

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 41%

Forecast for End of SFY 17: *16%*

Business Practice / Target: **17%**

Useful Life Benchmark: 5 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funds

3 Waiting period for the availability of bus procurement contracts varies

Comments:

1 Replace vehicles at the 5 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 5 year bus replacement program.

Number of Vehicles
286

Average Fleet Age
4.23

Total # Past ULB
118

Total # Scheduled to be Replaced
71

Asset Category: Revenue Vehicles - Tier II

Asset Class: Trolley

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 0%

Forecast for End of SFY 17: 0%

Business Practice / Target: 7%

Useful Life Benchmark: 13 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

3 Waiting period for the availability of bus procurement contracts varies

Comments:

1 Replace vehicles at the 13 year Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 13 year bus replacement program.

Number of Vehicles
1

Average Fleet Age
2

Total # Past ULB
0

Total # Scheduled to be Replaced
0

Asset Category: Service Vehicles - Tier II

Asset Class: Trucks and Rubber Vehicles

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 26%

Forecast for End of SFY 17: *26%*

Business Practice / Target: **7%**

Useful Life Benchmark: 14 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 No immediate plans to replace service vehicles way beyond the Useful Life Benchmark

Comments:

1 Assess the replacement needs to align more with the Useful Life Benchmark

Number of Vehicles
23

Average Fleet Age
8

Total # Past ULB
6

Total # Scheduled to be Replaced
0

Asset Category: Service Vehicles - Tier II

Asset Class: Automobiles

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 56%

Forecast for End of SFY 17: *56%*

Business Practice / Target: **20%**

Useful Life Benchmark: 4 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

Comments:

1 Replace vehicles at the 4 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 4 year service vehicle replacement program.

Number of Vehicles
9

Average Fleet Age
4.78

Total # Past ULB
5

Total # Scheduled to be Replaced
0

Asset Category: Service Vehicles - Tier II

Asset Class: Sport Utility Vehicles

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 87%

Forecast for End of SFY 17: 60%

Business Practice / Target: **20%**

Useful Life Benchmark: 4 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

Number of Vehicles
15

Average Fleet Age
6.47

Comments:

1 Replace vehicles at the 4 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 4 year service vehicle replacement program.

Total # Past ULB
13

Total # Scheduled to be Replaced
4

Asset Category: Service Vehicles - Tier II

Asset Class: Minivan

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 0%

Forecast for End of SFY 17: 0%

Business Practice / Target: 17%

Useful Life Benchmark: 5 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

Comments:

1 Replace vehicles at the 5 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 5 year bus replacement program.

Number of Vehicles
2

Average Fleet Age
0

Total # Past ULB
0

Total # Scheduled to be Replaced
0

Asset Category: Service Vehicles - Tier II

Asset Class: Van

Mode: Bus

CTDOT GOAL: **Maintain the vehicle class of rolling stock in a State of Good Repair**

KPI: Percentage of Asset Class that have met or exceeded their Useful Life Benchmark (ULB)

Current Percentage: 67%

Forecast for End of SFY 17: 67%

Business Practice / Target: 17%

Useful Life Benchmark: 5 Years

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 Consistency of federal funds

2 Available state funding

Comments:

1 Replace vehicles at the 5 year custom Useful Life Benchmark

2 Utilize a business practice to align all Connecticut Transit Providers on a 5 year service vehicle replacement program.

Number of Vehicles
3

Average Fleet Age
9.33

Total # Past ULB
2

Total # Scheduled to be Replaced
0

Asset Category: Facilities - Tier II

Asset Class: Passenger and Parking Facilities **Mode:** Bus

CTDOT GOAL: **Maintain all Facilities in a State of Good Repair**

KPI: Percentage of Asset Class that is below a 3 on the TERM Scale for SGR Condition

Current Percentage: 0%

Forecast for End of SFY 17: *0%*

Business Practice / Target: **0%**

TERM Scale Ratings: 1-5

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1 No formal condition rating process currently to accurately project condition

2 No formal Maintenance Management System in place to respond efficiently to SGR deficiencies

3 Target was set only based on institutional knowledge that critical issues are dealt with promptly

Number of Facilities

4

Facilities Ranked Below 3

0

% Ranked Below 3

0

Comments:

1 Address the need to perform condition assessments to determine an asset rating to better reflect SGR of our facilities to determine an appropriate target

2 Work with property managers to enhance data collection to better address deficiencies

Asset Category: Facilities - Tier II

Asset Class: Administrative and Maintenance Facilities **Mode:** Bus

CTDOT GOAL: **Maintain all Facilities in a State of Good Repair**

KPI: Percentage of Asset Class that is below a 3 on the TERM Scale for SGR Condition

Current Percentage: 0%

Forecast for End of SFY 17: 0%

Business Practice / Target: 0%

TERM Scale Ratings: 1-5

**SFY 17 - State of Connecticut Fiscal Year 2017*

Barriers:

1. No formal or unified condition rating process currently to accurately project condition amongst providers
2. No formal Maintenance Management System in Place to respond efficiently to SGR deficiencies
3. Target was set only based on institutional knowledge of each facility staff member who performed their own condition assessment

Number of Facilities
11

Facilities Ranked Below 3
0

% Ranked Below 3
0

Comments:

1. Address need to perform unified condition assessments amongst transit providers to determine an asset rating to reflect SGR of our facilities to determine an appropriate target
2. Determine Inventory Size to see if certain buildings need to be included/excluded
3. Work with property managers to enhance data collection to better address deficiencies

Target Summary:	Greater Bridgeport, Middletown, Milford, Southeast, Northwestern, Northeastern, Greater New Haven, Windham, Estuary, Valley, Norwalk, Housatonic Area Transit

Revenue Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Trolley	ULB	1 Vehicle	0%	**0%**	7%
Bus	ULB	184 Vehicles	43%	**15%**	14%
Cutaway Bus	ULB	286 Vehicles	41%	**16%**	17%
Minivan	ULB	5 Vehicles	0%	**0%**	17%

Service Vehicle Classes Total ***Goal:*** *Maintain the vehicle class of rolling stock in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Rubber and Tire Vehicles	ULB	23 Vehicles	26%	**26%**	7%
Automobiles	ULB	9 Vehicles	56%	**56%**	20%
Van	ULB	3 Vehicles	67%	**67%**	17%
Minivan	ULB	2 Vehicles	0%	**0%**	17%
Sport Utility Vehicle	ULB	15 Vehicles	87%	**60%**	20%

Facilities Classes Total ***Goal:*** *Maintain all Facilities in a State of Good Repair*

Asset Class	Performance Metric	Asset Count	Performance Measure	1 Year Forecast	Goal / Target
Passenger and Parking	TERM (1-5)	4 Facilities	0%	**0%**	0%
Admin and Maintenance	TERM (1-5)	11 Facilities	0%	**0%**	0%

Appendix 4

Version: 12-15-2017

AGREEMENT
Regarding
Transportation Planning & Funding
In the Hartford Urbanized Area

Section I. Purpose of Agreement

As required by 23 CFR Sec. 450.314(a), The Metropolitan Planning Organization (MPO), the State, and the providers of public transportation shall cooperatively determine their mutual responsibilities in carrying out the metropolitan planning process, and 23 CFR Sec. 450.314 (e). If more than one MPO has been designated to serve an urbanized area, there shall be a written agreement among the MPOs, the State, and the public transportation operator(s) describing how the metropolitan planning processes will be coordinated. Therefore, an Agreement must be established among the four Councils of Governments (COG) within the Hartford Urbanized Area, as well as the Connecticut Department of Transportation (CTDOT). The urbanized area is defined using the most recent Census blocks and population data. The Hartford Urbanized Area is defined as the towns, cities and suburbs in the region surrounding the City of Hartford. The population of the Hartford Urbanized area is over 200,000 and therefore is considered a Transportation Management Area (TMA). The attached map outlines each TMA in Connecticut. The COGs include the Capitol Region Council of Governments (CRCOG), the Naugatuck Valley Council of Governments (NVCOG), the Lower Connecticut River Valley Council of Governments (RiverCOG), and the Northwest Hills Council of Governments (NHCOG). The purpose of this Agreement is:

1. to define the method for distributing metropolitan planning funds received by the CTDOT from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) for transportation planning within the Hartford Urbanized Area;
2. to define the method for the development of financial plans for the Metropolitan Transportation Plan (MTP), the Transportation Improvement Program (TIP) and the list of obligated projects along with the coordination involved in Air Quality Conformity and Congestion management;
3. to define the method for distributing and administering FHWA Surface Transportation Block Grant Program (STBG) suballocated funds, Transportation Alternatives Set-Aside suballocated funds, FTA Section 5307 funds, and FTA Section 5310 funds earmarked for, or attributable to, the Hartford Urbanized Area; and
4. to define the responsibilities of each COG for carrying out its own transportation planning program and for coordinating with the other COGs in the Hartford Urbanized Area.

Section II. Distribution of Planning (PL) Funds among MPOs

CRCOG, NVCOG, and RiverCOG are the designated MPOs for their respective regions. As such they are entitled to a portion of the Metropolitan planning funds from the FHWA (known as PL funds) and the FTA (known as Section 5303 funds) through a statewide process administered by CTDOT. The funds will continue to be distributed according to a method developed by CTDOT in cooperation with all the MPOs in Connecticut. The method is based primarily on the total population in each urban planning region (not just the urbanized area within the region). Each MPO receives a share of the planning funds generally proportionate to its share of the combined population of all the urban planning regions in the

state. The shares are adjusted to ensure that the smallest urban regions receive a funding level that is at least equal to the minimum needed to carry out a basic urban transportation planning program.

NHCOG, as a rural region, receives a portion of Connecticut's State Planning and Research funds along with a portion of FTA section 5304 funds. Distribution of those funds is outside of the scope of this Agreement.

Section III. MTP, TIP, Obligated projects list, Air Quality Conformity, Congestion Management Process

A financial plan is documentation required to be included with a metropolitan transportation plan and TIP that demonstrates the consistency between reasonably available and projected sources of Federal, State, local, and private revenues and the costs of implementing proposed transportation system improvements.

MTP development – Each MPO shall receive from the CTDOT a financial plan with anticipated funding allocations for the 25 year period along with a list of major projects that are regionally and or statewide significant being funded with FHWA and FTA funds and to be included in the MTP. The formula used to calculate the anticipated funding allocation was developed in coordination with the MPOs throughout the state. Any changes to this formula will also be developed in coordination with the MPOs.

TIP development - Each MPO shall receive from the CTDOT a draft list of proposed projects for the MPOs use in the development of the draft TIP. Coordination between the MPOs and CTDOT on additions or deletions to this list will occur. The MPO will develop their TIP financial plan based on the projects they include in the TIP. Once approved, all MPOs TIPs are sent to the CTDOT for their use in the development of the Statewide Transportation Improvement Program (STIP).

Obligated projects list – Each MPO shall receive from the CTDOT, a listing of all federally funded projects that were obligated or awarded in a given federal fiscal year. The MPOs must publish, or otherwise make available for public review, an annual listing of projects for which federal funds have been obligated in the preceding year by the end of the first quarter of the next fiscal year. This listing must be consistent with the funding categories identified in the TIP.

Air Quality Conformity - The CTDOT, acting on behalf of the MPOs, must demonstrate conformity for all federally funded projects in the MTPs and TIPs located in either nonattainment or maintenance areas. In order to receive federal transportation funds, the CTDOT and the MPOs must cooperatively work to develop and endorse an Air Quality Conformity Determination report, which certifies to the federal government that all TIPs and MTPs within the State of Connecticut collectively conform to the requirements of the Clean Air Act.

Coordination of the Congestion Management Process for the Hartford TMA - As required by 23 CFR 450.320(a), the MPOs agree to develop and implement a Congestion Management Process as an integrated part of the metropolitan transportation planning process. CRCOG, as the largest MPO in the TMA, will take the lead on gathering and analyzing relevant data. Periodically, CRCOG, in consultation with the other MPOs and CTDOT, will develop a CMP report that analyzes the performance of key corridors in the TMA. The MPOs and CTDOT will work cooperatively to develop and implement strategies to address and mitigate congestion. Each MPO will work with CTDOT to develop such strategies into projects for inclusion in their respective Long Range Transportation Plans and Transportation Improvement Programs. Each MPO will also ensure that congestion management strategies are considered in corridor and special studies carried out by the MPO.

Section IV. Distribution of STBG Suballocated Funding for the Hartford UZA

The Surface Transportation Block Grant program (STBG) provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals. Urbanized Area Boundaries are established following each decennial census. The boundaries distinguish between urban and rural places for funding and system classification purposes. The census defined boundary is used to set the MPO/TMA threshold and is the basis for funding distribution among urbanized areas. A percentage of the State's STBG apportionment is suballocated to areas of the State based on their relative share of the State's population, and is divided into three categories – urbanized areas with population over 200,000, areas with population of 5,000 or less, and areas of the State with a population of 5,001 to 200,000. This Agreement concerns the over 200,000 Hartford Urbanized Area funding. Suballocation of urbanized area funding is calculated by FHWA and apportioned to the State by urbanized area.

Prior to authorization of the State funded Local Transportation Capital Improvement Program (LOTCIP) in November of 2013, COGs submitted applications to CTDOT for funding on behalf of municipalities and STBG funds attributable to the Hartford Urbanized Area were divided among the four COGs by CTDOT based on population within the Census defined urbanized area. Given the availability of LOTCIP funds for municipal projects of regional significance, projects under the STBG are and will continue to be coordinated and programmed at the Urbanized Area level between CTDOT and the COGs ensuring projects are evaluated based on purpose and need, merit and regional benefit. At a minimum, the coordination will occur during CTDOT's Capital Plan preparation and as needed throughout the Fiscal Year.

In the event that the LOTCIP funds are not authorized for a given year or the program is discontinued, CTDOT will work cooperatively to prioritize the advancement of regional LOTCIP projects using available transportation funds. Should the LOTCIP program be discontinued, CTDOT will work with the COGs on a solution to transition back to the federal STBG program. Funding targets under the STBG would be reflective of populations within the Census defined urbanized area and collaboratively developed with the COGs.

Designated TMAs are allowed to utilize STBG suballocated funds anywhere within the planning region boundaries. CRCOG and RiverCOG have been designated as TMAs, therefore, can utilize the Hartford Urbanized Area funding anywhere within its regional boundaries. One exception, however, exists for RiverCOG due to the merger of the prior planning regions (Midstate and CT River Estuary) and the inclusion of the Midstate towns within the designated Hartford TMA and the CT River Estuary towns within the designated New Haven TMA. The Hartford Urbanized Area funding can be used anywhere within the RiverCOG boundaries that include the prior Midstate towns. If Hartford Urbanized Area funds are to be used within the RiverCOG boundaries of the towns that are part of the New Haven TMA, a formal request through FHWA would be required to transfer the funds to the New Haven Urbanized Area funding source.

NVCOG's primary funding source under the STBG comes from the Waterbury Urbanized Area (referred to as STP Other), which has been designated based on 2010 census results as an area of the State with population of 5,001 to 200,000, therefore, has not reached the threshold for designation as a TMA. NVCOG includes three towns (Plymouth Bristol, and Thomaston) that are located within the Hartford Urbanized Area. Because NVCOG is not a designated Hartford TMA, the Hartford Urbanized Area funding can only be used on eligible projects located within the Hartford urbanized areas within Plymouth, Bristol and Thomaston.

NHCOG is one of two Rural regions located within Connecticut. NHCOG's primary funding source under the STBG comes from the Torrington Urban Cluster (referred to as STP Other), which has been designated based on 2010 census results as an area of the State with population of 5,001 to 200,000. NHCOG also includes towns that reside within the Hartford Urbanized Area – Barkhamsted, Litchfield,

New Hartford, and Burlington. Because NHCOG is a rural region and not designated part of the Hartford TMA, the Hartford Urbanized Area funding can only be used on eligible projects located within the Hartford urbanized areas within the four towns listed above. .

Section V. Solicitation of Projects for the Transportation Alternatives (TA) Set-Aside Funds for the Hartford UZA

The TA Set-Aside authorizes funding for programs and projects defined as ***transportation alternatives***, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity; recreational trail projects; safe routes to school projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former divided highways. The four COGs agree to assist CTDOT with soliciting projects for the TA Set-Aside Program. For funds suballocated to urbanized areas with populations of over 200,000, the MPOs representing the urbanized areas are responsible for developing the competitive process and selecting/prioritizing projects in consultation with CTDOT. CRCOG and RiverCOG are the only regions with a population over 200,000, therefore, are responsible for the competitive process to select projects under the Hartford Urbanized Area TA Set-Aside funding source within their respective regional boundaries. NVCOG and NHCOG have towns within the Hartford Urbanized Area and two towns are located within the Hartford TMA boundaries (Plymouth and Bristol). CRCOG and RiverCOG agree to coordinate with NVCOG and NHCOG to consider proposed projects for the TA-Set-Aside program located within eligible areas of NVCOG and NHCOG. NVCOG and/or NHCOG will submit applications to CTDOT for the Hartford Urbanized Area TA Set-Aside funding source should coordination result in agreement between CRCOG, RiverCOG, NVCOG and NHCOG that a portion of funding will be provided to progress a project in NVCOG or NHCOG located within the Hartford Urbanized Area.

Section VI. Distribution of FTA 5307 Funds for the Hartford UZA

The Urbanized Area Formula Funding program (5307) makes Federal resources available to urbanized areas and to the Governors for transit capital and operating assistance and for transportation related planning in urbanized areas. The four COGs and the CTDOT Bureau of Public Transportation agree to distribute Section 5307 funds from the FTA in the manner described below. The FTA Section 5307 funds attributable to the Hartford Urbanized Area will be pooled with all other Section 5307 funds in Connecticut and administered as a statewide program by CTDOT, following procedures specified in FTA Circular 9030.1E (as amended). CTDOT will coordinate as necessary with Transit Operators and the COGs when developing its capital investment priorities for public transportation. The annual 5307 program will be adopted by the MPOs into their respective TIPs.

This continues the procedure previously agreed to by all COGs in the state. It recognizes the inefficiency of trying to program large and infrequent capital purchases when individual regions are limited to small annual appropriations for their respective regions and/or urbanized areas. An example of this is the difficulty of programming funds for replacement of buses when the buses have a minimum 12-year life cycle and appropriated funds are typically available only for 4 years.

Section VII. Coordination and Administration of FTA 5310 Funds for the Hartford UZA

Under the MAP-21 transportation legislation, FTA Section 5317, New Freedom Program, was absorbed into Section 5310 and administration of the program became flexible within a given Urbanized Area. The Section 5310 program provides formula funding to states for the purpose of assisting private nonprofit groups in meeting the transportation needs of older adults and people with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. The four COGs agree that the administration of Section 5310 will be the responsibility of CTDOT who will coordinate with the COGs. The COGs and CTDOT will collaborate on the development and periodic update of the required Coordinated Public Transit-Human Services Transportation Plan.

Section VIII. Basic Responsibilities of Each MPO

Each of the three MPOs will conduct each of the following basic transportation planning activities as outlined in the "Statement of Cooperative MPO/State/Transit Operators Planning Roles & Responsibilities"

1. Preparation of an annual Unified Planning Work Program that lists and describes all transportation planning studies and tasks to be completed during the year.
2. Preparation and update of a long range, multi-modal metropolitan transportation plan.
3. Preparation and maintenance of a short-range transportation improvement program (TIP).
4. Financial planning to ensure plan and program are financially constrained and within anticipated funding levels.
5. Conduct of planning studies and system performance monitoring, including highway corridor and intersection studies, transit system studies, application of advanced computer techniques, and transportation data collection and archiving.
6. Public outreach, including survey of affected populations, electronic dissemination of reports and information (website), and consideration of public comments.
7. Ensuring the transportation planning process does not have a significant or disproportionate impact on low income, minority and transit dependent Title VI populations.
8. Ensuring plans, projects and programs are consistent with and conform to air quality goals of reducing transportation-related emissions and attaining National Ambient Air Quality Standards.
9. Adhere to all required Planning Regulations as outlined in 23 CFR part 450 and in 49 CFR part 613.
10. Cooperatively develop and implement a Congestion Management Process for the Hartford Urbanized Area.

As a non-MPO COG, NHCOG is not required to develop the above, but may wish to do so to better coordinate transportation planning activities.

Section IX. Coordination among COGs and CTDOT

It is the goal of the four COGs to conduct their transportation programs in a manner that ensures their plans and programs are mutually supportive of major projects, programs, and policies to improve the transportation system in the Hartford Urbanized Area.

Coordination of Planning Activities. The three MPOs in the Hartford UZA (CRCOG, NVCOG, and RiverCOG) agree to coordinate their regional transportation plans, transportation improvement programs (TIPs), and annual work programs. The coordination efforts will include the exchange and review of annual work programs, regional transportation plans, and TIPs. Staff of the three MPOs will meet at least annually to review each other's planning programs and to identify projects or programs of mutual interest or potential conflict. NHCOG will be included in all correspondence and invited to annual meetings, but it is not critical that they attend annual meetings.

Coordination of the STBG Suballocated Program. Since the establishment of the state funded Local Transportation Capital Improvement Program (LOTCIP) in November 2013, the Department and the COGs have agreed to meet annually to coordinate project selection for the STBG. The intent of these annual meetings is:

- To review projects currently programmed using STBG funds within the COG and to identify any areas of under-programming, with the primary focus on the next federal fiscal year.
- To identify Department projects that appear to be good candidates for STBG funding to address any under-programming concerns in the upcoming fiscal year and to solicit the COG's comments regarding the best candidates from a regional perspective.
- To discuss the status of any projects being scoped by the Department.

Coordination of the Capital Plan/Project Selection Process. CTDOT will send a *draft* of a proposed 5-year Capital Plan (the Plan) to the COGs for review and comment in the summer of each calendar year. The draft may reflect input that the Department received from the COGs during the COG consultation process on the previous year's plan. This consultation process consists of annual meetings with each COG to address comments and concerns and potential selection of projects for the outer years of the Plan.

Moving forward the CTDOT will coordinate with the COGs on developing a project selection process to ensure consideration of fiscal constraint, federal funding restrictions, regional priorities, environmental justice, project readiness and ensuring a state of good repair. The selection process will be transparent and will align with the Department's and COGs mission and vision.

CTDOT is responsible for effectively managing the federal resources entrusted to it and for maximizing the use of these federal resources. Obligating 100% of the obligation limitation (ceiling) provided each fiscal year by Congress is critical to maximizing the use of federal funding. The STBG suballocated program is an important component in the obligation of 100% of ceiling, and CTDOT assumes obligation of 100% of the current fiscal year apportionment in its Capital Plan to accomplish this. Because the TIP/STIP is a critical part of the project funding/implementation process as required by Title 23, the COGs play an important role in the process to ensure maximum use of federal funds. At a minimum, CTDOT will meet annually with each COG. This meeting will be to discuss overall programming within the STBG to enhance coordination, provide project details for new projects determined to be good candidates, and understand regional needs and priorities as outlined in each COGs response to the DRAFT 5-Year Capital Plan. Additional coordination meetings may be needed to ensure that any programming shortfalls that may occur as a result of schedule and cost changes occurring throughout the fiscal year are cooperatively addressed which may result in the need to provide timely approval near fiscal year-end to move a project into the STBG suballocated program or process an Advance Construction (AC) conversion utilizing STBG Hartford Urbanized Area funding. If there are no options for addressing a programming shortfall within the Hartford Urbanized Area within the current fiscal year, funding will carry forward into the next fiscal year and CTDOT will work with the COGs to program these funds.

Coordination of the selection of performance targets for each metropolitan area. According to 23 CFR 450.314(h), The MPOs, Operators of Public Transportation and the CTDOT must mutually agree upon and document the roles and responsibilities for conducting performance-based planning and programming in an Agreement. Therefore, the MPOs, transit operators and CTDOT agree to meet to

discuss setting performance targets, include performance measures and performance targets in the MTP and Transportation Improvement Plans, coordinate reporting of these performance targets to the United States Department of Transportation (USDOT) and develop a separate performance management agreement

Section X. Coordination of Transit and TDM Planning

It is the goal of the parties to this Agreement to conduct their planning activities in a manner that supports multiple modes of transportation throughout the Hartford Urbanized Area.

Coordination of the Locally Coordinated Public Transit – Human Services Transportation Plan (LOCHSTP). In support of the FTA 5310 program, the parties to this Agreement agree to coordinate on developing and maintaining the LOCHSTP for the Hartford Urbanized Area. As the designated recipient of funds under the 5310 program, CTDOT will continue to take the lead role in ensuring that locally coordinated plans throughout the state are developed in a consistent fashion. The four COGS in the Hartford Urbanized Area will work with CTDOT to update and maintain the plan.

Coordination of Transit Planning Activities. The parties agree to participate, as needed, in CT ***transit's*** Bus Service Review Committee. The parties will assist with demographic data evaluation and municipal coordination. The parties also agree to cooperate on initiatives that seek to maintain and improve security and safety of transit facilities within the Hartford Urbanized Area.

Coordination of Transportation Demand Management (TDM) Strategies. The parties agree to work collaboratively to develop TDM strategies and work toward implementing them. CTDOT will take a lead role in developing and implementing TDM strategies that seek to incentivize, and inform the public of, alternatives to single occupancy vehicles. The COGs and transit operators will assist CTDOT with evaluating such strategies and, where appropriate, implementing them.

Section XI. Amendment

This Agreement may be amended as jointly deemed necessary or in the best interest of all parties, including Federal Transportation agencies.

Nothing contained in this Agreement is intended to or shall limit the authority or responsibilities assigned to signatory organizations under Connecticut law, federal law, local ordinance, or charter.

Section XII. Periodic Review of Agreement

This Agreement will be reviewed periodically so that it remains current in describing the roles and responsibilities of the impacted COGs and CTDOT relative to the Hartford Urbanized Area. The Agreement will be assessed at a minimum in the year following each federal certification review of the TMA regions' planning process to capture any changes in federal transportation authorizations, federal regulations and guidance, changes in State regulations pertaining to transportation, and comments that were part of the certification review.

Marcia Leclerc — 2/23/18

Marcia Leclerc, Mayor
CRCOG Chairperson — Date

Mark L Lyon — 5/1/18

Mark Lyon
NHCOG Chairperson — Date

Neil O'Leary — 4/24/18

Neil O'Leary, Mayor
NVCOG Chairperson — Date

Bonnie Reemsnyder — 3/28/18

Bonnie Reemsnyder, First Selectwoman
RiverCOG Chairperson — Date

Vicki L. Shotland — 5-18-18

Vicki Shotland
Executive Director, GHTD — Date

L Seymour — 3/28/18

Lisa Seymour
Administrator, MAT — Date

Joseph Comerford — 3/28/18

Joseph Comerford
Executive Director, Estuary TD — Date

James P. Redeker — 5/23/18

James P. Redeker
Commissioner, CTDOT — Date

Memorandum of Understanding / Cooperative Agreement

Capitol Region Council of Governments (CRCOG)

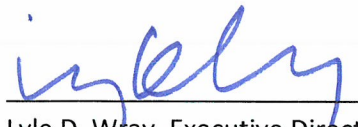
CRCOG is guided by the chief elected officials of 38 Metro Hartford municipalities in the State of Connecticut. The transportation planning program is undertaken at the direction of the CRCOG Transportation Committee, with representatives from each city or town in the Capitol Region. The Transportation Committee reports to the CRCOG Policy Board which acts as the Metropolitan Planning Organization (MPO) for the Capitol Region.

Pioneer Valley Planning Commission (PVPC)

The PVPC is the designated regional planning body for the Pioneer Valley region which encompasses 43 cities and towns in the Hampden and Hampshire county areas. The PVPC transportation planning staff provides support services for the Pioneer Valley Metropolitan Planning Organization (MPO).

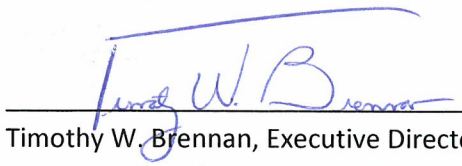
The agencies share parts of urbanized areas (designated by the US Bureau of the Census) and metropolitan areas (designated by the Office of Management and Budget) and are each responsible for satisfying the requirements of a Transportation Management Area (TMA as designated by the US Department of Transportation.) The agencies acknowledge a common interest in the interstate region but retain individual responsibility and jurisdiction. It is to the mutual benefit of the agencies to cooperate and provide for the coordination of planning activities for all modes of transportation between their respective planning districts. The agencies agree to the following:

1. Each agency will ensure the mutual exchange of information and expertise, and the transmittal for review of all pertinent documents including, but not limited to, the Unified Planning Work Program, the Transportation Improvement Program, and the Long Range Transportation Plan.
2. Each agency agrees to cooperate in matters pertaining to, but not limited to, the Congestion Management Process, evacuation planning, Intelligent Transportation Systems, bicycle-pedestrian, and transit planning.
3. Each agency agrees to share GIS and regional transportation model data.
4. Each agency will ensure the notification of, and participation in, meetings concerned with matters of mutual interest.
5. Each agency will ensure cooperation and consultation on plans, programs, and projects affecting both parties. In addition, each agency agrees to meet at a minimum annually to discuss cross border transportation planning efforts. If inconsistencies or conflicts arise, the agencies shall meet and employ their best efforts to develop a satisfactory resolution.



Lyle D. Wray, Executive Director
Capitol Region Council of Governments

8-19-2015
Date



Timothy W. Brennan, Executive Director
Pioneer Valley Planning Commission

8-27-2015
Date

Appendix 5

EXPECTED REVENUE FOR TRANSIT PROJECTS PER MPO				
FEDERAL FUNDS AND STATE SHARE				STATE FUNDED ONLY
MPO	total cost	FTA share	state share	state funded
SWMPO	$3,169,000,000	$2,535,200,000	$633,800,000	$272,500,000
METROCOG	$1,755,600,000	$1,404,480,000	$351,120,000	
SCRCOG	$105,000,000	$84,000,000	$21,000,000	$605,000,000
CRCOG	$770,000,000	$616,000,000	$154,000,000	$554,500,000
SECCOG	$50,000,000	$40,000,000	$10,000,000	$380,000,000
EXPECTED FEDERAL REVENUE FOR TRANSIT PROJECTS - MULTIREGIONAL				
FEDERAL FUNDS AND STATE SHARE				STATE FUNDED ONLY
MPO	total cost	FTA share	state share	
STATEWIDE	$1,697,500,000	$1,358,000,000	$339,500,000	$2,946,500,000
NEW HAVEN LINE - SYSTEMWIDE (MPOS 1,2,5,7,8)	$4,413,500,000	$3,530,800,000	$882,700,000	$1,400,000,000
CT TRANSIT SYSTEMWIDE (MPOS 1,5,8,10,11)	$813,000,000	$650,400,000	$162,600,000	
SHORELINE EAST (MPOS 11,13)				$358,000,000
SWMPO/HVMPO	$250,000,000	$200,000,000	$50,000,000	$45,000,000
CNVMPO,METROCOG,SCRCOG	$255,000,000	$204,000,000	$51,000,000	
METROCOG,SCRCOG	$1,350,000,000	$1,080,000,000	$270,000,000	
CRCOG/SCRCOG				$150,000,000

	MPO	Project #	Town	Route/Street Number	Project Description	Added Capacity Y or N	Bridge #	Funding Source	1 to 4	5 to 10	11 to 27	Total
CTDOT - Transit	CRCOG	TBD	HARTFORD	CT Transit	Bus Maintenance Facility Improvements - Hartford SOGR	N		FTA	75000	175000		250000
	CRCOG	TBD	HARTFORD	CT Transit	Bus Maintenance Facility Improvements - Hartford (New Satellite)	N		FTA		150000		150000
	CRCOG	TBD	HARTFORD	HTFD LINE	Hartford Line - Existing Stations - Hartford	N		FTA			20000	20000
	CRCOG	TBD	STATEWIDE	All Transit Distrcits	Bus Fleet Overhauls & Replacements - All Other Buses	N		FTA	85000	20000	140000	245000
	CRCOG	TBD	STATEWIDE	Statewide Bus	Systemwide Technology Upgrades for Buses	N		FTA	15000	15000	60000	90000
	CRCOG	TBD	STATEWIDE	All Transit Distrcits	Bus Maintenance Facility Improvements - All Other Bus Facilities SOGR	N		FTA	60000	40000	80000	180000
	CRCOG	TBD	STATEWIDE	STATEWIDE	Multimodal Fare Technology Improvements	N		FTA		60000	135000	195000
	CRCOG	TBD	STATEWIDE	CT Transit	CT Transit System wide - Admin Capital / Misc. Support	N		FTA	19000	42000	133000	194000
	CRCOG	TBD	STATEWIDE	CT Transit	Bus Fleet Overhauls & Replacements - CTTransit	N		FTA	18500	166500	434000	619000
	CRCOG	TBD	VARIOUS	CT Transit	New BRT-Like Service - East of Hartford	N		FTA			50000	50000
	CRCOG	TBD	VARIOUS	CTFastrak	Bus Fleet Overhauls & Replacements - CTFastrak	N		FTA	5000	25000	60000	90000
	CRCOG	TBD	VARIOUS	CTFastrak	CTFastrak Stations & Fixed Guideway	N		FTA		40000	80000	120000
	CRCOG	TBD	VARIOUS	Statewide Bus	Bus Fleet Expansion in Urban Areas, Including Real-Time Scheduling and Smart Card Fare Boxes	N		FTA		19800	62700	82500
	CRCOG	0320-0015	WINDSOR	HTFD LINE	Hartford Line - Existing Stations - Windsor	N		FTA		50000	20000	70000
	CRCOG	0320-0016	WINDSOR LOCKS	HTFD LINE	Hartford Line - Existing Stations - Windsor Locks	N		FTA	50000		20000	70000
	CRCOG	0170-2296	BERLIN	HTFD LINE	Hartford Line - Existing Stations - Berlin	N		State			40000	40000
	CRCOG	0320-0017	ENFIELD	HTFD LINE	Hartford Line - Future Stations - Enfield	N		State	50000			50000
	CRCOG	TBD	HARTFORD	HTFD LINE	Hartford Line - Rehabilitation of Connecticut River Railroad Bridge	N		State		60000	90000	150000
	CRCOG	0320-0013	NEWINGTON	HTFD LINE	Hartford Line - Future Stations - Newington	N		State	50000			50000
	CRCOG	TBD	STATEWIDE	Rail Freight	Rail Freight Network Annual Funding Program (SOGR)	N		State	30000	10000		40000
	CRCOG	0320-0008	VARIOUS	HTFD LINE	Hartford Line - Phase 3B (Remaining Double Tracking, without CT River Bridge)	N		State	87500	127000		214500
	CRCOG	TBD	VARIOUS	CTRAIL	Rail Fleet - Coaches	N		State		300000	135000	435000
	CRCOG	TBD	VARIOUS	CTRAIL	Rail Fleet - Locomotives	N		State	225000	1275000	884000	2384000
	CRCOG	TBD	VARIOUS	CTRAIL	Systemwide - New Rail Shop for Diesel / Dual Power Locomotives & Coach Repairs	N		State			87500	87500
	CRCOG	0170-2296	VARIOUS	HTFD LINE	Hartford Line - Grade Crossing Elimination Program	N		State	1000	149000		150000
	CRCOG	0320-0014	WEST HARTFORD	HTFD LINE	Hartford Line - Future Stations - West Hartford	N		State	50000			50000
CTDOT - Highway	CRCOG	0042-0317	EAST HARTFORD	RT 2	Rt. 2 Operational & Safety Improvements Between Exits 3 and 5	N		State		55000		55000
	CRCOG	0053-0192	Glastonbury/Wethersfield	Trail	Trail Connections to the Putnam Bridge Walkway	N		State		10500		10500
	CRCOG	0063-0703	HARTFORD	I-91	I-91 Charter Oak Bridge	N		FHWA		228000		228000
	CRCOG	0063-0716	HARTFORD	I-84	I-84 Hartford Viaduct Replacement	N		FHWA			3490000	3490000
	CRCOG	0063-0719	HARTFORD	Sigourney Street	Rehab/Replace Br 03023 o/ Capitol Ave & Amtrak	N		FHWA		22350		22350
	CRCOG	0118-0170	ROCKY HILL	RT 3, 99 & 411	Replace/Upgrade CTSS Equipment	N		FHWA		10800		10800
	CRCOG	0155-0171	WEST HARTFORD	I-84	I-84 West Hartford Exits 40 & 42	N		State		65000		65000
	CRCOG	0160-0150	WILLINGTON	I-84	Replace Br 02169 over Lower Ruby Brook	N		State		12000		12000
	CRCOG	0171-0425	DISTRICT 1	CT 9/ CT 72	Replace Highway Signs & Supports on CT 9 (Exits 25-31) & CT 72 (Exits 1-9)	N		FHWA		14500		14500
	CRCOG	TBD	FARMINGTON	I-84	I-84 Interchange at Route 4 and Route 6 in Farmington	N		FHWA		130000		130000
	CRCOG	0007-0189	Berlin/Cromwell	Various	Replace Highway Signs & Supports - CT 9 (Exits 18-24), CT 5/15 & SR 571	N		FHWA		14500		14500
	CRCOG	0171-0415	Various	RT 9/72	RT 9/72 CCTV Installation	N		FHWA		12076		12076
	CRCOG	TBD	MERIDEN/SOUTHINGON	I-691	I-691 RBC Project - Meriden/Southington - MP 1.9 to MP 4.85	N		FHWA		4150		4150
CRCOG Transit	CRCOG	TBD	Southington, Plainville, Bristol	CTtransit	Implement local bus service along Routes 10 and 229	n/a	n/a	unfunded	900			900
	CRCOG	TBD	Hartford, East Hartford	CTtransit	Implement Transit Priority Corridors	n/a	n/a	unfunded		TBD		TBD
CRCOG Highway	CRCOG	TBD	Manchester	I-84	Auxiliary lanes between Exits 62 and 63	Y		FHWA		92000		92000
	CRCOG	TBD	Manchester	I-84	Auxiliary lanes between Exits 63 and 64/65	Y		FHWA		6200		6200
	CRCOG	TBD	Manchester/South Windsor	I-84	Additional WB exit-ramp at Exit 63; other WB ramp improvements	Y		FHWA			94000	94000
	CRCOG	TBD	Manchester/South Windsor	I-84	Buckland HOV Ramps	Y		FHWA			160000	160000
	CRCOG	TBD	Manchester	Buckland Street	Single Point Interchange at Buckland Street/Buckland Hills Drive	Y		FHWA			115000	115000
	CRCOG	TBD	Windsor	I-91	Day Hill Rd Interchange Improvements	Y		FHWA		30000		30000
	CRCOG	TBD	Wethersfield/Glastonbury	Route 2	Putnam Bridge Rehab/Replacement	N		FHWA			520000	520000

CRCOG	TBD	Bolton	I-384 / Rt 6 / Rt 44	Interchange reconfiguration for safety and connectivity improvements	Y		FHWA			50000	50000
CRCOG	0011-0155	BLOOMFIELD	CT 178/Crestview Drive	Extension of RR Track Circuit at Int. #11-252	Y		FHWA	150			150
CRCOG	0042-0319	EAST HARTFORD	Trail	Hockanum River Park Trail - Phase 3	Y		FHWA	475			475
CRCOG	0048-yyyy	ENFIELD	Various	Traffic Study - Vicinity of Routes 190, 220, I-91 & Enfield Square Mall	Y		FHWA	238			238
CRCOG	0053-0189	GLASTONBURY	CT 17	NHS - Rehab Br 00388 CT 17 NB o/ CT 17 SB Ramp 007	Y	Br 00388	State	4,750			4,750
CRCOG	0053-0192	Glastonbury/Wethersfield	Trail	Trail Connections to Putnam Bridge Walkway (RW)	Y		State	185			185
CRCOG	0053-0192	Glastonbury/Wethersfield	Trail	Trail Connections to Putnam Bridge Walkway (FD)	Y		State	500			500
CRCOG	0063-0626	HARTFORD	Van Dyke Ave	Roadway & Streetscape Improvements - Charter Oak Ave to Masseek St	Y		FHWA	3,120			3,120
CRCOG	0063-0626	HARTFORD	Van Dyke Ave	Roadway & Streetscape Improvements - Charter Oak Ave to Masseek St	Y		FHWA	277			277
CRCOG	0063-0678	HARTFORD	Sigourney St	Roundabout at Park, Russ and Sigourney	Y		FHWA	2,292			2,292
CRCOG	0063-0690	HARTFORD	Various	Traffic Signal Upgrades, Various Locations	Y		FHWA	2,675			2,675
CRCOG	0063-0703	HARTFORD	I-91/RT 15	Relocation & Reconfigure Interchange 29 (CN)	Y		State	112,000			112,000
CRCOG	0063-0708	HARTFORD	I-84	NHS - Rehab Bridges 03399A-D, 03400A-C, 03401A-B, 03402A-B; vic. Sisson Ave	Y	, 03400A-C, 03	FHWA	8,096			8,096
CRCOG	0063-0712	HARTFORD	I-84	NHS - Rehab Br 00980B o/CT River, I-84 WB TR 826 to I-91 NB	Y	Br 00980B	FHWA	1,250			1,250
CRCOG	0063-0714	HARTFORD	Weston Street	Intersection Improvements at Jennings Road and Boce Barlow Way	Y		FHWA	1,036			1,036
CRCOG	0063-0716	HARTFORD	I-84	I-84 Viaduct Replacement (PE)	Y		State	30,000			30,000
CRCOG	0063-0717	HARTFORD	Various	ATMS Communications Upgrade	Y		FHWA	532			532
CRCOG	0063-0718	HARTFORD	Various	Traffic Signal Upgrades at Various Locations	Y		FHWA	3,216			3,216
CRCOG	0063-0718	HARTFORD	Various	Traffic Signal Upgrades at Various Locations	Y		FHWA	56			56
CRCOG	0076-0221	MANCHESTER	Buckland Street	Intersection Improvements at Buckland Hills Drive & Pleasant Valley Road	Y		FHWA	813			813
CRCOG	0077-0236	MANSFIELD	SRSI	Ped Safety Improvements, vic. S.E. Elementary School	Y		FHWA	495			495
CRCOG	0077-0240	MANSFIELD	UCONN	SFY 19/20 Technology Transfer Center - LTAP	Y		FHWA	242			242
CRCOG	0078-0093	MARLBOROUGH	South Main Street	Replace Br 05650 over Fawn Brook	Y	Br 05650	FHWA	1,836			1,836
CRCOG	0078-0094	MARLBOROUGH		Tank Replacements	Y		State	1,600			1,600
CRCOG	0088-0194	NEW BRITAIN	Main Street	Intersection Improvements at Lafayette Street	Y		FHWA	610			610
CRCOG	0093-0213	NEWINGTON		CT Safety Research Center (Effective 7/1/16-6/30/21)	Y		FHWA	1,540			1,540
CRCOG	0093-0214	NEWINGTON		Highway Safety Office Tasks Consistent with SHSP (7/1/16-6/30/21)	Y		FHWA	819			819
CRCOG	0093-0228	NEWINGTON	Various	Newington Highway Operations Center (8/1/18-7/30/22)	Y		FHWA	3,880			3,880
CRCOG	0093-0229	NEWINGTON	Various	Newington Highway Operations Procurement (8/1/18-7/30/22)	Y		FHWA	2,830			2,830
CRCOG	0093-xxxx	NEWINGTON		DOT Training Placeholder (CY 2019)	Y		FHWA	1,252			1,252
CRCOG	0109-0165	PLAINVILLE	Tomlinson Ave	Replace Br 04546 o/ Quinnipiac River	Y	Br 04546	FHWA	1,128			1,128
CRCOG	0109-0173	PLAINVILLE	Trail	FCHT - Town Line Rd to Northwest Drive (PE)	Y		State	3,800			3,800
CRCOG	0129-0115	SOMERS	SR 528	Replace Br 05587 o/ Gillettes Brk	Y	Br 05587	State	1,400			1,400
CRCOG	0131-0203	SOUTHINGTON	Trail	Farmington Canal Heritage Trail	Y		FHWA	3,194			3,194
CRCOG	0131-0203	SOUTHINGTON	Trail	Farmington Canal Heritage Trail	Y		FHWA	87			87
CRCOG	0132-0129	SOUTH WINDSOR	Eli Terry	Pedestrian Safety Improvements	Y		FHWA	470			470
CRCOG	0134-0147	STAFFORD	RT 190	Intersection Improvements at Rte 319	Y		FHWA	1,873			1,873
CRCOG	0139-0103	SUFFIELD	Harvey Lane	Modernize Railroad Crossing	Y		FHWA	1,090			1,090
CRCOG	0139-0113	Suffield/Enfield	CT 190	Rehab Br 03295 o/ CT River & Amtrak	Y	Br 03295	FHWA	3,000			3,000
CRCOG	0139-0114	SUFFIELD	Remington Street	Replace Br 04819 over Stony Brook	Y	Br 04819	FHWA	2,800			2,800
CRCOG	0146-0197	VERNON	Skinner Road	Ped Impr vic. Skinner Road Elementary School	Y		FHWA	491			491
CRCOG	0146-0199	VERNON	Main St	Replace Br 04575 o/ Tankerhoosen River	Y	Br 04575	FHWA	1,600			1,600
CRCOG	0155-0171	WEST HARTFORD	I-84	Construct Operational Lanes EB & WB (CN)	Y		State	78,000			78,000
CRCOG	0155-0173	WEST HARTFORD	I-84	Replace Hwy Signs & Supports, Exit 40-56	Y		State	10,500			10,500
CRCOG	0159-0191	Wethersfield/Hartford	I-91	Resurfacing, Bridge & Safety Improvements on I-91, M.P. 33.45-36.58	Y		FHWA	24,300			24,300
CRCOG	0160-0147	WILLINGTON	CT 32	Replace Br 02259 o/S. Branch Roaring Brook	Y	Br 02259	FHWA	2,000			2,000
CRCOG	0170-3054	STATEWIDE	Various	Design of Pavement Preservation Projects	Y		State	750			750
CRCOG	0170-3360	STATEWIDE	Various	CT Safety Analysis Methods (thru 9/30/20)	Y		FHWA	2,002			2,002
CRCOG	0170-3377	STATEWIDE	Various	Statewide Scoping Activities	Y		State	1,000			1,000
CRCOG	0170-3382	STATEWIDE	Various	Load Ratings for Bridges - NHS Roads (1/1/16-12/31/20)	Y		FHWA	2,000			2,000
CRCOG	0170-3383	STATEWIDE	Various	Load Ratings for Bridges - Non-NHS Roads (1/1/16-12/31/20)	Y		FHWA	1,000			1,000
CRCOG	0170-3384	STATEWIDE	Various	Innovative Bridge Program Development (IBP)	Y		State	1,500			1,500
CRCOG	0170-3411	STATEWIDE	Various	SF Bridge Insp - NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	2,440			2,440
CRCOG	0170-3412	STATEWIDE	Various	SF Bridge Insp - Non-NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	2,795			2,795
CRCOG	0170-3413	STATEWIDE	Various	CE Bridge Insp - NHS Roads, NBI Bridges Only (9/1/16 - 8/31/21)	Y		FHWA	16,968			16,968
CRCOG	0170-3414	STATEWIDE	Various	CE Bridge Insp - Non-NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	8,130			8,130
CRCOG	0170-3415	STATEWIDE	Various	CE Sign Support Insp - NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	1,893			1,893
CRCOG	0170-3416	STATEWIDE	Various	CE Sign Support Insp - Non-NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	276			276
CRCOG	0170-3422	STATEWIDE	Local Br Program	Local Bridge Program CLE Services (CJM/BL)	Y		FHWA	360			360
CRCOG	0170-3425	STATEWIDE	Various	Install ADA Curb Ramps and Sidewalks	Y		State	6,000			6,000
CRCOG	0170-3426	STATEWIDE		Fed Local Bridge Program PL (thru 9/30/21)	Y		FHWA	432			432
CRCOG	0170-3431	STATEWIDE		Surface Transportation Workforce Development (thru 9/30/19)	Y		FHWA	100			100
CRCOG	0170-3434	STATEWIDE	Various	Rapid Response Bridge Repairs by State Forces (thru 12/31/20)	Y		FHWA	75			75
CRCOG	0170-3439	STATEWIDE		TA Program - Project Development/Scoping (Fed Eligible) thru 3/31/22	Y		FHWA	528			528

CRCOG	0170-3441	STATEWIDE		Traffic Signal System Circuit Rider Program (4/1/17 - 3/31/20)	Y		FHWA	308			308
CRCOG	0170-3444	STATEWIDE		Pavement Management Analysis (4/1/17 - 3/31/20)	Y		FHWA	443			443
CRCOG	0170-3455	STATEWIDE	Various	CHAMP Safety Service Patrol (7/1/17-6/30/20)	Y		FHWA	4,083			4,083
CRCOG	0170-3491	STATEWIDE	Various	Epoxy Resin Pavement Markings (1 of 4) - thru 12/31/20	Y		FHWA	2,000			2,000
CRCOG	0170-3492	STATEWIDE	Various	Epoxy Resin Pavement Markings (2 of 4) - thru 12/31/20	Y		FHWA	2,000			2,000
CRCOG	0170-3493	STATEWIDE	Various	Epoxy Resin Pavement Markings (3 of 4) - thru 12/31/20	Y		FHWA	2,000			2,000
CRCOG	0170-3494	STATEWIDE	Various	Epoxy Resin Pavement Markings (4 of 4) - thru 12/31/20	Y		FHWA	2,000			2,000
CRCOG	0170-3499	STATEWIDE		Asset Management Group (7/1/18 thru 6/30/20)	Y		FHWA	1,155			1,155
CRCOG	0170-3500	STATEWIDE		Bridge Management Group (7/1/18 thru 6/30/20)	Y		FHWA	880			880
CRCOG	0170-5002	Rural Towns		HRRR Work Zone Safety Program	Y		FHWA	265			265
CRCOG	0170-PTxx	STATEWIDE	Various	Public Trans Annual Program	Y		FHWA	6,489			6,489
CRCOG	0170-xBRU	STATEWIDE	Various	SFY20 BRU Bridge Preservation Repairs	Y		State	20,000			20,000
CRCOG	0170-xCCP	STATEWIDE	Various - CC	Placeholder - Community Connectivity Program	Y		State	11,073			11,073
CRCOG	0170-xxMP	STATEWIDE		MP Placeholder	Y		FHWA	6,750			6,750
CRCOG	0718-9996	STATEWIDE		SFY 18 & 19 MP Urban Program (7/1/17 - 6/30/19)	Y		FHWA	6,325			6,325
CRCOG	0719-9991	STATEWIDE		SFY 19/20 SPR Program Planning-Coordination, Modeling & Crash Data Office	Y		FHWA	2,585			2,585
CRCOG	0719-9992	STATEWIDE		SFY 19/20 SPR Program Planning-Environmental Planning	Y		FHWA	2,455			2,455
CRCOG	0719-9993	STATEWIDE		SFY 19/20 SPR Program Planning-Strategic Planning & Projects	Y		FHWA	4,280			4,280
CRCOG	0719-9997	STATEWIDE		SFY 19/20 SPR Research Program	Y		FHWA	3,565			3,565
CRCOG	0719-9998	STATEWIDE		SFY 19/20 SPR Program Planning-Roadway Inventory System Office	Y		FHWA	7,468			7,468
CRCOG	170B-RJTS	STATEWIDE	Various	SFY20 Bridge Joints following 2019 VIP	Y		State	5,000			5,000
CRCOG	170P-VMNT	STATEWIDE		TBD Pavement Preservation (Pvt Mgt List)	Y		State	25,000			25,000
CRCOG	170S-COUR	STATEWIDE	Various	Bridge Scour Monitoring (Placeholder; Effective 1/1/19, Yr 1)	Y		FHWA	100			100
CRCOG	170T-RAIL	STATEWIDE	Various - Trail	Placeholder - Expanded Trail/Alternative Mobility Program	Y		State	5,947			5,947
CRCOG	170U-Wnhs	STATEWIDE	Various	CE Bridge Insp - Uwater - NHS Roads (Placeholder; Effective 9/1/19, Yr 1)	Y		FHWA	920			920
CRCOG	170U-Wnon	STATEWIDE	Various	CE Bridge Insp - Uwater - Non-NHS Roads (Placeholder; Effective 9/1/19, Yr 1)	Y		FHWA	1,272			1,272
CRCOG	BRDG-CLEx	STATEWIDE		DOT & CLE Services for Bridge Program Oversight	Y		State	4,000			4,000
CRCOG	CRSH-STDY	STATEWIDE		Statewide Studies of High Frequency Accident Locations (start date 2/1/19)	Y		FHWA	500			500
CRCOG	GUID-RAIL	STATEWIDE	Various	Guiderail Replacement Program	Y		State	5,000			5,000
CRCOG	RESU-RFAC	STATEWIDE	Various	Vendor in Place Pavement Program	Y		State	69,000			69,000
CRCOG	SAFE-CIRC	STATEWIDE	Various	Placeholder for Continuation of Safety Circuit Rider Program	Y		FHWA	1,240			1,240
CRCOG	SIGN-SPRT	STATEWIDE		Sign Support Replacements Placeholder	Y		State	4,000			4,000
CRCOG	Toll-Stdy	STATEWIDE	Ltd Access Hwys	Study of Electronic Tolling System	Y		State	10,000			10,000
CRCOG	TRAN-SCOM			Transfer to NJ for 2019 TRANSCOM Work Program	Y		FHWA	338			338
CRCOG	0172-0450	DISTRICT 2	Various	Signal Replacements for APS Upgrade	Y		FHWA	4,940			4,940
CRCOG	0171-0417	DISTRICT 1	Various	OSTA Traffic Signals in District 1	Y		FHWA	3,350			3,350
CRCOG	0007-0190	BERLIN	Various	Preservation of Bridge Nos. 04476, 05224, 06122 and 06123	Y	476, 05224, 06	FHWA	1,350			1,350
CRCOG	0042-0318	EAST HARTFORD	Brewer Street	Reconstruction of Brewer St	Y		FHWA	4,091			4,091
CRCOG	0046-SIGN	E. Windsor/Enfield	I-91	Replace Highway Signs - Exit 44 to MA State Line	Y		State	12,750			12,750
CRCOG	0047-0119	ELLINGTON	CT 140	Replace Br 02668 o/ Charters Brook	Y	Br 02668	FHWA	2,000			2,000
CRCOG	0048-0190	ENFIELD		Construct high-speed rail crossing to bike & ped trails along the CT River	Y		FHWA	2,600			2,600
CRCOG	0051-0272	FARMINGTON	CT 177	Rehab Br 01487 over Farmington River	Y	Br 01487	State	2,500			2,500
CRCOG	0053-0192	Glastonbury/Wethersfield	Trail	Trail Connections to the Putnam Bridge Walkway (CN)	Y		State	10,500			10,500
CRCOG	0053-0194	GLASTONBURY	Fisher Hill Road	Rehab Br 04514 over Roaring Brook	Y	Br 04514	FHWA	1,836			1,836
CRCOG	0055-0141	GRANBY	CT10/202	Intersection Improvements at East St. & Notch Rd.	Y		FHWA	4,695			4,695
CRCOG	0055-0142	GRANBY	10/202	Major Intersection Impr at CT 20/189	Y		FHWA	7,150			7,150
CRCOG	0063-0654	HARTFORD	I-84 TR825	NHS - Rehab Br 01686B o/US 44 & Columbus Blvd	Y	Br 01686B	FHWA	4,400			4,400
CRCOG	0063-0694	HARTFORD	I-84 TR 823	NHS - Rehab Bridge 03400D o/ Parking Lot	Y	Br 03400D	State	2,510			2,510
CRCOG	0063-0716	HARTFORD	I-84	I-84 Viaduct Replacement (PE)	Y		State	30,000			30,000
CRCOG	0063-0720	HARTFORD	Asylum Avenue	Intersection Improvements at Sigourney Street	Y		FHWA	830			830
CRCOG	0063-0721	HARTFORD	Riverwalk	Ped/Bike Trail Extension, from the Boathouse to Weston Street	Y		FHWA	2,000			2,000
CRCOG	0076-0220	MANCHESTER	CT 83 & Oakland St	Two Roundabouts - 83 @ Oakland; Oakland @ Local Rds	Y		FHWA	5,500			5,500
CRCOG	0078-0092	MARLBOROUGH	CT 2	NHS - Rehab Br 01708 & 03374 o/ West Rd	Y	r 01708 & 0337	FHWA	2,400			2,400
CRCOG	0078-0095	MARLBOROUGH	Jones Hollow Road	Replace Br 04450 over Blackledge River	Y	Br 04450	FHWA	2,160			2,160
CRCOG	0088-0195	NEW BRITAIN	Trail	Construction of a Ped/Bike Trail Loop in Stanley Quarter Park	Y		FHWA	1,288			1,288
CRCOG	0093-0213	NEWINGTON		CT Safety Research Center (Effective 7/1/16-6/30/21)	Y		FHWA	1,540			1,540
CRCOG	0093-0214	NEWINGTON		Highway Safety Office Tasks Consistent with SHSP (7/1/16-6/30/21)	Y		FHWA	860			860
CRCOG	0093-0218	Newington/New Britain	CT 175	Computerized Traffic Signal System	Y		FHWA	6,800			6,800
CRCOG	0093-0228	NEWINGTON	Various	Newington Highway Operations Center (8/1/18-7/30/22)	Y		FHWA	4,470			4,470
CRCOG	0093-0229	NEWINGTON	Various	Newington Highway Operations Procurement (8/1/18-7/30/22)	Y		FHWA	2,220			2,220
CRCOG	0093-xxxx	NEWINGTON		DOT Training Placeholder (CY 2020)	Y		FHWA	1,252			1,252
CRCOG	0109-0173	PLAINVILLE	Trail	FCHT - Town Line Rd to Northwest Drive (RW)	Y		State	300			300
CRCOG	0118-0172	ROCKY HILL	CT 99	Silas Deane Hwy Ped Improvements	Y		FHWA	2,160			2,160
CRCOG	0131-0206	SOUTHINGTON	Spring Street	Replace Br 04562 o/ Quinnipiac River	Y	Br 04562	FHWA	2,392			2,392

CTDOT 5-year Capitol Plan (Highway)

CRCOG	0132-0139	SOUTH WINDSOR	I-291 & King St	NHS - Rehab Br 05944 o/ Podunk River	Y	Br 05944	FHWA	2,800			2,800
CRCOG	0134-0147	STAFFORD	RT 190	Intersection Improvements at Rte 319	Y		FHWA	2,492			2,492
CRCOG	0134-0148	STAFFORD	CT 32/CT 190	Modern Roundabout at Routes 32 & 190	Y		FHWA	1,000			1,000
CRCOG	0159-0191	Wethersfield/Hartford	I-91	Resurfacing, Bridge & Safety Improvements on I-91, M.P. 33.45-36.58	Y		FHWA	20,000			20,000
CRCOG	0164-0240	WINDSOR	Day Hill Rd	Upgrade Signals, Various Intersections	Y		FHWA	1,130			1,130
CRCOG	0165-0468	WINDSOR LOCKS	CT20 @ CT75	Realign CT 20 off-ramp to CT 75	Y		FHWA	2,504			2,504
CRCOG	0165-0468	WINDSOR LOCKS	CT20 @ CT75	Realign CT 20 off-ramp to CT 75	Y		FHWA	425			425
CRCOG	0171-0433	DISTRICT 1	VARIOUS	Replace Traffic Signals at 9 Locations	Y		FHWA	3,218			3,218
CRCOG	0170-3054	STATEWIDE	Various	Design of Pavement Preservation Projects	Y		State	750			750
CRCOG	0170-3377	STATEWIDE	Various	Statewide Scoping Activities	Y		State	1,000			1,000
CRCOG	0170-3382	STATEWIDE	Various	Load Ratings for Bridges - NHS Roads (1/1/16-12/31/20)	Y		FHWA	2,000			2,000
CRCOG	0170-3383	STATEWIDE	Various	Load Ratings for Bridges - Non-NHS Roads (1/1/16-12/31/20)	Y		FHWA	1,000			1,000
CRCOG	0170-3384	STATEWIDE	Various	Innovative Bridge Program Development (IBP)	Y		State	1,000			1,000
CRCOG	0170-3411	STATEWIDE	Various	SF Bridge Insp - NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	2,560			2,560
CRCOG	0170-3412	STATEWIDE	Various	SF Bridge Insp - Non-NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	2,935			2,935
CRCOG	0170-3413	STATEWIDE	Various	CE Bridge Insp - NHS Roads, NBI Bridges Only (9/1/16 - 8/31/21)	Y		FHWA	17,816			17,816
CRCOG	0170-3414	STATEWIDE	Various	CE Bridge Insp - Non-NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	8,537			8,537
CRCOG	0170-3415	STATEWIDE	Various	CE Sign Support Insp - NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	1,988			1,988
CRCOG	0170-3416	STATEWIDE	Various	CE Sign Support Insp - Non-NHS Roads (9/1/16 - 8/31/21)	Y		FHWA	290			290
CRCOG	0170-3425	STATEWIDE	Various	Install ADA Curb Ramps and Sidewalks	Y		State	6,000			6,000
CRCOG	0170-3426	STATEWIDE		Fed Local Bridge Program PL (thru 9/30/21)	Y		FHWA	432			432
CRCOG	0170-3434	STATEWIDE	Various	Rapid Response Bridge Repairs by State Forces (thru 12/31/20)	Y		FHWA	50			50
CRCOG	0170-3439	STATEWIDE		TA Program - Project Development/Scoping (Fed Eligible) thru 3/31/22	Y		FHWA	528			528
CRCOG	0170-3491	STATEWIDE	Various	Epoxy Resin Pavement Markings (1 of 4) - thru 12/31/20	Y		FHWA	2,000			2,000
CRCOG	0170-3492	STATEWIDE	Various	Epoxy Resin Pavement Markings (2 of 4) - thru 12/31/20	Y		FHWA	2,000			2,000
CRCOG	0170-3493	STATEWIDE	Various	Epoxy Resin Pavement Markings (3 of 4) - thru 12/31/20	Y		FHWA	2,000			2,000
CRCOG	0170-3494	STATEWIDE	Various	Epoxy Resin Pavement Markings (4 of 4) - thru 12/31/20	Y		FHWA	2,000			2,000
CRCOG	0170-AMGx	STATEWIDE		Asset Management Group	Y		FHWA	1,400			1,400
CRCOG	0170-BMGx	STATEWIDE		Bridge Management Group	Y		FHWA	1,250			1,250
CRCOG	0170-PTxx	STATEWIDE	Various	Public Trans Annual Program	Y		FHWA	6,684			6,684
CRCOG	0170-xBRU	STATEWIDE	Various	SFY21 BRU Bridge Preservation Repairs	Y		State	20,000			20,000
CRCOG	0170-xCCP	STATEWIDE	Various - CC	Placeholder - Community Connectivity Program	Y		State	15,000			15,000
CRCOG	0170-xHPR	STATEWIDE		HPR/SPR Placeholder	Y		FHWA	9,500			9,500
CRCOG	0170-xIBP	STATEWIDE	Various	Placeholder - Innovative Bridge Program (IBP) (Delivery and/or Construction Methodology)	Y		State	6,515			6,515
CRCOG	0170-xxMP	STATEWIDE		MP Placeholder	Y		FHWA	6,750			6,750
CRCOG	170B-RJTS	STATEWIDE	Various	SFY21 Bridge Joints following 2020 VIP	Y		State	5,000			5,000
CRCOG	170P-VMNT	STATEWIDE		TBD Pavement Preservation (Pvmt Mgt List)	Y		State	13,000			13,000
CRCOG	170P-VMNT	STATEWIDE		TBD Pavement Preservation (Pvmt Mgt List)	Y		State	12,000			12,000
CRCOG	170S-COUR	STATEWIDE	Various	Bridge Scour Monitoring (Placeholder; Effective 1/1/19, Yr 2)	Y		FHWA	100			100
CRCOG	170T-RAIL	STATEWIDE	Various - Trail	Placeholder - Expanded Trail/Alternative Mobility Program	Y		State	700			700
CRCOG	170U-Wnhs	STATEWIDE	Various	CE Bridge Insp - Uwater - NHS Roads (Placeholder; Effective 9/1/19, Yr 2)	Y		FHWA	975			975
CRCOG	170U-Wnon	STATEWIDE	Various	CE Bridge Insp - Uwater - Non-NHS Roads (Placeholder; Effective 9/1/19, Yr 2)	Y		FHWA	1,348			1,348
CRCOG	BRDG-CLEx	STATEWIDE		DOT & CLE Services for Bridge Program Oversight	Y		State	4,000			4,000
CRCOG	CHMP-xxxx	STATEWIDE	Various	CHAMP Safety Service Patrol	Y		FHWA	4,083			4,083
CRCOG	GUID-RAIL	STATEWIDE	Various	Guiderail Replacement Program	Y		State	5,000			5,000
CRCOG	RESU-RFAC	STATEWIDE	Various	Vendor in Place Pavement Program	Y		State	69,000			69,000
CRCOG	SIGN-SPRT	STATEWIDE		Sign Support Replacements Placeholder	Y		State	4,000			4,000
CRCOG	SIPH-xxxx	STATEWIDE		TBD Safety Projects	Y		FHWA	17,778			17,778
CRCOG	TRAN-SCOM			Transfer to NJ for 2020 TRANSCOM Work Program	Y		FHWA	338			338
CRCOG	xSTP-PRES	STATEWIDE		TBD STP Infrastructure Preservation	Y		FHWA	15,000			15,000
CRCOG	0172-SIGN	DISTRICT 2	CT 2	Replace Highway Signs - Exits 13-29	Y		State	6,500			6,500
CRCOG	0171-0429	DISTRICT 1		Replace Salt Shed Roofs, Vernon, Stafford & Union	Y		State	800			800
CRCOG	0172-0471	DISTRICT 1 & 2	VARIOUS	Replace Traffic Signals at 14 Locations	Y		FHWA	4,550			4,550
CRCOG	0174-0418	DISTRICT 4	VARIOUS	Replace Traffic Signals at 12 Locations	Y		FHWA	3,859			3,859
CRCOG	0011-0156	BLOOMFIELD	CT 178	Replace Br 01489 over Beaman Brook	Y	Br 01489	State	1,325			1,325
CRCOG	0030-0097	Columbia/Coventry	Trail	Hop River State Park Trail (CN)	Y		State	3,634			3,634
CRCOG	0032-0149	COVENTRY	US 44	Rehab/Replace Br 06851 o/ Olson's Brook	Y	Br 06851	State	400			400
CRCOG	0048-0198	ENFIELD	South River St	Replace Br 04506 over Freshwater Brook	Y	Br 04506	FHWA	2,700			2,700
CRCOG	0051-0274	FARMINGTON	I-84/US 6/SR 531	Realign I-84 EB On-Ramp and US 6	Y		FHWA	3,267			3,267
CRCOG	0063-0716	HARTFORD	I-84	I-84 Viaduct Replacement (PE)	Y		State	25,000			25,000
CRCOG	0076-0222	MANCHESTER	I-384	Replace/Reline Br 06650 (culvert) o/ Folly Brook	Y	Br 06650	State	900			900
CRCOG	0076-0223	MANCHESTER	I-384	Replace/Reline Br 06884 & 06885 (culverts) over Porter Brook	Y	06884 & 0688	State	1,200			1,200
CRCOG	0088-0192	NEW BRITAIN	Various	Upgrade Signals, Various Intersections	Y		FHWA	2,670			2,670
CRCOG	0093-0228	NEWINGTON	Various	Newington Highway Operations Center (8/1/18-7/30/22)	Y		FHWA	4,710			4,710

CRCOG	0093-0229	NEWINGTON	Various	Newington Highway Operations Procurement (8/1/18-7/30/22)	Y		FHWA	2,315			2,315
CRCOG	0093-xxxx	NEWINGTON		DOT Training Placeholder (CY 2021)	Y		FHWA	1,252			1,252
CRCOG	0128-0153	SIMSBURY	CT 10	NHS - Replace Br 00653 o/ Hop Brook	Y	Br 00653	State	1,900			1,900
CRCOG	0165-0509	WINDSOR LOCKS	I-91	Rehab Br 00454 o/ River, Amtrak & 159	Y	Br 00454	FHWA	12,180			12,180
CRCOG	0170-3054	STATEWIDE	Various	Design of Pavement Preservation Projects	Y		State	750			750
CRCOG	0170-3377	STATEWIDE	Various	Statewide Scoping Activities	Y		State	1,000			1,000
CRCOG	0170-3425	STATEWIDE	Various	Install ADA Curb Ramps and Sidewalks	Y		State	6,000			6,000
CRCOG	0170-3426	STATEWIDE		Fed Local Bridge Program PL (thru 9/30/21)	Y		FHWA	432			432
CRCOG	0170-3439	STATEWIDE		TA Program - Project Development/Scoping (Fed Eligible) thru 3/31/22	Y		FHWA	528			528
CRCOG	0170-AMGx	STATEWIDE		Asset Management Group	Y		FHWA	1,400			1,400
CRCOG	0170-BMGx	STATEWIDE		Bridge Management Group	Y		FHWA	1,250			1,250
CRCOG	0170-PTxx	STATEWIDE	Various	Public Trans Annual Program	Y		FHWA	6,684			6,684
CRCOG	0170-xBRU	STATEWIDE	Various	SFY22 BRU Bridge Preservation Repairs	Y		State	20,000			20,000
CRCOG	0170-xCCP	STATEWIDE	Various - CC	Placeholder - Community Connectivity Program	Y		State	15,000			15,000
CRCOG	0170-xHPR	STATEWIDE		HPR/SPR Placeholder	Y		FHWA	9,500			9,500
CRCOG	0170-xIBP	STATEWIDE	Various	Placeholder - Innovative Bridge Program (IBP) (Delivery and/or Construction Methodology)	Y		State	20,000			20,000
CRCOG	0170-xxMP	STATEWIDE		MP Placeholder	Y		FHWA	6,750			6,750
CRCOG	170B-RJTS	STATEWIDE	Various	SFY22 Bridge Joints following 2021 VIP	Y		State	5,000			5,000
CRCOG	170C-Enhs	STATEWIDE	Various	CE Bridge Insp - NHS Roads, NBI Bridges Only (Annual Requirement)	Y		FHWA	17,816			17,816
CRCOG	170C-Enon	STATEWIDE	Various	CE Bridge Insp - Non-NHS Roads (Annual Requirement)	Y		FHWA	8,537			8,537
CRCOG	170P-VMNT	STATEWIDE		TBD Pavement Preservation (Pvmt Mgt List)	Y		State	25,000			25,000
CRCOG	170S-COUR	STATEWIDE	Various	Bridge Scour Monitoring (Placeholder; Effective 1/1/19, Yr 3)	Y		FHWA	100			100
CRCOG	170S-Fnhs	STATEWIDE	Various	SF Bridge Insp - NHS Roads (Annual Requirement)	Y		FHWA	2,560			2,560
CRCOG	170S-Fnon	STATEWIDE	Various	SF Bridge Insp - Non-NHS Roads (Annual Requirement)	Y		FHWA	2,935			2,935
CRCOG	170S-Snhs	STATEWIDE	Various	CE Sign Support Insp - NHS Roads (Annual Requirement)	Y		FHWA	1,988			1,988
CRCOG	170S-Snon	STATEWIDE	Various	CE Sign Support Insp - Non-NHS Roads (Annual Requirement)	Y		FHWA	750			750
CRCOG	170T-RAIL	STATEWIDE	Various - Trail	Placeholder - Expanded Trail/Alternative Mobility Program	Y		State	11,200			11,200
CRCOG	170T-RAIL	STATEWIDE	Various - Trail	Placeholder - Expanded Trail/Alternative Mobility Program	Y		State	4,920			4,920
CRCOG	170U-Wnhs	STATEWIDE	Various	CE Bridge Insp - Uwater - NHS Roads (Placeholder; Effective 9/1/19, Yr 3)	Y		FHWA	1,034			1,034
CRCOG	170U-Wnon	STATEWIDE	Various	CE Bridge Insp - Uwater - Non-NHS Roads (Placeholder; Effective 9/1/19, Yr 3)	Y		FHWA	1,429			1,429
CRCOG	BRDG-CLEx	STATEWIDE		DOT & CLE Services for Bridge Program Oversight	Y		State	4,000			4,000
CRCOG	BRDG-OFFx	STATEWIDE		TBD Local Bridge Preservation Projects	Y		FHWA	21,250			21,250
CRCOG	BRID-GExx	STATEWIDE		TBD Bridge Preservation Placeholder	Y		State	10,000			10,000
CRCOG	CHMP-xxxx	STATEWIDE	Various	CHAMP Safety Service Patrol	Y		FHWA	4,083			4,083
CRCOG	CMAQ-COGS	STATEWIDE	Various	Future COG Project Awards for CMAQ (Reserve)	Y		FHWA	10,000			10,000
CRCOG	GUID-RAIL	STATEWIDE	Various	Guiderail Replacement Program	Y		State	5,000			5,000
CRCOG	PREV-OVER	STATEWIDE	Various	Overprogrammed Bridge Projects from Current or Previous Years	Y		State	65,000			65,000
CRCOG	PREV-OVER	STATEWIDE	Various	Overprogrammed Roadway Projects from Current or Previous Years	Y		State	250,000			250,000
CRCOG	Pvmt-Mark	STATEWIDE		Line Striping/Pavement Markings Placeholder	Y		FHWA	8,000			8,000
CRCOG	RESU-RFAC	STATEWIDE	Various	Vendor in Place Pavement Program	Y		State	69,000			69,000
CRCOG	SGNL-PRES	STATEWIDE		Signals Preservation Placeholder	Y		FHWA	7,355			7,355
CRCOG	SIGN-PRES	STATEWIDE		Signing Preservation Placeholder	Y		State	30,000			30,000
CRCOG	SIGN-SPRT	STATEWIDE		Sign Support Replacements Placeholder	Y		State	4,000			4,000
CRCOG	SIPH-xxxx	STATEWIDE		TBD Safety Projects	Y		FHWA	19,139			19,139
CRCOG	TRAN-SCOM			Transfer to NJ for 2021 TRANSCOM Work Program	Y		FHWA	338			338
CRCOG	xSTP-PRES	STATEWIDE		TBD STP Infrastructure Preservation	Y		FHWA	32,500			32,500
CRCOG	xTAP-COGS	STATEWIDE		Future COG Project Awards for TAP (Reserve)	Y		FHWA	4,000			4,000
CRCOG	0171-0441	DISTRICT 1	Various	Replace Traffic Control Signals in District 1	Y		FHWA	3,657			3,657
CRCOG	0174-0424	DISTRICT 4	Various	Replace Traffic Control Signals in Various Locations	Y		FHWA	4,949			4,949
CRCOG	0063-0703	HARTFORD	I-91/RT 15	Relocation & Reconfigure Interchange 29	Y		FHWA	5,000			5,000
CRCOG	0063-0716	HARTFORD	I-84	I-84 Viaduct Replacement (PE)	Y		State	25,000			25,000
CRCOG	0093-xHOC	NEWINGTON	Various	Newington Highway Operations Center	Y		FHWA	4,480			4,480
CRCOG	0093-xPRO	NEWINGTON	Various	Newington Highway Operations Procurement	Y		FHWA	2,255			2,255
CRCOG	0093-xxxx	NEWINGTON		DOT Training Placeholder (CY 2022)	Y		FHWA	1,252			1,252
CRCOG	0109-0173	PLAINVILLE	Trail	FCHT - Town Line Rd to Northwest Drive (CN)	Y		State	11,200			11,200
CRCOG	0109-0173	PLAINVILLE	Trail	FCHT - Town Line Rd to Northwest Drive (CN)	Y		State	3,800			3,800
CRCOG	0131-0190	SOUTHINGTON	CT 10	NHS - Remove Br 00518, reconstruct CT10/322 intersection	Y	Br 00518	FHWA	9,200			9,200
CRCOG	0165-0509	WINDSOR LOCKS	I-91	Rehab Br 00454 o/ River, Amtrak & 159	Y	Br 00454	FHWA	19,600			19,600
CRCOG	0170-3054	STATEWIDE	Various	Design of Pavement Preservation Projects	Y		State	750			750
CRCOG	0170-3377	STATEWIDE	Various	Statewide Scoping Activities	Y		State	1,000			1,000
CRCOG	0170-3425	STATEWIDE	Various	Install ADA Curb Ramps and Sidewalks	Y		State	6,000			6,000
CRCOG	0170-AMGx	STATEWIDE		Asset Management Group	Y		FHWA	1,400			1,400
CRCOG	0170-BMGx	STATEWIDE		Bridge Management Group	Y		FHWA	1,250			1,250
CRCOG	0170-PTxx	STATEWIDE	Various	Public Trans Annual Program	Y		FHWA	6,684			6,684

CRCOG	0170-xBRU	STATEWIDE	Various	SFY23 BRU Bridge Preservation Repairs	Y		State	20,000			20,000
CRCOG	0170-xCCP	STATEWIDE	Various - CC	Placeholder - Community Connectivity Program	Y		State	15,000			15,000
CRCOG	0170-xHPR	STATEWIDE		HPR/SPR Placeholder	Y		FHWA	9,500			9,500
CRCOG	0170-xIBP	STATEWIDE	Various	Placeholder - Innovative Bridge Program (IBP) (Delivery and/or Construction Methodology)	Y		State	20,000			20,000
CRCOG	0170-xxMP	STATEWIDE		MP Placeholder	Y		FHWA	6,750			6,750
CRCOG	170B-RJTS	STATEWIDE	Various	SFY23 Bridge Joints following 2022 VIP	Y		State	5,000			5,000
CRCOG	170C-Enhs	STATEWIDE	Various	CE Bridge Insp - NHS Roads, NBI Bridges Only (Annual Requirement)	Y		FHWA	17,816			17,816
CRCOG	170C-Enon	STATEWIDE	Various	CE Bridge Insp - Non-NHS Roads (Annual Requirement)	Y		FHWA	8,537			8,537
CRCOG	170P-VMNT	STATEWIDE		TBD Pavement Preservation (Pvmt Mgt List)	Y		State	25,000			25,000
CRCOG	170S-COUR	STATEWIDE	Various	Bridge Scour Monitoring (Placeholder; Effective 1/1/19, Yr 4)	Y		FHWA	100			100
CRCOG	170S-Fnhs	STATEWIDE	Various	SF Bridge Insp - NHS Roads (Annual Requirement)	Y		FHWA	2,560			2,560
CRCOG	170S-Fnon	STATEWIDE	Various	SF Bridge Insp - Non-NHS Roads (Annual Requirement)	Y		FHWA	2,935			2,935
CRCOG	170S-Snhs	STATEWIDE	Various	CE Sign Support Insp - NHS Roads (Annual Requirement)	Y		FHWA	1,988			1,988
CRCOG	170S-Snon	STATEWIDE	Various	CE Sign Support Insp - Non-NHS Roads (Annual Requirement)	Y		FHWA	750			750
CRCOG	170U-Wnhs	STATEWIDE	Various	CE Bridge Insp - Uwater - NHS Roads (Placeholder; Effective 9/1/19, Yr 4)	Y		FHWA	1,096			1,096
CRCOG	170U-Wnon	STATEWIDE	Various	CE Bridge Insp - Uwater - Non-NHS Roads (Placeholder; Effective 9/1/19, Yr 4)	Y		FHWA	1,515			1,515
CRCOG	BRDG-CLEx	STATEWIDE		DOT & CLE Services for Bridge Program Oversight	Y		State	4,000			4,000
CRCOG	BRDG-OFFx	STATEWIDE		TBD Local Bridge Preservation Projects	Y		FHWA	31,250			31,250
CRCOG	BRDG-PNLT	STATEWIDE		TBD NHS Bridge Preservation Projects	Y		FHWA	43,750			43,750
CRCOG	BRID-GExx	STATEWIDE		TBD Bridge Preservation Placeholder	Y		State	4,000			4,000
CRCOG	CHMP-xxxx	STATEWIDE	Various	CHAMP Safety Service Patrol	Y		FHWA	4,083			4,083
CRCOG	CMAQ-COGS	STATEWIDE	Various	Future COG Project Awards for CMAQ (Reserve)	Y		FHWA	10,000			10,000
CRCOG	GUID-RAIL	STATEWIDE	Various	Guiderail Replacement Program	Y		State	5,000			5,000
CRCOG	Pvmt-Mark	STATEWIDE		Line Striping/Pavement Markings Placeholder	Y		FHWA	8,000			8,000
CRCOG	RESU-RFAC	STATEWIDE	Various	Vendor in Place Pavement Program	Y		State	69,000			69,000
CRCOG	SGNL-PRES	STATEWIDE		Signals Preservation Placeholder	Y		FHWA	15,000			15,000
CRCOG	SIGN-PRES	STATEWIDE		Signing Preservation Placeholder	Y		State	30,000			30,000
CRCOG	SIGN-SPRT	STATEWIDE		Sign Support Replacements Placeholder	Y		State	4,000			4,000
CRCOG	SIPH-xxxx	STATEWIDE		TBD Safety Projects	Y		FHWA	26,083			26,083
CRCOG	TRAN-SCOM			Transfer to NJ for 2022 TRANSCOM Work Program	Y		FHWA	338			338
CRCOG	xSTP-PRES	STATEWIDE		TBD STP Infrastructure Preservation	Y		FHWA	71,250			71,250
CRCOG	xTAP-COGS	STATEWIDE		Future COG Project Awards for TAP (Reserve)	Y		FHWA	4,000			4,000
CRCOG	0172-0477	DISTRICT 2	Various	Horizontal Curve Signs & Pavement Markings	Y		FHWA	6,225			6,225
CRCOG	0063-0716	HARTFORD	I-84	I-84 Viaduct Replacement (PE)	Y		State		25,000		25,000
CRCOG	0093-xHOC	NEWINGTON	Various	Newington Highway Operations Center	Y		FHWA		4,480		4,480
CRCOG	0093-xPRO	NEWINGTON	Various	Newington Highway Operations Procurement	Y		FHWA		2,255		2,255
CRCOG	0093-xxxx	NEWINGTON		DOT Training Placeholder (CY 2023)	Y		FHWA		1,252		1,252
CRCOG	0170-3054	STATEWIDE	Various	Design of Pavement Preservation Projects	Y		State		750		750
CRCOG	0170-3425	STATEWIDE	Various	Install ADA Curb Ramps and Sidewalks	Y		State		6,000		6,000
CRCOG	0170-AMGx	STATEWIDE		Asset Management Group	Y		FHWA		1,400		1,400
CRCOG	0170-BMGx	STATEWIDE		Bridge Management Group	Y		FHWA		1,250		1,250
CRCOG	0170-PTxx	STATEWIDE	Various	Public Trans Annual Program	Y		FHWA		6,684		6,684
CRCOG	0170-xBRU	STATEWIDE	Various	SFY24 BRU Bridge Preservation Repairs	Y		State		20,000		20,000
CRCOG	0170-xCCP	STATEWIDE	Various - CC	Placeholder - Community Connectivity Program	Y		State		15,000		15,000
CRCOG	0170-xHPR	STATEWIDE		HPR/SPR Placeholder	Y		FHWA		9,500		9,500
CRCOG	0170-xIBP	STATEWIDE	Various	Placeholder - Innovative Bridge Program (IBP) (Delivery and/or Construction Methodology)	Y		State		20,000		20,000
CRCOG	0170-xxMP	STATEWIDE		MP Placeholder	Y		FHWA		6,750		6,750
CRCOG	170B-RJTS	STATEWIDE	Various	SFY24 Bridge Joints following 2023 VIP	Y		State		5,000		5,000
CRCOG	170C-Enhs	STATEWIDE	Various	CE Bridge Insp - NHS Roads, NBI Bridges Only (Annual Requirement)	Y		FHWA		17,816		17,816
CRCOG	170C-Enon	STATEWIDE	Various	CE Bridge Insp - Non-NHS Roads (Annual Requirement)	Y		FHWA		8,537		8,537
CRCOG	170P-VMNT	STATEWIDE		TBD Pavement Preservation (Pvmt Mgt List)	Y		State		25,000		25,000
CRCOG	170S-COUR	STATEWIDE	Various	Bridge Scour Monitoring (Placeholder; Effective 1/1/19, Yr 5)	Y		FHWA		100		100
CRCOG	170S-Fnhs	STATEWIDE	Various	SF Bridge Insp - NHS Roads (Annual Requirement)	Y		FHWA		2,560		2,560
CRCOG	170S-Fnon	STATEWIDE	Various	SF Bridge Insp - Non-NHS Roads (Annual Requirement)	Y		FHWA		2,935		2,935
CRCOG	170S-Snhs	STATEWIDE	Various	CE Sign Support Insp - NHS Roads (Annual Requirement)	Y		FHWA		1,988		1,988
CRCOG	170S-Snon	STATEWIDE	Various	CE Sign Support Insp - Non-NHS Roads (Annual Requirement)	Y		FHWA		750		750
CRCOG	170T-RAIL	STATEWIDE	Various - Trail	Placeholder - Expanded Trail/Alternative Mobility Program	Y		State		11,200		11,200
CRCOG	170U-Wnhs	STATEWIDE	Various	CE Bridge Insp - Uwater - NHS Roads (Placeholder; Effective 9/1/19, Yr 5)	Y		FHWA		1,162		1,162
CRCOG	170U-Wnon	STATEWIDE	Various	CE Bridge Insp - Uwater - Non-NHS Roads (Placeholder; Effective 9/1/19, Yr 5)	Y		FHWA		1,606		1,606
CRCOG	BRDG-CLEx	STATEWIDE		DOT & CLE Services for Bridge Program Oversight	Y		State		4,000		4,000
CRCOG	BRDG-OFFx	STATEWIDE		TBD Local Bridge Preservation Projects	Y		FHWA		31,250		31,250
CRCOG	CHMP-xxxx	STATEWIDE	Various	CHAMP Safety Service Patrol	Y		FHWA		4,083		4,083
CRCOG	CMAQ-COGS	STATEWIDE	Various	Future COG Project Awards for CMAQ (Reserve)	Y		FHWA		10,000		10,000
CRCOG	GUID-RAIL	STATEWIDE	Various	Guiderail Replacement Program	Y		State		5,000		5,000

	CRCOG	Pvmt-Mark	STATEWIDE		Line Striping/Pavement Markings Placeholder	Y		FHWA		8,000		8,000
	CRCOG	RESU-RFAC	STATEWIDE	Various	Vendor in Place Pavement Program	Y		State		69,000		69,000
	CRCOG	SGNL-PRES	STATEWIDE		Signals Preservation Placeholder	Y		FHWA		15,000		15,000
	CRCOG	SIGN-PRES	STATEWIDE		Signing Preservation Placeholder	Y		State		30,000		30,000
	CRCOG	SIGN-SPRT	STATEWIDE		Sign Support Replacements Placeholder	Y		State		4,000		4,000
	CRCOG	SIPH-xxxx	STATEWIDE		TBD Safety Projects	Y		FHWA		27,778		27,778
	CRCOG	TRAN-SCOM	STATEWIDE		Transfer to NJ for 2023 TRANSCOM Work Program	Y		FHWA		338		338
	CRCOG	xSTP-PRES	STATEWIDE		TBD STP Infrastructure Preservation	Y		FHWA		71,250		71,250
	CRCOG	xTAP-COGS	STATEWIDE		Future COG Project Awards for TAP (Reserve)	Y		FHWA		4,000		4,000
CTDOT 5-year Capitol Plan (Transit)	CRCOG	DOT04010012CN	VARIOUS	CT Transit	CT Transit Hartford Facility Improvements/Expansion	Y		FTA	33,750			33,750
	CRCOG	DOT04010011CN	VARIOUS	CT Transit	CT Transit Hartford Facility Expansion - Additional	Y		State	150			150
	CRCOG	DOT0426	Hartford	GHTD	GHTD Paratransit Vehicles FY 19	Y		FTA	3,250			3,250
	CRCOG	DOT0426	Hartford	GHTD	GHTD Union Station FY 19	Y		FTA	625			625
	CRCOG	DOT0426	Hartford	GHTD	GHTD Admin Capital/Misc Support FY 19	Y		FTA	500			500
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5310 Program - FFY 2019 (See Program of Projects)	Y		FTA	4,323			4,323
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5311 Program - FFY 2019 (See Program of Projects)	Y		FTA	3,294			3,294
	CRCOG	DOT01702384	VARIOUS	NA	Transit Capital Planning	Y		FTA	450			450
	CRCOG	DOT01703192CN	VARIOUS	Off-System	Off System Bridge (Housatonic RR) (Additional)	Y		State	4,000			4,000
	CRCOG	DOT03000192PE	VARIOUS	ALL	Rail Fleet - Replacement Program Design & Spec Development	Y		State	10,000			10,000
	CRCOG	DOT01703502PL	VARIOUS		Bus Operational Integration Study	Y		State	400			400
	CRCOG	DOT01703438EQ	VARIOUS	VARIOUS	Transit District Match Requirements	Y		State	3,500			3,500
	CRCOG	DOT03200016CN	VARIOUS	Hartford Line	Hartford Line-Windsor Locks (FDP 10/2/2019)	Y		State	55,000			55,000
	CRCOG	DOT04010012CN	VARIOUS	CT Transit	CT Transit Hartford Facility Improvements/Expansion	Y		FTA	25,000			25,000
	CRCOG	DOT0426	Hartford	GHTD	GHTD Paratransit Vehicles FY 2020	Y		FTA	3,250			3,250
	CRCOG	DOT0426	Hartford	GHTD	GHTD Union Station	Y		FTA	1,000			1,000
	CRCOG	DOT0426	Hartford	GHTD	GHTD Admin Capital/Misc Support FY 2020	Y		FTA	500			500
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5310 Program - FFY 2020 (See Program of Projects)	Y		FTA	4,397			4,397
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5311 Program - FFY 2020 (See Program of Projects)	Y		FTA	3,350			3,350
	CRCOG	DOT01702384	VARIOUS	NA	Transit Capital Planning	Y		FTA	450			450
	CRCOG	DOT0300	VARIOUS	ALL	Rail Fleet (111 Coaches @ $5m/coach)	Y		State	555,000			555,000
	CRCOG	VARIOUS	VARIOUS	Hartford Line	Hartford Line	Y		State	50,000			50,000
	CRCOG	DOT0400	VARIOUS	CT Transit	Bus Service Expansion Fleet	Y		State	22,000			22,000
	CRCOG	DOT01703438EQ	VARIOUS	VARIOUS	Transit District Match Requirements	Y		State	3,500			3,500
	CRCOG	DOT0426	Hartford	GHTD	GHTD Paratransit Vehicles FY 2021	Y		FTA	2,500			2,500
	CRCOG	DOT0426	Hartford	GHTD	GHTD Union Station	Y		FTA	1,500			1,500
	CRCOG	DOT0426	Hartford	GHTD	GHTD Admin Capital/Misc Support FY 2021	Y		FTA	750			750
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5310 Program - FFY 2021 (See Program of Projects)	Y		FTA	4,397			4,397
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5311 Program - FFY 2021 (See Program of Projects)	Y		FTA	3,350			3,350
	CRCOG	DOT01702384	VARIOUS	NA	Transit Capital Planning	Y		FTA	450			450
	CRCOG	DOT0300	VARIOUS	ALL	Rail Fleet (Locomotive Spec Development)	Y		State	12,000			12,000
	CRCOG	VARIOUS	VARIOUS	Hartford Line	Hartford Line	Y		State	50,000			50,000
	CRCOG	DOT03200008CN	VARIOUS	Hartford Line	Hartford Line (Phase 3b)	Y		State	122,000			122,000
	CRCOG	DOT03200015CN	VARIOUS	Hartford Line	Hartford Line-Windsor Station (FDP 9/16/2020)	Y		State	53,000			53,000
	CRCOG	DOT03200012CN	VARIOUS	Hartford Line	Hartford Line-North Haven Station (FDP 7/1/2020)	Y		State	42,000			42,000
	CRCOG	DOT01703438EQ	VARIOUS	VARIOUS	Transit District Match Requirements	Y		State	3,500			3,500
	CRCOG	DOT0426	Hartford	GHTD	GHTD Paratransit Vehicles FY 2022	Y		FTA	4,375			4,375
	CRCOG	DOT0426	Hartford	GHTD	GHTD Union Station	Y		FTA	1,000			1,000
	CRCOG	DOT0426	Hartford	GHTD	GHTD Admin Capital/Misc Support	Y		FTA	1,000			1,000
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5310 Program - FFY 2022 (See Program of Projects)	Y		FTA	4,397			4,397
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5311 Program - FFY 2022 (See Program of Projects)	Y		FTA	3,350			3,350
	CRCOG	DOT01702384	VARIOUS	NA	Transit Capital Planning	Y		FTA	450			450
	CRCOG	DOT03200008CN	VARIOUS	Hartford Line	Hartford Line (Phase 3b)	Y		State	120,000			120,000
	CRCOG	DOT03200014CN	VARIOUS	Hartford Line	Hartford Line-West Hartford Station	Y		State	40,000			40,000
	CRCOG	DOT0426	Hartford	GHTD	GHTD Paratransit Vehicles FY 2023	Y		FTA		4,375		4,375
	CRCOG	DOT0426	Hartford	GHTD	GHTD Union Station	Y		FTA		1,000		1,000
	CRCOG	DOT0426	Hartford	GHTD	GHTD Admin Capital/Misc Support	Y		FTA		1,000		1,000
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5310 Program - FFY 2023 (See Program of Projects)	Y		FTA		4,397		4,397
	CRCOG	VARIOUS	VARIOUS	VARIOUS	Section 5311 Program - FFY 2023 (See Program of Projects)	Y		FTA		3,350		3,350
	CRCOG	DOT01702384	VARIOUS	NA	Transit Capital Planning	Y		FTA		450		450
	CRCOG	DOT0300	VARIOUS	ALL	Rail Fleet (24 locomotives @ $10 m/unit)	Y		State		240,000		240,000
	CRCOG	DOT03200017CN	VARIOUS	Hartford Line	Hartford Line-Enfield Station	Y		State		42,000		42,000
	CRCOG	DOT03200013CN	VARIOUS	Hartford Line	Hartford Line-Newington Station	Y		State		55,000		55,000
	CRCOG	N/A	Avon	See Description	Avon - S-Curve improvement at Farmington town line	Y		FHWA			2100	2100
	CRCOG	N/A	Avon	Rt 44	Avon - Rt 44 between Rt 167 and Climax Road	Y		FHWA		16000		16000

CRCOG	N/A	Bloomfield	See Description	Bloomfield - Rt 305 (East Newberry Road)	Y		FHWA			2400	2400
CRCOG	N/A	Buckland	See Description	Buckland: Redstone Rd Extension	Y		FHWA		125000	300000	425000
CRCOG	N/A	Buckland	See Description	Buckland: Realignment of Pleasant Valley Road	Y		FHWA		22200		22200
CRCOG	N/A	Canton	Rt 44	Canton- Rt 44 Improvements (from Dyer Ave to Dowd Ave)	Y		FHWA			4700	4700
CRCOG	N/A	Canton	Rt 44	Canton - Rt 44 improvements (from Dowd Ave to Rt 177)	Y		FHWA			5000	5000
CRCOG	N/A	Canton	Rt 44	Canton - Rt 44 improvements (Rt 177 to Rt 167)	Y		FHWA			8000	8000
CRCOG	N/A	Canton	Rt 44	Canton - Rt 44 improvements (New Hartford TL to Rt 179)	Y		FHWA			2100	2100
CRCOG	N/A	Enfield	Rt 190	Enfield - Rt 190 Improvements between mall and Hazardville	Y		FHWA			3000	3000
CRCOG	N/A	Enfield	Rt 191	Enfield - Rt 190 / Maple Street traffic and safety improvements	Y		FHWA			900	900
CRCOG	N/A	Enfield	Rt 192	Enfield - Rt 190 Int Improv (Taylor/Scitico and Broad Brook Rd)	Y		FHWA			1600	1600
CRCOG	N/A	Farmington	Rt 177	Farmington - Rt 177 (Bridge)	Y		FHWA		4200		4200
CRCOG	N/A	Farmington	Rt 4	Farmington - Rt 4 Bridge Replacement over Roaring Brk (51-258)	Y		FHWA			3300	3300
CRCOG	N/A	Farmington	New Britain Ave	Farmington - New Britain Avenue Reconstruction	Y		FHWA		3500		3500
CRCOG	N/A	Farmington	See Description	Farmington - Post Office Square Driveway	Y		FHWA			1000	1000
CRCOG	N/A	Glastonbury	See Description	Glastonbury - Traffic Signal System (CMAQ)	Y		FHWA		1900		1900
CRCOG	N/A	Granby	Rt 10	Granby - Rt 10 at Meadown Brook Road	Y		FHWA			1000	1000
CRCOG	N/A	Manchester	Rt 83	Manchester - Int Improv at Route 83 (76-199)	Y		FHWA		2000		2000
CRCOG	N/A	Newington	Rt 175	Newington - Rt 175 - Fenn Road / Cedar Street Improvements	Y		FHWA		2000		2000
CRCOG	N/A	Newington	Rt 176	Newington - Rt 175 - Fenn Road / Ella Grasso Blvd Improvements	Y		FHWA		1000		1000
CRCOG	N/A	Newington	Rt 9	Newington - Rt 9 on-ramp at Paul Manafort Drive	Y		FHWA			7500	7500
CRCOG	N/A	Rocky Hill	See Description	Cromwell Ave/West St/France St Intersection Improvements- (Phase 1)	Y		FHWA		250		250
CRCOG	N/A	Rocky Hill	See Description	Cromwell Ave/West St/France St Intersection Improvements- (Phase 2)	Y		FHWA			1300	1300
CRCOG	N/A	Rocky Hill	See Description	Brook St / Henkel Way Intersection Improvements	Y		FHWA		800		800
CRCOG	N/A	Rocky Hill	West Street	West Street / Interstate 91 Interchange Improvements	Y		FHWA		2300		2300
CRCOG	N/A	Rocky Hill	Cromwell Ave	Cromwell Ave Improvements from Elm St to New Britain Ave	Y		FHWA			5300	5300
CRCOG	N/A	Rocky Hill	See Description	Study Area Transit Facility Improvements	N		FHWA		50		50
CRCOG	N/A	Rocky Hill	See Description	Study Area Sidewalk and Pedestrian Facility Improvements	N		FHWA		4400		4400
CRCOG	N/A	Rocky Hill	See Description	Study Area Bicycle Facility Enhancements	N		FHWA		2500		2500
CRCOG	N/A	Rocky Hill	West Street	West St / Main St Intersection Improvements	Y		FHWA		1100		1100
CRCOG	N/A	Rocky Hill	Brook Street	Brook Street Neighborhood Streetscape and Multimodal Improvements	Y		FHWA			2300	2300
CRCOG	N/A	Rocky Hill	Cromwell Ave	Cromwell Avenue / Inwood Road Intersection Improvements	Y		FHWA		500		500
CRCOG	N/A	Rocky Hill	Cromwell Ave	Cromwell Avenue / Brook Street Intersection Improvements	Y		FHWA		1300		1300
CRCOG	N/A	Rocky Hill	Elm Street	Elm Street Connector Roadway	Y		FHWA			3200	3200
CRCOG	N/A	Simsbury	Nod Road	Simsbury - Nod Road Reconstruction	Y		FHWA		3800		3800
CRCOG	N/A	Simsbury	Rt 10	Simsbury - Rt 10 at Rt 185	Y		FHWA			1000	1000
CRCOG	N/A	Simsbury	Rt 10	Simsbury - Rt 10 at Ely Lane and Hoskins Road	Y		FHWA			1300	1300
CRCOG	N/A	Simsbury	Rt 10	Simsbury - Rt 10 between Ely Lane and Wolcott Rd	Y		FHWA			1600	1600
CRCOG	N/A	Somers	Rt 190	Somers - Rt 190 at Maple St / School Street	Y		FHWA			5000	5000
CRCOG	N/A	Somers	Rt 190	Somers - Rt 190 at Route 83	Y		FHWA			2100	2100
CRCOG	N/A	Tolland	Rt 74	Tolland - Rt 74 Repair Deck and Pain Bridge over 84)(142-148)	Y		FHWA		2200		2200
CRCOG	N/A	Vernon	Rt 74	Vernon - Reconstruct Rt 74 (Maple to Harlow) (146-165)	Y		FHWA		2800		2800
CRCOG	N/A	Vernon	Rt 74	Vernon - Reconstruct Rt 74 (Orchard to Elm)(146-184)	Y		FHWA		4500		4500
CRCOG	N/A	West Hartford	North Main	West Hartford Corridor Study - North Main Street Complete Streets Improvements	N		FHWA			2100	2100
CRCOG	N/A	West Hartford	See Description	West Hartford Corridor Study - Bishops Corner Improvements	Y		FHWA			400	400
CRCOG	N/A	West Hartford	North Main	West Hartord Corridor Study - North Main Street off-road Bike Path to Town Center	N		FHWA		130		130
CRCOG	N/A	West Hartford	See Description	West Hartford - Bishops Corner intersection improvements	Y		FHWA			4760	4760
CRCOG	N/A	West Hartford	Rt 44	West Hartford - Rt 44 / Steele Road improvements	Y		FHWA			700	700
CRCOG	N/A	Wethersfield	Rt 15	Wethersfield - Rt 15 / Rt 175 Interchange	Y		FHWA		21000		21000
CRCOG	N/A	Wethersfield	See Description	Wethersfield - Nott St to Arrow Road (Ped improv, access mgmt)	Y		FHWA			1500	1500
CRCOG	N/A	Wethersfield	Rt 175	Wethersfield - Route 175 at Willow Street	Y		FHWA		300		300
CRCOG	N/A	Wethersfield	Rt 175	Wethersfield - Rt 175 at Silas Deane Highway	Y		FHWA		200		200
CRCOG	N/A	Windsor	Rt 305	Windsor - Rt 305 (Interchange 37 to Brookville Rd)	Y		FHWA			2600	2600
CRCOG	N/A	Windsor	Rt 305	Windsor - Rt 305 (Addision Road and Marshall Phelps)	Y		FHWA			2100	2100
CRCOG	N/A	Windsor Locks	Various	Bradley Airport-Improved transit (Study, implementation; bus connection to rail)	N		Unfunded			5000	5000
CRCOG	N/A	Windsor Locks	Bradley Park Road	Bradley Airport-East Granby - Bradley Park Road Improvements	Y		FHWA			2400	2400
CRCOG	N/A	Windsor Locks	Bradley Park Road	Bradley Airport-East Granby - Bradley Park Road Extension	Y		FHWA			3200	3200
CRCOG	N/A	Windsor Locks	Northern Bradley Conne	Bradley Airport-Northern Bradley Connector	Y		FHWA		30000		30000
CRCOG	N/A	Windsor Locks	Rt 75	Bradley Airport-Better Roadway Access (Rt 75 Backage Roads)	Y		FHWA		15000		15000
CRCOG	N/A	Windsor Locks	Rt 75	Bradley Airport-Route 75 Improvements (PE and CON)	Y		FHWA		7500		7500
CRCOG	N/A	Various	See Description	Complete East Coast Greenway through CRCOG	N		FHWA		56000		56000
CRCOG	N/A	Various	See Description	Bicycle and Pedestrian Projects-Advance other trails	N		FHWA		6000	6000	12000
CRCOG	N/A	Various	See Description	Bicycle and Pedestrian Projects-Other bike/ped programs	N		FHWA		3500	3500	7000
CRCOG	N/A	Bolton	See Description	Route 6 Corridor Study-Bolton Notch – Interim Safety Improvements at Notch Road	Y		FHWA		200		200
CRCOG	N/A	Bolton	See Description	Route 6 Corridor Study-Bolton Notch – Low-speed Boulevard Improvements	N		FHWA			3000	3000

CRCOG Highway (non-Interstate)

CRCOG	N/A	Bolton	See Description	Route 6 Corridor Study-Bolton Notch – Pedestrian and Bicycle Improvements	N		FHWA		300		300
CRCOG	N/A	Bolton	See Description	Route 6 Corridor Study-Bolton Crossroads – Route 6 Speed Mitigation	Y		FHWA		2000		2000
CRCOG	N/A	Bolton	See Description	Route 6 Corridor Study-Bolton Crossroads – Phase 1: Route 6-Route 44 Connector	Y		FHWA		3000		3000
CRCOG	N/A	Bolton	See Description	Route 6 Corridor Study-Bolton Crossroads – Phase 2: Village Streets West	Y		FHWA			3500	3500
CRCOG	N/A	Bolton	See Description	Route 6 Corridor Study-Bolton Crossroads – Phase 3: Village Streets East	Y		FHWA			3000	3000
CRCOG	N/A	Coventry	See Description	Route 6 Corridor Study-Coventry Ridge – Phase 1: Site Access (Future Reloc. South Street)	N		FHWA		10000		10000
CRCOG	N/A	Coventry	See Description	Route 6 Corridor Study-Coventry Ridge – Phase 2: Relocated South Street	N		FHWA			7000	7000
CRCOG	N/A	Andover	See Description	Route 6 Corridor Study-Historic Andover – Pedestrian and Speed Mitigation Improvements	N		FHWA		2000		2000
CRCOG	N/A	Andover	See Description	Route 6 Corridor Study-Andover – Hop River Trail Access Improvements, Route 6	N		FHWA		5		5
CRCOG	N/A	Andover	See Description	Route 6 Corridor Study-Historic Andover – Phase 1: Village Streets East	Y		FHWA		6000		6000
CRCOG	N/A	Andover	See Description	Route 6 Corridor Study-Historic Andover – Phase 2: Village Streets West	Y		FHWA			3000	3000
CRCOG	N/A	Columbia	See Description	Route 6 Corridor Study-Lighthouse Corners – Phase 1: Roundabout	Y		FHWA		10000		10000
CRCOG	N/A	Columbia	See Description	Route 6 Corridor Study-Lighthouse Corners – Phase 2: Village Streets	Y		FHWA			5000	5000
CRCOG	N/A	Columbia	See Description	Route 6 Corridor Study-Lighthouse Corners – Route 66 East Flooding Mitigation	N		FHWA		750		750
CRCOG	N/A	Columbia	See Description	Route 6 Corridor Study-Columbia – Route 66 East Roadway Improvements	Y		FHWA			4500	4500
CRCOG	N/A	Columbia	See Description	Route 6 Corridor Study-Columbia – Cards Mill Road Intersection Improvements	Y		FHWA		600		600
CRCOG	N/A	Columbia	See Description	Route 6 Corridor Study-Columbia – Hop River Trail Access Improvements, Route 66 East	N		FHWA		30		30
CRCOG	N/A	Bolton, Andover, Columbia	See Description	Route 6 Corridor Study-Gateway Signing (Bolton, Andover, Columbia)	N		FHWA		40		40
CRCOG	N/A	Bolton, Andover, Columbia	See Description	Route 6 Corridor Study-Route 6 Side Road Intersection Improvements	Y		FHWA		100		100
CRCOG	N/A	Bolton, Andover, Columbia	See Description	Route 6 Corridor Study-Program of Bicycle Safety Improvements	N		FHWA		15		15
CRCOG	N/A	Bolton, Andover, Columbia	See Description	Route 6 Corridor Study-Hop River Trail Surface Improvements	N		FHWA		1000		1000
CRCOG	N/A	Bolton, Andover, Columbia	See Description	Route 6 Corridor Study-Program of Hop River Trail Signing Improvements	N		FHWA		30		30
CRCOG	N/A	Bolton, Andover, Columbia	See Description	Route 6 Corridor Study-Park and Ride Lot Improvements	N		FHWA		75		75
CRCOG	N/A	Bolton, Andover, Columbia	See Description	Route 6 Corridor Study-Express Bus Improvements	N		Unfunded		50		50

ALLOCATION OF ANTICIPATED FHWA FUNDS TO MPO/RPO
2019-2045

	SYSTEM IMPROVEMENTS	SYSTEM PRESERVATION		
Distribution	**Weights**			
Vehicle Miles of Travel	0.25	0.25		
Volume to Capacity	0.75	0		
Lane Miles	0	0.75		
MPO/RPO			**MAJOR PROJECTS OF STATEWIDE SIGNIFICANCE**	**TOTALS**
Southwest MPO	1,247,718,585	1,395,377,517	986,400,000	3,629,496,102
Housatonic Valley MPO	795,276,632	1,176,217,827	400,000,000	2,371,494,458
Northwest Hills RPO	193,444,278	1,251,775,570	14,282,400	1,459,502,249
Naugatuck Valley MPO	902,216,700	1,525,205,994	64,360,000	2,491,782,694
GBVMPO	1,581,238,578	1,486,859,506	686,694,808	3,754,792,892
South Central MPO	1,958,758,671	2,197,972,654	502,196,808	4,658,928,134
Capitol MPO	3,435,253,922	4,289,839,748	3,036,580,597	10,761,674,266
Lower Connecticut River MPO	486,918,876	1,227,228,977	96,900,000	1,811,047,853
Southeastern MPO	688,275,436	1,664,487,304	194,666,396	2,547,429,137
Northeastern RPO	196,368,562	1,013,240,263	-	1,209,608,825
Totals	11,485,470,240	17,228,205,360	5,982,081,009	34,695,756,610

Note: System Improvements are projects which enhance safety, improve mobility, increase system productivity or promote economic growth.

System Preservation are projects such as repaving roadways, bridge repair or replacement and any other form of reconstruction in place.

Author: Rose A. Eade 6/4/2018

From: Wojenski, Maribeth C <Maribeth.Wojenski@ct.gov>
Sent: Thursday, March 14, 2019 1:37 PM

PLEASE FORWARD TO STAFF THAT IS PREPARING THE MTP

Hello
The MTPs have been reviewed by FHWA, FTA and CTDOT.
Throughout most, FTA commented that there was no financial table for FTA funds as there is for FHWA funds.

As you are aware, the Department stated that all FTA funds, over the next 25 years, are needed to keep our current system in a state of good repair and we provided you a list of transit projects that would be using these funds.

After discussions with Leah Sirmin, from FTA, she suggested that a table be included in each MTP which shows the revenues and expenditures per MPO, along with a list of applicable projects. A statement should be in the Plan that basically states that maintaining the transit system in a state of good repair and implementation of the TAM plan, requires the use of all transit funds for this timeframe.

On that note, I have developed a financial table for your use. This is attached.You should include the list of transit projects that pertain to your MPO and any statewide/multiregional project that impacts your MPO to show expenditures. (I am resending the project lists)

Please incorporate the table, along with the list of Transit projects, into your MTP.

Thank you

Maribeth Wojenski
Transportation Assistant Planning Director
CTDOT
Bureau of Policy and Planning
Statewide Coordination and Modeling

Appendix 6

Appendix 5 Chapter 11 Innovative Finance

Appendix 5-1: Examples of Regional Transportation Sales Taxes

Metro Region	Description
Salt Lake City	• In 2000, a breakthrough sales tax measure to fund the TRAX light rail system was successful. • Local option sales tax by county has been the principal transit funding source since the 1970s; several rounds were approved through 2006; now represent 64% of Utah Transit Authority operating budget (including debt service).[1] • In 2015, legislation authorized a new .25% local option sales tax increment, which passed in some but not all counties. In 2018, legislation reforming UTA renewed the local option in the counties that rejected it in 2015 and allowed Salt Lake County to adopt by Council vote rather than referendum. County has adopted, after receiving resolutions in support from its municipalities. The new revenues will be divided among UTA for regional transit, the cities, and the county—all for transportation projects.[2]
Denver	• After a 1997 defeat, a regional sales tax was approved in 2004 to fund the FasTracks regional transit expansion program. This includes several new rail and BRT lines and Union Station. • The referendum was conducted in the eight-county RTD District. It raised the sales tax in the RTD District from 0.6% to 1.0%. The 0.4% increase was projected to fund approximately $4.7 billion in bond issue and pay-as-you-go capital.[3] • Slower than expected sales tax growth and increased project costs have combined to slow the timetable for completing some corridors. RTD has opted not to return to the ballot for an additional sales tax increase.
Los Angeles	• LA County is of regional scale and coincides with LA Metro, the regional transit agency. • A history of transportation sales tax wins dating back to 1980. Since 1996, sales tax referenda require a 2/3 vote. In 2009, voters approved Measure R—a ½ cent sales tax to sunset in 2039. In 2012, Measure J which would have extended Measure R by 30 years, was defeated. • In 2016, voters passed Measure M, the largest regional transportation sales tax measure in US history. It removes the sunset from Measure R and adds another ½ cent with no sunset. • Measure M estimated to generate $120 billion in capital, allocated 35% new transit construction, 17% highway improvements, 20% bus operations, 17% local city projects. A strongly vetted specific project list with some flexibility to adapt.[4]
Seattle	• A transit-only example. Sound Transit, the regional transit agency, covers three counties (King, Pierce, Snohomish). Referenda require a majority in the three-county district. The first two tax measures to fund Sound Transit were approved by voters in 1996 and 2008.[5] • In 2016, voters approved "ST3", including the following tax increases: 0.5% sales tax, 0.8% motor vehicle excise tax, and a property tax increase of 0.025% of assessed value.[6] The referendum raises the total sales tax in King County to 9.5% and Pierce County to 7.9%. • The principal example of a referendum including more sources than the sales tax alone. • The new taxes are projected to generate $54 billion in capital, through bonds and pay-as-you-go. ST3 includes light rail (62 new miles), BRT, Rapid Bus, and commuter rail expansion, and improved station access. A detailed, vetted project list.[7]

[1] https://le.utah.gov/interim/2017/pdf/00004230.pdf

[2] http://wfrc.org/PublicInvolvement/GovernmentalAffairs/SB136/SLCo_4thQuarter_LocalOptSalesTaxSumm.pdf

[3] http://www.rtd-fastracks.com/main_33

[4] http://theplan.metro.net/wp-content/uploads/2018/05/report-theplan-lessons-learned-2018.pdf

[5] https://www.soundtransit.org/system-expansion/building-system/system-planning/history

[6] https://st32.blob.core.windows.net/media/Default/Document%20Library%20Featured/Sept_2016/Factsheet_ST3_Funding_092816.pdf

Metro Region	Description
Atlanta and GA Statewide	• A complex and illustrative history; in the end, successful referenda in metro Atlanta and other regions in Georgia. • In 2010 the Legislature passed the Transportation Improvement Act which enabled regional referenda on a new 10-year 1% **"**T-SPLOST" (Transportation Special Purpose Local Option Sales Tax) in each of 12 regional planning districts. The law also created Regional Transportation Roundtables (RTRs) of county and city officials to develop official project lists, which were combinations of highways and transit. • In 2012, nine of the 12 regions voted against the 10-year T-SPLOST, including the 10-county Metro Atlanta region. However, three regions approved the sales tax and are collecting and spending sales tax revenues.[8] • After 2012 a new approach evolved in Metro Atlanta, resulting in legislation in 2015 allowing three referenda: combined highway-transit T-SPLOSTs in both the City of Atlanta and the non-Atlanta balance of Fulton County, and a transit-only referendum in the City of Atlanta to support expansion by MARTA (the region al transit authority) within the city limits. (MARTA operations are funded by a separate voter-approved sales tax in its participating counties.) • In 2016, all three referenda were approved. Atlanta approved the MARTA expansion sales tax at 0.5% and the T-SPLOST tax at 0.4%, raising its total sales tax to 8.9%. The Fulton T-SPLOST was approved at 0.75%, raising the total county rate outside Atlanta to 7.75%.
Tampa	• Hillsborough County referenda were defeated in 2010 and 2014; these were transit-only. • In 2018, a 1 cent sales tax increase was approved. it raises the total sales tax in Hillsborough County to 8.5%. It is split and will raise about $30 billion over its 30-year term. • The new taxes are projected to generate $30 billion. The split: 45% to Hillsborough Area Rapid Transit, 54% for highway projects.[9]
Northern VA	• A different model: a legislatively mandated regional sales tax, rather than voter-approved. • Northern Virginia Transportation Authority created by the General Assembly in 2002. It consists of four counties (Arlington, Fairfax, Loudoun and Prince William) and five independent cities (Authority is made up of nine jurisdictions including: the counties of; as well as the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park; it is both an MPO and a transportation provider. • In 2013, the General Assembly imposed a 0.7% sale tax increase in the NVTA district, bringing the total state and local sales tax to 6.0%. The regional sales tax is a dedicated source of funding for NVTA, generating about $250 million in annual dedicated revenues. • NVTA allocates regional sales tax revenues to projects in its district and can finance projects through the issuance of long term bonds. Seventy percent of revenues are allocated to regional projects, 30% to local projects approved by NVTA.[10]

[7] http://soundtransit3.org/

[8] http://www.nashvillempo.org/docs/symposiums/transit/Dave_Williams.pdf

[9] http://floridapolitics.com/archives/280117-hillsborough-transportation-tax

[10] https://thenovaauthority.org/

Appendix 5-2: Off-Site Joint Development Projects in the MBTA Rail System

Project	Description[11]
Assembly Square	• New infill station on Orange Line in Somerville two miles from downtown Boston. • Initiated by developer of adjoining land (Federal Realty Investment Trust), which contributed $15 million (including all pre-construction costs) and, by agreement with the MBTA, planned, designed, and permitted the station. • Station unlocked a 45-acte, five million square foot mixed-use TOD district. • New $56 million station with 6,000 daily trips cost the MBTA zero; funded by developer, FTA, MPO Flex Funds, and state Economic Development.
Boston Landing	• New $20 million infill commuter rail station in Brighton neighborhood of Boston, on MBTA Worcester-Framingham-Boston Line. • Entire station funded and built by New Balance and its development partners, to enable a major mixed-use TOD: New Balance corporate HQ, multi-family housing, Celtics' and Bruins' new practice facilities, other office and retail.
Yawkey Station	• Commuter rail station next to Fenway Park on MBTA Worcester-Framingham-Boston Line; serves Longwood Medical Area, Kenmore Square, and Red Sox. • MBTA replaced the old platform with a full-service high-platform station in 2014. • Developer of adjacent Fenway Center TOD is funding and building horizontal and vertical connections to the surrounding parcels, incorporating the station into a dense, weather-protected TOD environment and the surrounding street fronts.
Lynn River Works	• Existing commuter rail stop on MBTA's North Shore Line; now a bare gravel flag stop with minimal daily use. • A developer has been permitted for 1,250 units of waterfront multi-family housing. He has negotiated with the MBTA to fund and build a new, full service station as part of his project.

[11] For a summary of these projects, see http://www.abettercity.org/assets/images/Transportation%20Dividend%20-%20FINAL%20-%20012918.pdf, p. 46.

Appendix 5-3: Rail Corridor Public-Private Partnerships in the US

Project	Description
Denver Eagle Partnership (Commuter Rail)	• In 2010, Denver Regional Transit District (RTD) entered concession agreement with Denver Transit Partners, a special purpose company owned by Fluor Enterprises, Uberior Investments, and Laing Investments. • A single P3 contract to design, build, finance, operate, and maintain three new commuter rail lines (including flagship line from Union Station to Airport) and the Commuter Rail Maintenance Facility; acquire 54 commuter rail cars; and operate the Denver Union Station train shed. Total capital investment: $2.2 billion.[12] • All three lines are stand-alone facilities. Seamless interface with other RTD services, but they do not share trackage, operations, or staff with the publicly-operated system. This allows the P3 concessionaire to be solely responsible for the segments of the system it controls and not depend on publicly operated services for the performance of its assets.
Maryland Purple Line (Light Rail)	• 16-mile, 21-station circumferential light rail line that will connect several communities in Maryland, from Bethesda in Montgomery County to New Carrollton in Prince George's County. • Intersects four radial Metrorail corridors owned and operated by the Washington Metropolitan Area Transit Authority WMATA), all three lines of the MARC commuter rail system, and Amtrak's Northeast Corridor service. Seamless transfers, but physically and operationally separate. • In 2016, Maryland DOT and its subsidiary, Maryland Transit Administration, entered into a P3 agreement with Purple Line Transit Partners, a special purpose company comprised of design, construction, and maintenance firms to design, build, finance, operate, and maintain the asset. Capital cost: $2.65 billion.[13]
Brightline (Intercity Rail)	• A privately financed, built, and operated intercity rail line in Florida. Phase I completed and operating, connecting downtown Miami, Fort Lauderdale, and West Palm. • The entire Phase I project, including three stations and extensive joint development, undertaken by subsidiaries of Florida East Coast Industries (FECI), the Flagler railroad and real estate enterprise that shaped South Florida a century ago and still owned the entire coastal right of way, on which it operates a profitable freight service. Phase I is thus not really a P3, but a private business improving assets it already owned. • Phase II, from West Palm to Orlando, is under construction. FECI did not own this right of way and had to purchase it from a state agency. Phase III, from Orlando to Tampa, involved a recent RFP by the state for right of way alongside I-4; Brightline was the sole bidder. • Brightline is completely separate from the public transit services with which it interfaces.[14] • In late 2018, Virgin Atlantic became a major investor; Brightline renamed Virgin Trains USA.

[12] https://www.transportation.gov/policy-initiatives/build-america/eagle-p3-project-denver-co
[13] https://www.transportation.gov/tifia/financed-projects/purple-line-project
[14] Add cite.

Appendix 7

Appendix 6 Chapter 13 Public Involvement

Appendix 6-1: List of Stakeholder Interviewees and Interview Details

The following individual meetings were held with stakeholders from a wide variety of industries to better understand transportation needs for the CRCOG region:

1. **09/06/18**
   Kevin Dillon; Bradley Airport; Executive Director
2. **09/13/18**
   Jason Rojas; Trinity College; President's Chief of Staff
3. **09/13/18**
   Emil Frankel; Eno Center for Transportation (+ Consultant); President
4. **09/13/18**
   Tom Trutter; UConn Health Center; TBD
5. **09/21/18**
   David Kooris; DECD; Deputy Commissioner
6. **09/26/18**
   Don Shubert; CT Construction Industries; President
7. **09/28/18**
   Richard Andreski; CT DOT; Bureau Chief, Public Transportation
8. **10/02/18**
   Michael Freimuth; Capital Region Development; Executive Director
9. **10/09/19**
   David Griggs; Metro Hartford Alliance; CEO
10. **12/05/18**
    Maria Leclerc; East Hartford; Mayor

Appendix 6 Chapter 13 Public Involvement
Appendix 6-2: List of Focus Group Attendees and Meeting Details

Focus Group Session – Transit
Tuesday, October 30th, 2018
Union Station, 1 Union Place, Hartford, CT 06103
Stephen Gazillo; AECOM
Krystal Oldread; AECOM
Kevin Tedesco; AECOM
Tim Malone; CRCOG
Rob Aloise; CRCOG
Maureen Lawrence; CTDOT
Lisa Rivers; CTDOT
Cole Pouliot; CT Transit; HNS
Josh Rickman; HNS
Mary Tomolonius; CACT
Vicki Shotland; GHTD
Lyle Wray; CRCOG
Marlene Schempp; Way to Go CT

Focus Group Session – Highway System, Congestion and Freight Movement
Wednesday, October 31st, 2018
Union Station, 1 Union Place, Hartford, CT 06103
Stephen Gazillo; AECOM
Kevin Tedesco; AECOM
Rob Aloise; CRCOG
Lyle Wray; CRCOG
Tim Malone; CRCOG
Ed Perzanowski; CT Rides
Russell McDermott; CT Rides
David Hiscox; CT DOT/OW Permits
Thomas Maziarz; CT DOT
Kevin Burnham; CT DOT/Highway Design
Dave Sousa; CDM Smith
Joe Scully; MTAC
Charles Hunter; GWRR Services, Inc.
Molly Parsons; CT Airport Authority

Focus Group Session – Underserved Population Groups
Friday, November 16th, 2018
CRCOG, 241 Main Street, Hartford, CT 06103
Kevin Tedesco; AECOM
Kerrice Reynolds; CT Rides

Ed Perzanowski; CT Rides
Rebecca M. Townsend; UHart
Anne Morris; Anne Morris Association
Jennifer Gorman; Dept. of Rehab Services
Michelle White; Capital Community College
Sam Pudlin; Center for Latino Progress
Gannon Long; Center for Latino Progress
Marlene Schempp; Way to Go CT
Megan Collins; Disabilities Rights CT
Brandy Petrone; Disabilities Rights CT
Kelly Lacluyze
Lyle Wray; CRCOG

Focus Group Session – Innovative Finance
Friday, November 16th, 2018
CRCOG, 241 Main Street, Hartford, CT 06103
Stephen Gazillo; AECOM
Kevin Tedesco; AECOM
Lyle Wray; CRCOG
Tim Malone; CRCOG
Rob Aloise; CRCOG
Al Raine; AECOM
Alfiya Mirzagalyamova; AECOM

Focus Group Session – Complete Streets
Wednesday, October 10th, 2018
600 East Street New Britain, CT 06051 - East Side Community Center
Kevin Tedesco; AECOM (Attended CRCOG Complete Streets Open House Event)

Appendix 6 Chapter 13 Public Involvement

Appendix 6-3: List of Public Meeting Attendees and Meeting Details

1st Public Meeting
Tuesday, December 4th, 2018
New Britain YMCA, 2nd Floor – Small Gym, 19 Franklin Square, New Britain, CT 06051
Tim Malone; CRCOG
Devon Lechtenberg; CRCOG
Emily Hultquist; CRCOG
Rob Aloise; CRCOG
Stephen Gazillo; AECOM
Caryn DeCrisanti; AECOM
Stacy Schoen; AECOM
Fatima Cecunjanin; AECOM
Ryan Visci; AECOM
Alicia Leite; CT DOT
Grayson Wright; CT DOT
Tom Russell; CCSU
Michael Gaffney; CCSU
Mark Hoffman; Bike New Britain
Bruce Miller; Bike New Britain
Amy Watkins; Watch for Me CT
David McCluskey; West Hartford Resident

2nd Public Meeting
Thursday, December 6th, 2018
Capital Community College, Degnan Hall – Room 1126, 950 Main Street, Hartford, CT 06103
Stephen Gazillo; AECOM
Kevin Tedesco; AECOM
Krystal Oldread; AECOM
Caryn DeCrisanti; AECOM
Isaiah Terry; Capital CC/BSU
Mike Ahem; Town of Berlin
Anthony Cherdis; CLP/Transport Hartford
Ricky Sullivan; Transport Hartford
Dave Mourad; Transport Hartford
Chanel Johnson; Transport Hartford
Quishana Gillett; Transport Hartford
Kathleen Maldonado; Transport Hartford
Sam Pudlin; Transport Hartford
Grayson Wright; CT DOT
Randal Davis; CT DOT
Kerrice Reynolds; CT Rides
Cole Pouliot; CT Transit
Bill Young; Bike/Walk CT
Peter R.Demallie; Design Professionals
Rob Dexter; ECG
Nick Addamo; CDM Smith

Francisco Goicoechea; TSKP Studio
Tina Franklin
Josh Appleby
Andy Sean
Anthony Martinelli
Lee-Ashley Dacres
Chris McArdle; Hartford resident
Hakeem Bamon
David Levitz
Alex Rodriguez
Ernest Mundle
Rev. Narciso Texidor, Jr.
Jerome Mahabeer; Hartford Resident
Francesco Bivona
Quashunda Ashley
Arthur Christian
Jamar Bailey
Mark Maxwell
Kelly McFarland
Allen Ambrose
Guilherme Ribeiro; Capital

3rd Public Meeting
Tuesday, March 12th, 2019
Manchester Community College - 60 Bidwell St, Manchester, CT 06040
Mark Schwabacher
Gary Evans; Town of Wethersfield
Dale Spencer; BSC Group
Caitlin O'Donnell; CTRides
Andrew Bolger

4th Public Meeting
Thursday, March 14th, 2019
Hartford YWCA, 135 Broad St, Hartford, CT 06105
Kathleen Maldonado; Transport Hartford
Tony Cherolis; Center for Latino Progress, Transport Hartford
Tom Russell; CCSU,
Grayson Wright; CTDOT
Jackie

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Our priority is the funding for the construction of a bridge across the Farmington River, extending Monteith Drive and terminating at New Britain Avenue.	Highway System	Kathleen A. Eagen (Town Manager)	Town of Farmington	12/5/2018	Added text to the "Unfunded Arterial Needs" list: Monmouth Drive Extension, Farmington: The Town of Farmington has indicated its desire to prioritize a new arterial network connection by extending Monteith Drive beyond Route 4 to New Britain Avenue, necessitating the construction of a new bridge across of the Farmington River. Additional environmental screening and cost estimating would likely be necessary prior to project funding.
Hartford is Connecticut's hub, and owes its existence to transportation in all forms. The state and municipal governments should do everything they can to ensure transportation and transportation planning are preeminent in every development decision. Adding to the connectivity at all levels ought to be the goal. Using technology to enhance and streamline transportation needs is the wisest use of public resources and will allow communities to thrive; conversely ignoring	New and Emerging Technologies	Bill Doak	East Hartford Gazette	2/22/2019	We agree that technology can help streamline transportation services. We also think that any new technology should be thoroughly tested to ensure that it is safe for the general public.
I have two comments pertaining to the I-84 project in Hartford should be referred to as the "I-84 Hartford Project," the official project name used by CTDOT, rather than the I-84 Viaduct or the viaduct project. Also, there is a reference to its cost as being $3.5 billion, which is not accurate. The estimated cost for the Lowered Highway alternative is about $4-	Highway System, Transit and Rail System, Freight Transport System, Financial Plan	Rich Armstrong	GM2 Associates	3/4/2019	The name will be corrected in the final draft. $3.5 billion is the amount agreed upon between CRCOG and CTDOT. It does not reflect the final construction cost of any one alternative being assessed in the EIS.
Revenues need to be stated in relation to expenditures	Financial Plan		USDOT	3/7/2019	A response to this issue has been developed with CTDOT and is included in the appendix.
Transit revenues confusing – with a stated 3% a year increase, does not add up	Financial Plan		USDOT	3/7/2019	A response to this issue has been developed with CTDOT and is included in the appendix.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Ch 8, p15- In the "Outlook" text box it is unclear which indicators are being referred to.	Transportation Performance Management	Grayson Wright	CTDOT	3/7/2019	This has been corrected.
Ch 10, Financial Plan- What is meant by "facilities"?	Financial Plan		USDOT	3/7/2019	Regarding facilities, this figure comes from CTDOT's long-range plan. A response to this issue has been developed with CTDOT and is included in the appendix. While USDOT only provided $35M/year, total expenditures on transit are much higher, with the majority being provided by the state.
Table 10.2 shows the region receives less than $35M/yr currently and then the plan anticipates $3.2B for transit over the life of the plan. Those numbers seem to be disconnected. The plan should include a clear comparison of anticipated revenues and anticipated expenditures by timeframe.	Financial Plan		USDOT	3/7/2019	A response to this issue has been developed with CTDOT and is included in the appendix. While USDOT only provided $35M/year, total expenditures on transit are much higher, with the majority being provided by the state.
There should be a Section on Parking in this Document. Hartford has an over abundance of surface Parking. Land that could be put to better use. For Instance, Why does UConn offer students that take class at the downtown campus Free parking, they should instead offer them Free bus pass. Why does the State of CT Employees get Free parking when folks in the private sector have to pay for parking.	Sustainable Transportation System	David Cappello	NA	3/8/2019	While we agree that parking management is an important issue, this plan has little control over it. When performing studies, however, CRCOG does take parking and its impacts on land use into consideration. This plan also funds the state's Transportation Demand Management efforts, which do address parking demand. Parking for state employees, however, is currently governed by agreements that are outside of our control. Also, UConn provides a UPASS to all students, allowing unlimited bus and rail ridership within Connecticut.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Page 5, Pie Chart shows 4.5% use Public Transit, and 4.6% User OTHER, if you don't drive/carpool/take public transit/walk/bike what is Other Page 17, Pie Chart shows great than 50% of DOT Operations and Maintenance budget goes toward Public Transportation, yet only 4.5% of people use Public Transportation, something does Not add up, you should clarify this in the document.	Sustainable Transportation System, Financial Plan	David Cappello	NA	3/8/2019	Regarding the "Other" category, the data comes from the Connecticut Household Transportation Survey. On the questionaire, "Other" is an option people can choose, though it is not defined. It is unclear what it means, but it could include trips where multiple modes are used. Transit operations do consume a large portion of DOT's operating budget. Transit operations are more labor intensive than highway operations due to their nature.
Encourage expansion of agriculture planning in your UPWP and your Regional Transportation Plan updates. Incorporate agriculture land use and planning review as part of your intermunicipal review of new land use regulations or amendments. Encourage more data collection and mapping to better understand product sourcing, farm worker and disadvantage population access via transit as well as freight planning for commodity movement. Consider the formation of a Regional Agriculture Council to support existing municipal Ag	Sustainable Transportation System, Transit and Rail System, Freight Transport System	Jeanne Davies	CT Resource Conservation & Development	3/12/2019	CRCOG's process for reviewing municipal land use referrals does include agriculatural considerations. Such considerations are also included in our corridor studies. CRCOG's transportation planning process does not focus on individual occupations, but instead focuses on modes and improving their efficiency. Freight and transit, regardless of user, remain a focus in our plan and improvement projects related to these modes will help all users.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
CRCOG's travel demand model predicts that VMT will increase 13.9% in the region by 2045. Why would we create a regional development and transportation plan that includes premeditated climate disaster? Planned increase in VMT is terrifying to see as the "plan" in CRCOG's draft report.	Highway System	Tony Cherolis	Transport Hartford	3/14/2019	The prediction of 13.9% VMT increase over the 25 year period does not represent a desired end-state. It represents a likely future condition if land-use development patterns continue as they historically have. The plan includes very little capacity increase for existing roads, no new highways, and provisions for expanded transit and walking/biking infrastructure. The only capacity increases are spot improvements for existing congestion problems with significant impacts on air quality. Subsequent to the development of this plan, CRCOG's travel demand model was updated to more accurately reflect the benefits of new transit service in the region. This will allow us to more accurately project VMT reductions caused by transit improvements in the future.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
In 2008, California adopted Senate Bill (SB) 375, which directs the state's 18 regional metropolitan planning organizations (MPOs) to develop regional transportation plans that meet per capita GHG emission reduction targets through the integration of transportation and land use planning. Among the most important changes is a requirement that state agencies stop using Level of Service (LOS) to measure environmental impacts and instead replace it with Vehicle Miles Traveled (VMT). – 2013 state law, now being implemented. What are MPO's in Connecticut doing? - In June 2018, Connecticut adopted a 2030 GHG reduction goal (45% reduction by 2030) and 40% of CT's GHG emissions are from the transportation sector.	Transportation Performance Management	Tony Cherolis	Transport Hartford	3/14/2019	We agree that VMT reduction should be looked at as a potential performance measure. We currently follow federal regulations for performance measures, which do not include VMT or greenhouse gas emissions. In future plans we may look at a limited number of performance measures in addition to the federally required ones. Any such change to our performance measurement program will require thorough vetting through our committees and our Policy Board.
Support the extension of CTfastrak service to Bradley Airport. Increase frequency and marketing and frequency of this connection.		Tony Cherolis	Transport Hartford	3/14/2019	We agree, this is a key recommendation of our Comprehensive Transit Service Analysis.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Don’t put state money into an 800 space parking garage. YES! Implement Comprehensive Service Analysis Recommendations YES! Fewer stops combined with better stop facilities, seating, shelters, and snow clearing at stops would be much appreciated by riders. Bus stop consolidation and more weekend / evening service in Hartford area YES! Downtown Circulator – Is the DASH route worthwhile outside of major events and parades? What are the ridership numbers? The route is confusing, circuitous, slow, and one can walk across town faster. CTfastrak Hospital connector – Why doesn’t the 161 CTfastrak hit the Park and Main Street bus stop hub? Alternative Fuel Deployment - Monitor electric bus technology nationwide and support the move towards sustainable fuel source equipment. This is a weak recommendation.	Transit and Rail System, Airport System Ground Access	Tony Cherolis	Transport Hartford	3/14/2019	Bus stop consolidation and the dash shuttle are proposed to be examined in CRCOG's upcoming Regional Transit Strategy. Changes to Ctfastrak routes have not been made as CTDOT is still conducting a federally required "after study" of the service. For comparison purposes, changes to routes are not advisable until that study is done. CTDOT continues to pursue funding to expand its electric bus fleet. CRCOG remains supportive of these efforts.
TOD, Complete Streets – Is this innovative? This is the default for high quality transit station development in other regions.		Tony Cherolis	Transport Hartford	3/14/2019	While not innovative nationally, a holistic approach to complete streets and TOD would be innovative in this region.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
BRT Corridor expansion to the East – Without a separated guideway or bus lane, isn't this just a high-frequency bus route? Again, it is odd that we are considering basic bus transit improvements common in other cities and regions to be innovative. For the bus frequency improvements to make sense, we need to address: 1. Free parking with no transit pass benefit or parking buy out for 51,000 state employees 2. Lack of meaningful Transportation Demand Management for large Hartford employers and the City of Hartford 3. Low density developments and vacant land along the corridor. High frequency transit requires parallel development of housing and destination density. For this reason, Burnside Ave makes more sense for high-density transit corridor than Silver Lane due to existing housing density.	Sustainable Transportation System, Transit and Rail System	Tony Cherolis	Transport Hartford	3/14/2019	We will take this into consideration and forward the comment to CTDOT. The development of priority bus corridors (including implementation of capital improvements to prioritize bus service) and consideration of surrounding land use is proposed to be examined further witin the upcoming regional transit strategy.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
The frequency (and publicity) for the primary transit connector at Bradley, the Bradley Flyer is terrible. Why don't we focus on doing the basics first? Also, CAA is planning to build another giant (800 space) parking and rental car garage. That's way out of step with a sustainable, multimodal transportation future. The frequency for the Hartford Line commuter rail is too low and building a transfer into a transit trip (two seats) is not likely to be popular, especially for visitors and business travelers. I think more people would be interested in a regular shuttle that connects between BDL and Springfield, the other major urban area and rail, bus hub (and tourist destination). Why isn't PVTA running a BDL to Springfield bus like the Bradley Flyer?	Sustainable Transportation System, Transit and Rail System, Airport System Ground Access	Tony Cherolis	Transport Hartford	3/14/2019	We agree that improvements to the Bradley Flyer are needed. The shuttle between Windsor Locks and Bradley is supported by CRCOG as it serves passengers from the north and the south. We cannot address questions regarding PVTA's or CAA's services.
E-scooters and dockless bike share should be part of the plan in the innovations section. New Haven is going the semi-docked route with bikes and e-scooters / e-mopeds. Pioneer Valley is going with a regional, docked e-bike approach. Hartford had a 2018 pilot with Lime dockless bikes and is figuring	Complete Streets, New and Emerging Technologies	Tony Cherolis	Transport Hartford	3/14/2019	This is a good point and we will address it in the final document. CRCOG is currently working to develop a regional RFP for bike share service.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Figure 01.8, US Greenhouse Gas (GHG) Emissions – This figure exists for Connecticut. CT's GHG emissions from the transportation sector (40%) are higher than the US percentage (28%). The CT chart highlights how important it will be for CT to go after GHG reductions from the transportation sector.	Sustainable Transportation System	Tony Cherolis	Transport Hartford	3/14/2019	Thank you for your comment.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
We need to be more realistic about population trends in Metro Hartford. Even with investments in Downtown apartments, Hartford's (city) population is continuing to fall. The Greater Hartford region's population fell by 3,100 between mid-2015 to mid-2016. The population growth projections in the report quoted are unrealistic. Overly optimistic population trend charts tend to increase the pressure to design for more highway lanes, exactly what we don't need. A realistic LRTP would put "Actual" population numbers onto that chart for 2010 through 2018. Because the population growth assumptions are so out of step with reality, I would also question the linear increase in employment growth projections shown in Figure 01.10. This chart could (and should) have actual number for 2010 through 2018.	Sustainable Transportation System	Tony Cherolis	Transport Hartford	3/14/2019	Projections used in this plan were based on the decennial census. They will be updated when the 2020 census is released. CRCOG does not create its own demographic projections (see citations) and uses those that are readily available.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
This plan must include a greenhouse gas reduction target for the transportation sector, and include GHG emissions in prioritizing the region's transportation investments. CT's Transportation Sector produces 40% of the state's GHG emissions, the largest contributing sector by far. The CT legislature passed 2030 GHG reduction targets for the state in June 2018. Without a focused GHG reduction target for the Hartford Region and CT's transportation sector, we are unlikely to hit those critically important goals. A combination of mode shift and vehicle electrification would be needed to meet GHG reduction goals in the transportation sector, including a shift to more rail freight and less trucking freight.	Transportation Performance Management	Tony Cherolis	Transport Hartford	3/14/2019	See answer above to comment 13.
Joint Development at rail and bus rapid transit stations – I love this idea! Locking the most valuable acres right next to the station into zero-revenue and zero-housing is not a sustainable or efficient land use in Transit Oriented Zones. This could also speed up our region's transition to development around high-quality bus rapid transit and rail corridors.	Transit and Rail System	Tony Cherolis	Transport Hartford	3/14/2019	Thank you for your comment. We agree.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Fiscally constrained transportation planning – Active transportation investments in cities and transit-oriented development zones are cost effective - As demonstrated in Portland, Oregon, active transportation investments have the most cost-effective mobility (and safety) benefit when concentrated in urban areas, near transit stations, and in dense town centers. Investing millions into rural rail trails should be considered part of the state's recreations and parks budget, and not a transportation system investment. The gaps in Hartford's bike route network and lack of connections to neighboring towns is both embarrassing and glaringly inequitable. Hartford (city) has the 9th highest rate of zerocar households in the US, higher than 30%. The ravenous consumption of LimeBikes by Hartford's lower income neighborhoods in 2018 barely slaked the city's thirst for more bike transportation. Sadly not a single bike lane or multi-use trail was added in 2018.	Complete Streets, Financial Plan, Innovative Financing	Tony Cherolis	Transport Hartford	3/14/2019	CRCOG supports the continued development of Active Transportation in Hartford and the rest of the region. Regional trails provide an important backbone and a level of comfort that is necessary for broader adoption of cycling.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Make sure the CRCOG metrics don't award projects that increase VMT, increase GHG emissions, and decrease safety for vulnerable users.	Complete Streets, Transportation Performance Management	Tony Cherolis	Transport Hartford	3/14/2019	We will consider this as we develop funding criteria. CRCOG currently considers safety and provision of facilities for vulnerable users in its funding decisions.
Albany Ave, Rt 44 – Highest bike and pedestrian crash corridor in the region, but didn't include bike infrastructure in this retail, commercial, and residential corridor. The project also left out several much-needed pedestrian crosswalks and didn't lower the speed limit to a safer and more appropriate 25 mph. Broad St and Capitol Ave intersection – Added an unnecessary right turn lane and no bike infrastructure into the Frog Hollow neighborhood Main/Wyllys/Jefferson – Supposed safety improvement redesign didn't include bike infrastructure added lanes, deleted pedestrian refuge islands, and set up absurd crosswalks far from desire lines I-84 Hartford Project – Even this project is planning to increase motor vehicle traffic flow by 10% in the face of global climate catastrophe. You get what you design for.	Complete Streets	Tony Cherolis	Transport Hartford	3/14/2019	The design of these projects is outside of the scope of this plan. The plan does, however, encourage a complete streets approach to future designs. The I-84 Hartford Project primarily addresses state of good repair of the facility and not capacity.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Set up metrics and a plan that results in an environmentally and economically viable transportation system. Congestion is the wrong metric to try to design away. Design for mobility and jobs access instead with a multimodal system.	Transportation Performance Management	Tony Cherolis	Transport Hartford	3/14/2019	As required by federal law, CRCOG measures travel time reliability. Congestion mitigation is also strongly linked to improvements in air quality, an issue that disproportionately impacts low-income and minority neighborhoods.
CRCOG Survey – Please indicate your level of support for the following funding options for transportation State Gas Tax – 44.2% Very Supportive, 34.4% Supportive Tolls – 54.0% Very Supportive, 22.6% Supportive.	Public Involvement	Tony Cherolis	Transport Hartford	3/14/2019	CRCOG supports finding and implementing a more stable funding approach for transportation projects.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Very interesting transportation investment priorities from the CRCOG LRTP survey-The highest priority investment ($19 of $100) was for alternatives to single occupancy vehicle travel, and this was with 68% of the respondents saying that they are primarily a car driver. Survey Demographics – Glad that you asked these questions. Noted the CRCOG survey was 30% Female vs 70% Male – Surprised by this. Heavily biased to upper middle-income respondents. Over 50% of the respondents had a household income over $100k. Hartford (city) median household income is $32k, Hartford County median income is $69k, and the state's median income is $93k. The racial diversity of respondents falls short of the Hartford County % for POC representation and over represents 'White' respondents	Public Involvement	Tony Cherolis	Transport Hartford	3/14/2019	The survey was distributed and advertised widely. It is not, however, a scientific survey.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Despite previous effort, there is only one reference to the New England Central railroad in Chapter 6 (Freight Transport System). Despite the focus on developing a "sustainable transportation system" (Chapter 1) as well as the identification of "insufficent regional rail connectivity" as an issue and deficiency for the transit and rail system (Chapter 2), there is no mention of any interest in exploring the resoration of passenger rail service on the New England Central Line. We respectfully request that a recommendation be added to further explore regional rail transit options outside of the Knowledge Corridor and particularly along the New England Rail Line. *(complete letter is attached)*	Transit and Rail System, Freight	Paul M. Shapiro (Mayor) and JoAnn Goodwin (Chair, Planning and Zoning Commission)	Town of Mansfield	3/19/2019	CRCOG has not previously been involved in analysis of passenger service on the New England Central Railroad. CRCOG is open to participating in a study of passenger service in partnership with other affected MPOs.
While a summary of transit recommendations from the Eastern Gateways study is referenced in Chapter 2 (Transit and Rail System), there is no corresponding reference that a section be added summarizing the recommended improvements identified in the Eastern Gateways study for Routes 44 and 195 in Tolland, Bolton, Coventry and Mansfield.	Transit and Rail System	Paul M. Shapiro (Mayor) and JoAnn Goodwin (Chair, Planning and Zoning Commission)	Town of Mansfield	3/19/2019	The Eastern Gateways Study has not been formally endorsed by the CRCOG Policy Board. Without such endorsement, its recommendations cannot be included in full. Once endorsed, they will be added to the next MTP. We will include it in the unfunded corridor needs list.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
There was no mention of the UConn Transportation services within the plan. I know it isn't funded through FTA funds, but there is increasing collaboration with neighboring Windham Region Transit District. The Storrs campus has significant daily ridership during their semesters and also provides limited service during weekends and breaks.	Transit and Rail System	Katharine Otto	Windham Region Transit District	3/22/2019	Will add a description of the services.
Page 02.15 – For the paragraph about AVL technologies. You may also wish to mention that "The University of Connecticut (UConn) Storrs campus shuttles utilizes Passio Technologies and TransLoc for AVL."	Transit and Rail System	Katharine Otto	Windham Region Transit District	3/22/2019	Thank you, we will include this.
Page 02.15 – For the paragraph about APC technologies. "UConn deployed APC through Passio Technologies in 2019."	Transit and Rail System	Katharine Otto	Windham Region Transit District	3/22/2019	Thank you, we will include this.
Page 02.15 – The following sentence is incorrect – "Windham Region Transit District (WRTD) utilizes Ride Systems for AVL but it is used on the back-end by dispatch and does not have front-end passenger facing capabilities to provide real-time information.". The following should be substituted – "Windham Region Transit District (WRTD) utilizes Ride Systems for AVL." WRTD started using the service for all its fixed routes in mid 2018.	Transit and Rail System	Katharine Otto	Windham Region Transit District	3/23/2019	Thank you, this will be corrected.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Page 02.16. Please add the following sentence "Windham Region Transit District utilitizes Ecolane for facilitating its paratransit service. This program includes mobility computing and AVL that is integrated with its scheduling and dispatch software technology. It also has a customer facing component that includes booking, cancellation and arrival notifications via a website, app and SMS." **Page 02.18 and 02.29** – Please correct recommendation 7 as WRTD already has passenger facing AVL. Please correct the sentence to read "Work with WRTD to deploy APC technology on their fleet." **Page 02.19 – 02.21**. Please add something along the following lines "Windham Region Transit District Facility – WRTD completed construction on their new operations and maintenance facility in 2015. The facility includes a dispatch area, conference room, maintenance area and unheated	Transit and Rail System	Katharine Otto	Windham Region Transit District	3/23/2019	Thank you, these changes will be made.
Page 02.21. Please add the following sentence under recommendations – "WRTD Facility Upgrades. Continue to support the planning and development of facility upgrades for WRTD in Mansfield. Facility upgrades include heating the bus storage, adding fuel tanks and adding a bus wash."	Transit and Rail System	Katharine Otto	Windham Region Transit District	3/23/2019	Thank you, this change will be made.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
On page 01.9, the MTP/LRTP states the following: "CRCOG, with support from Connecticut Institute for Resilience and Climate Adaptation (CIRCA), recently updated their Natural Hazards Mitigation Plan for years 2019-2024." I request the following be substituted: "CRCOG, with support from the U.S. Federal Emergency Management Agency (FEMA) and the Connecticut Institute for Resilience and Climate Adaptation (CIRCA), recently updated the Capitol Region Natural Hazard Mitigation Plan for years 2019-2024.	Chapter 1	Lynne Pike DiSanto	CRCOG	3/20/2019	Thank you, this change will be made.
Add a discussion related to the following, perhaps in Chapter 1 (Sustainable Transportation System) or Chapter 8 (Transportation Performance Management): Through the process of developing the Capitol Region Natural Hazard Mitigation Plan, the cities and towns of the region identified dozens of mitigation actions which address transportation infrastructure. These actions include projects to address drainage issues impacting streets including upsizing culverts; replace bridges; raise road elevations to prevent flooding and reduce road closures and washouts; and provide additional access to vulnerable populations or areas.	Chapter 1	Lynne Pike DiSanto	CRCOG	3/20/2019	Thank you, this change will be made.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Consider hazard mitigation and the identification of mitigation actions in the NHMP as additional criteria when selecting transportation projects for funding through the regional transportation planning process. Many of the mitigation actions listed in the NHMP can address issues related to the national transportation goals of Infrastructure condition, system reliability, economic vitality and environmental sustainability.	Chapter 11	Lynne Pike DiSanto	CRCOG	3/20/2019	CRCOG will consider this when reevaluating funding criteria.
a proposed transportation project's status as a brownfield site or adjacency to a brownfield site which is or has been funded through the MetroHartford Brownfields Program or other public funding for assessment and/or clean-up;	Chapter 11	Lynne Pike DiSanto	CRCOG	3/20/2019	CRCOG will consider this when reevaluating funding criteria.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
a proposed transportation project's status as a brownfield site or adjacency to a brownfield site which has the potential a brownfield site has to spur transit-oriented development	Implementation	Lynne Pike DiSanto	CRCOG	3/20/2019	CRCOG will consider this when reevaluating funding criteria.
Related to VMT: I urge CRCOG to revise your projections and actively pursue policies focused on expanding public transit and other alternative transportation options that will reduce VMT.	Highways	John Humphries	CT Roundtable on Climate and Jobs	3/20/2019	We agree that VMT reduction should be looked at as a potential performance measure. We currently follow federal regulations for performance measures, which do not include VMT or greenhouse gas emissions. In future plans we may look at a limited number of performance measures in addition to the federally required ones. Any such change to our performance measurement program will require thorough vetting through our committees and our Policy Board. This plan includes numerous improvements to public transit and alternative transportation options.

CRCOG Metropolitan Transportation Plan Public Comments

Comment	Pertinant Chapter(s)	Commenter Name(s)	Commenter Affiliation	Date Received	CRCOG Response
Plan recommendations in the public meeting presentation do not benefit local neighborhoods in Hartford.	Public Meeting	Meeting participant	Resident	3/14/2019	The presentation included a sampling of major projects. The plan funds over 500 individual projects, many of which have local neighborhood benefits. A full listing of projects is included in Appendix 4.

CONNECTICUT
RESOURCE CONSERVATION & DEVELOPMENT
1066 Saybrook Road
Haddam, Connecticut 06438

March 12, 2019

Tim Malone
Capitol Region Council of Governments
241 Main Street, Fourth Floor
Hartford, CT 06106

Dear Mr. Malone,

On March 11, CT RC&D hosted a Farmer Roundtable Dinner and Farm Energy Workshop at Bishop's Orchards in Guilford, CT with over forty farmers and agriculture producers who traveled from various COG regions in Connecticut.

The assembled group of farmers and agriculture producers discussed the need to improve regulatory land use coordination and planning for agriculture in regional and state transportation plans as well as municipal and regional plans of conservation& development and comprehensive economic development strategies.

It was noted that Connecticut agriculture is a four billion industry/business sector that employs almost 22,000 residents in CT. These numbers do not include ancillary support industries, producers and distributors that depend on the success of these agriculture producers. The emphasis of the discussion highlighted the need for more regional coordination of business support for agriculture.

Several attendees noted that many of the COGs incorporate agriculture planning and agriculture freight commodity movement into their regional planning policies. This letter is to provide additional comments toward the development and adoption of the CRCOG Regional Transportation Plan and other plans under development. The farmer/agriculture comments which included:

- Encourage expansion of agriculture planning in your UPWP and your Regional Transportation Plan updates.
- Incorporate agriculture land use and planning review as part of your intermunicipal review of new land use regulations or amendments.
- Encourage more data collection and mapping to better understand product sourcing, farm worker and disadvantage population access via transit as well as freight planning for commodity movement.
- Consider the formation of a Regional Agriculture Council to support existing municipal Ag Commissions and towns without Ag Commissions.

Thank you for your consideration of these recommendations as you develop and finalize your Regional Transportation Plan as well as other regional policies and plans.

All the best,

Jeanne Davies, Executive Director

CC/ CT Farm Bureau Association

THE TOWN OF FARMINGTON

INCORPORATED 1645

TOWN HALL
1 MONTEITH DRIVE
FARMINGTON, CONNECTICUT 06032-1053

INFORMATION ((860) 675-2300
FAX (860) 675-7140

December 5, 2018

Mr. Tim Malone, Principal Planner
Capitol Region Council of Governments
241 Main Street
Hartford, CT 06106
tmalone@crcog.org

Dear Mr. Malone,

On behalf of the Town of Farmington, I wanted to provide our funding priorities as the Capital Region Council of Governments (CRCOG) develops its Long- Range Transportation Plan. Our priority is the funding for the construction of a bridge across the Farmington River, extending Monteith Drive and terminating at New Britain Avenue. Over the past few years, the Town has solicited numerous opportunities for funding to no avail, and we are requesting CRCOG to consider funding for this project in its Long-Range Transportation Plan. The proposed bridge will be a benefit to the region as a whole and will alleviate traffic congestion in both Town centers, thus alleviating traffic congestion regionally.

The Town of Farmington 2016-2018 Strategic Plan called for an evaluation of an additional Farmington River crossing to alleviate traffic in both Farmington and Unionville Center. In the past, the Town of Farmington has proposed an additional river crossing on two separate occasions; however the previously proposed locations and associated residential impact prevented the projects from receiving community support and funding.

A new proposed location, which would be an extension of Monteith Drive over the Farmington River to New Britain Avenue, received Town Council consensus in September 2016. The proposed location is recommended for the following reasons:

- Minimal environmental impact
- Connection to various town owned properties
- River access & Connection to Trail System
- Minimal residential impact
- Connects Unionville Senior Housing with Senior/Community Center & Library

THE TOWN OF FARMINGTON

INCORPORATED 1645

TOWN HALL
1 MONTEITH DRIVE
FARMINGTON, CONNECTICUT 06032-1053

INFORMATION ((860) 675-2300
FAX (860) 675-7140

- Provides connection between Town Hall/Library/High School on the North side and; Police Station/Community Center/Public Works on the South Side
- Improves the longevity of the existing Unionville Bridge, which the Connecticut DOT has identified as a non-redundant structure, by reducing the average daily traffic that would utilize that corridor.

In February of 2017, CRCOG completed an estimated traffic impact, evaluating the extension of Monteith Drive to New Britain Avenue, and concurs with the project's merit. Their study determines that traffic will decrease about 18% if built under existing traffic conditions.

The Farmington River dissects the Town of Farmington and only two river crossings in town create traffic congestion in the town centers. The proposed river connection will alleviate traffic in Unionville and Farmington Center and strategically provide a connection between Town services that are located on either side of the river.

The Town of Farmington respectfully request that the CRCOG consider funding for this project in its Long-Range Transportation Plan. Please do not hesitate to contact Russ Arnold, Director of Public Works at arnoldr@farmington-ct.org or 860-675-2330 with any questions or if additional information is required.

Sincerely,

Kathleen A. Eagen
Town Manager

KAE/kk

cc: Russ Arnold, Director of Public Works

TOWN OF MANSFIELD

Paul M. Shapiro, Mayor

AUDREY P. BECK BUILDING
FOUR SOUTH EAGLEVILLE ROAD
MANSFIELD, CT 06268-2599
(860) 429-3330
Fax: (860) 429-6863

March 19, 2019

Mr. Timothy Malone
Principal Planner
Capitol Region Council of Governments
241 Main Street
Hartford, CT 06106

Via email: tmalone@crcog.org

Subject: Draft Metropolitan Transportation Plan

Dear Mr. Malone:

The Mansfield Town Council and Planning and Zoning Commission offer the following comments and recommendations with regard to the draft Metropolitan Transportation Plan:

- *New England Rail Line/Central Corridor.* In 2011, Mansfield joined several other towns in CT, MA and VT in adopting and executing a Memorandum of Agreement regarding restoration of passenger rail service and enhancement of freight rail service on the New England Central Rail Line. In 2014, an $8.2 million TIGER grant was awarded for upgrades to the New England Central Rail line to expand freight rail capacity. The increased capacity has long been seen as a precursor to any future restoration of passenger rail service. While a 2017 Mass DOT Central Corridor Passenger Rail Feasibility Study indicated that the demand for passenger service in 2020 would be fairly low (400 people per day), the study recommended that "respective state agencies and departments should continue to evaluate public support relative to the furtherance of the service and include it in any passenger and freight rail planning efforts in order to prioritize passenger rail service along the Central Corridor Line relative to other competing rail needs."

  Despite these previous efforts, there is only one reference to the New England Central railroad in Chapter 6 (Freight Transport System). Despite the focus on developing a "sustainable transportation system" (Chapter 1) as well as the identification of "insufficient regional rail connectivity" as an issue and deficiency for the transit and rail system (Chapter 2), there is no mention of any interest in exploring the restoration of passenger rail service on the New England Central Line. We respectfully request that a recommendation be added to further explore regional rail transit options outside of the

Knowledge Corridor and particularly along the New England Rail Line.

- *Eastern Gateways Study.* While a summary of transit recommendations from the Eastern Gateways study is referenced in Chapter 2 (Transit and Rail System), there is no corresponding reference in the Arterial Improvements section of Chapter 3 (Highway System). We respectfully request that a section be added summarizing the recommended improvements identified in the Eastern Gateways study for Routes 44 and 195 in Tolland, Bolton, Coventry and Mansfield.

If you have any questions regarding these comments, please contact Linda Painter, Director of Planning and Development, at 860.429.3330 or painterlm@mansfieldct.org.

Sincerely,

Paul M. Shapiro
Mayor

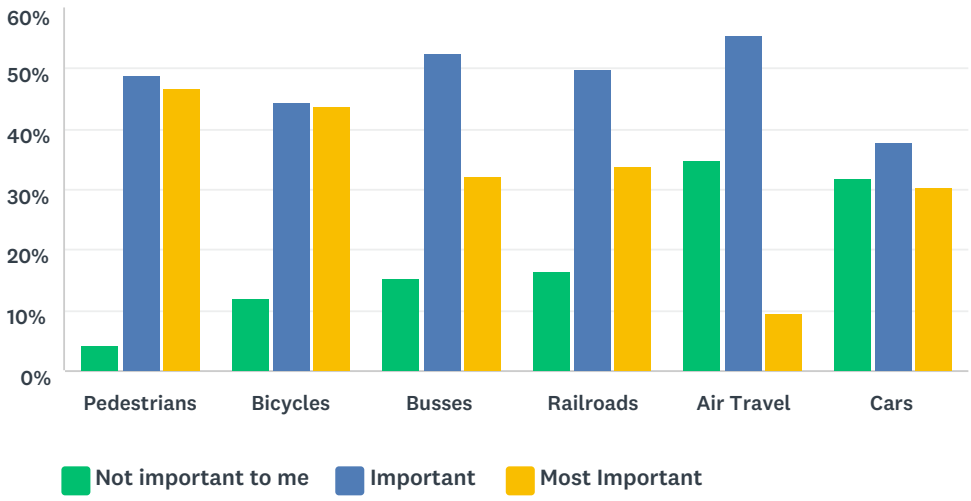
JoAnn Goodwin
Chair, Planning and Zoning Commission

Cc: Town Council
Planning and Zoning Commission

Appendix 8

Q1 My key concerns for mobility and access in the CRCOG area are:

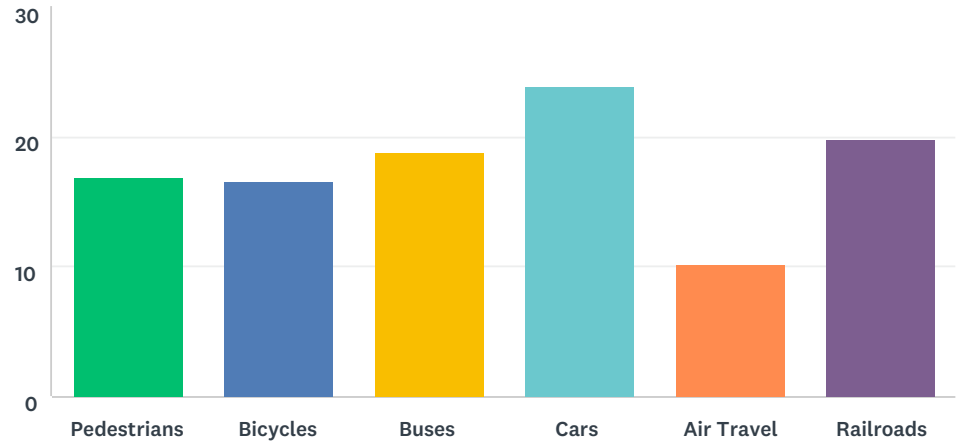
Answered: 330 Skipped: 2



	NOT IMPORTANT TO ME	IMPORTANT	MOST IMPORTANT	TOTAL
Pedestrians	4.33% 14	48.92% 158	46.75% 151	323
Bicycles	12.07% 39	44.27% 143	43.65% 141	323
Busses	15.26% 49	52.65% 169	32.09% 103	321
Railroads	16.36% 53	49.69% 161	33.95% 110	324
Air Travel	34.77% 105	55.63% 168	9.60% 29	302
Cars	31.85% 100	37.90% 119	30.25% 95	314

Q2 What percent of funding would you spend on the following modes in the next 20 years? (Enter only numbers; they must add up to 100 total)

Answered: 320 Skipped: 12



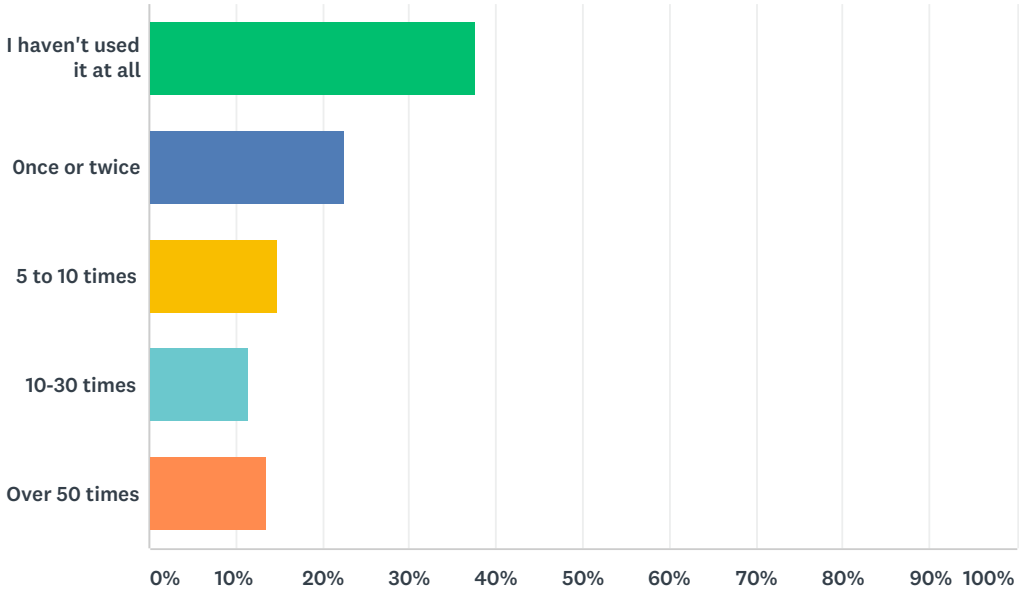
ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Pedestrians	17	5,231	311
Bicycles	17	5,103	307
Buses	19	5,803	309
Cars	24	7,002	294
Air Travel	10	2,871	280
Railroads	20	5,990	302
Total Respondents: 320			

BASIC STATISTICS

	MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
Pedestrians	0.00	75.00	15.00	16.82	11.18
Bicycles	0.00	100.00	15.00	16.62	11.86
Buses	0.00	70.00	20.00	18.78	11.94
Cars	0.00	98.00	20.00	23.82	19.85
Air Travel	0.00	100.00	10.00	10.25	8.89
Railroads	0.00	100.00	20.00	19.83	12.74

Q3 In the past 12 months, how often have you used public transit (rail, bus, paratransit vans) in the Hartford region?

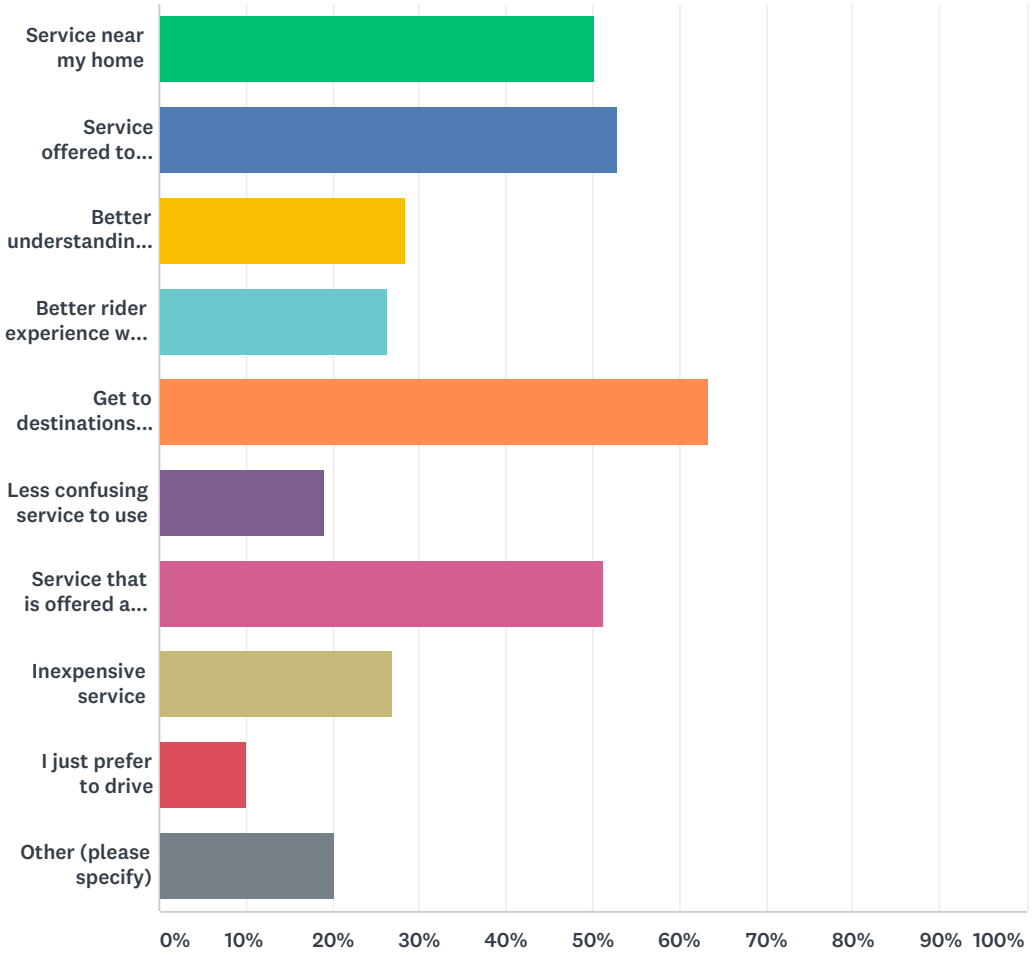
Answered: 332 Skipped: 0



ANSWER CHOICES	RESPONSES	
I haven't used it at all	37.65%	125
0nce or twice	22.59%	75
5 to 10 times	14.76%	49
10-30 times	11.45%	38
Over 50 times	13.55%	45
TOTAL		332

Q4 Which of the following improvements are needed for you to use public transportation (rail, bus, paratransit vans) more frequently?

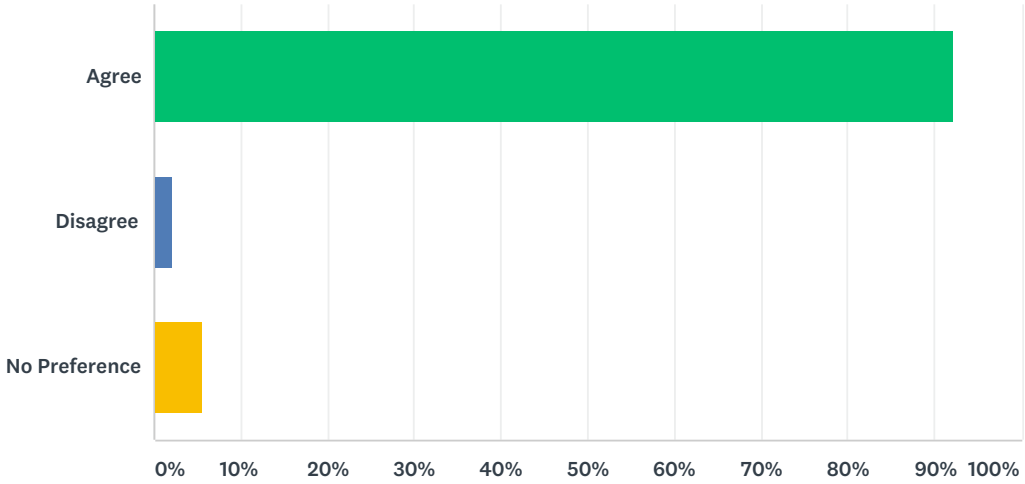
Answered: 331 Skipped: 1



ANSWER CHOICES	RESPONSES	
Service near my home	50.15%	166
Service offered to destinations I visit frequently	52.87%	175
Better understanding on how to use the services (need information about routes/fees/schedules)	28.40%	94
Better rider experience with the service (not being treated poorly, not arriving late, feeling safe)	26.28%	87
Get to destinations relatively fast compared to travel by car	63.44%	210
Less confusing service to use	19.03%	63
Service that is offered at the time I need it	51.36%	170
Inexpensive service	26.89%	89
I just prefer to drive	9.97%	33
Other (please specify)	20.24%	67
Total Respondents: 331		

Q5 Please indicate whether or not you agree with the following statement: "Even though I may or may not personally use the public transportation (rail, bus, paratransit van) for transportation, I support the public transportation systems in my community."

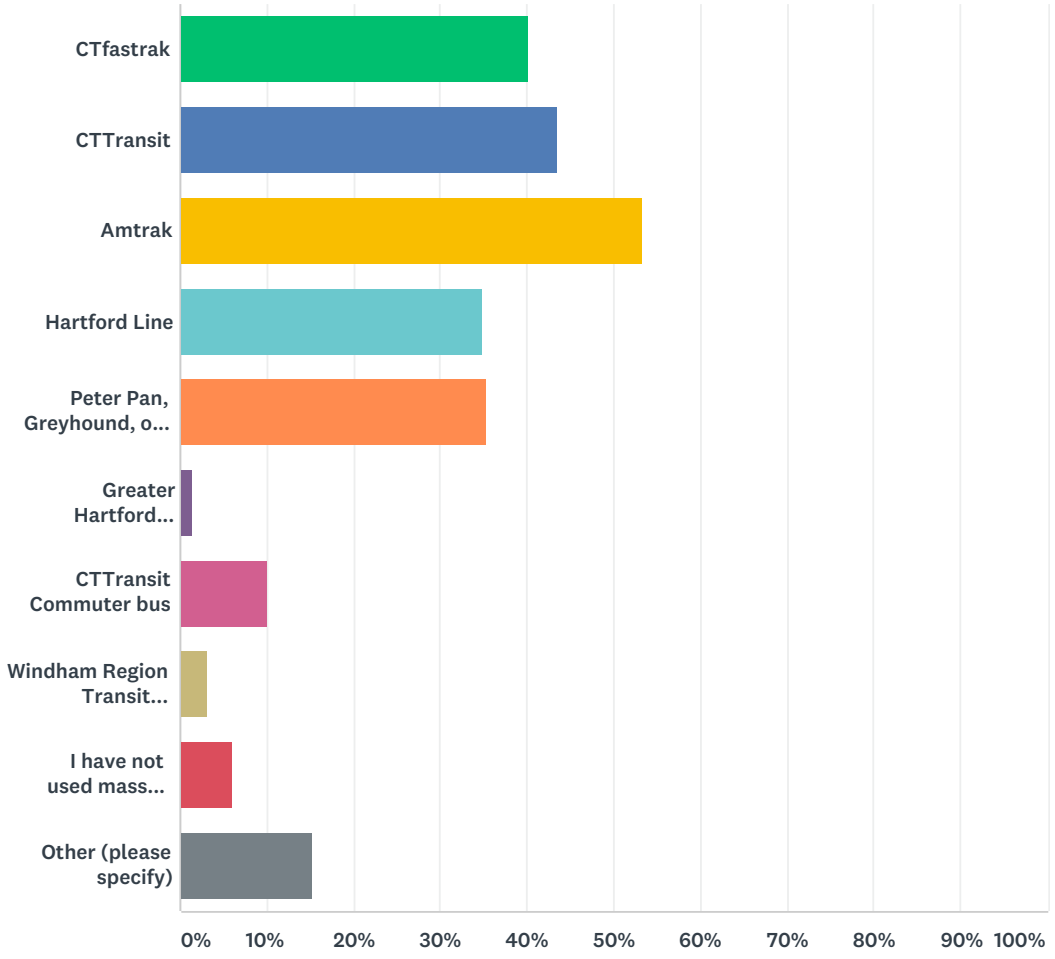
Answered: 332 Skipped: 0



ANSWER CHOICES	RESPONSES	
Agree	92.17%	306
Disagree	2.11%	7
No Preference	5.72%	19
TOTAL		332

Q6 Which of the following mass transit services have you used in the CRCOG region?

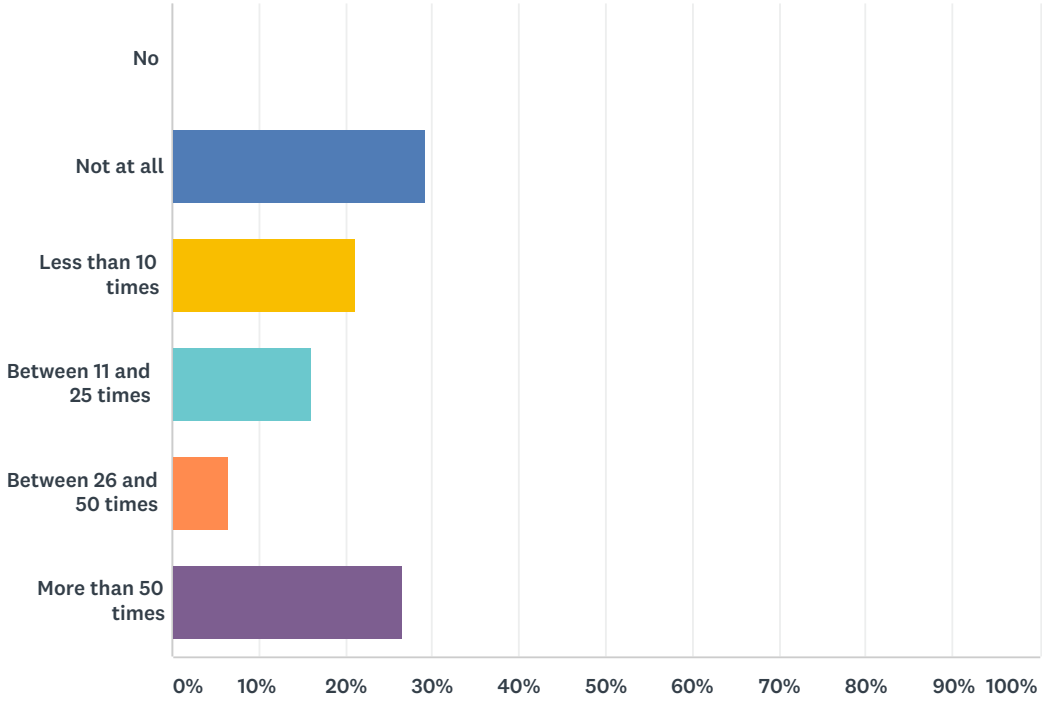
Answered: 326 Skipped: 6



ANSWER CHOICES	RESPONSES	
CTfastrak	40.18%	131
CTTransit	43.56%	142
Amtrak	53.37%	174
Hartford Line	34.97%	114
Peter Pan, Greyhound, or Megabus	35.28%	115
Greater Hartford Transit District Van	1.53%	5
CTTransit Commuter bus	10.12%	33
Windham Region Transit District	3.07%	10
I have not used mass transit services in the CRCOG Region	6.13%	20
Other (please specify)	15.34%	50
Total Respondents: 326		

Q7 How often have you ridden a bicycle in the last 12 months?

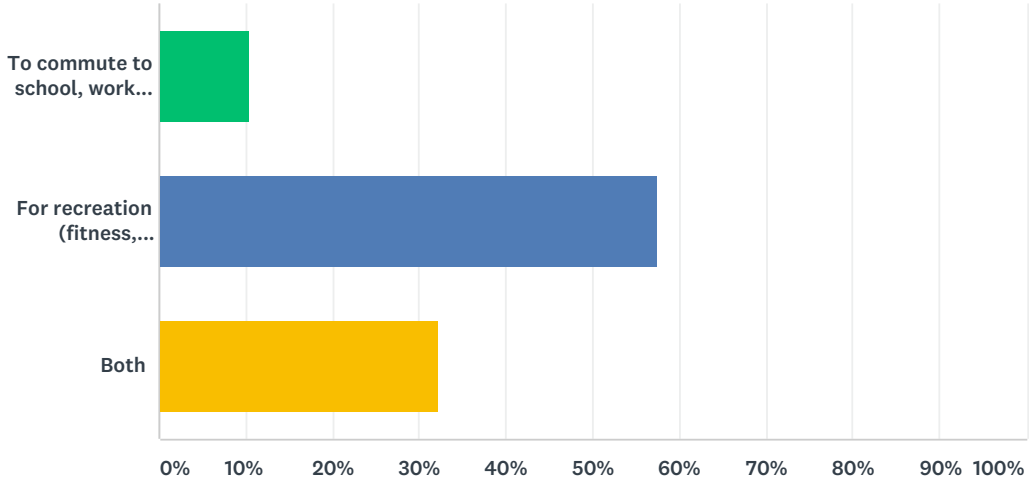
Answered: 327 Skipped: 5



ANSWER CHOICES	RESPONSES	
No	0.31%	1
Not at all	29.36%	96
Less than 10 times	21.10%	69
Between 11 and 25 times	16.21%	53
Between 26 and 50 times	6.42%	21
More than 50 times	26.61%	87
TOTAL		327

Q8 What is the primary reason you ride a bike?

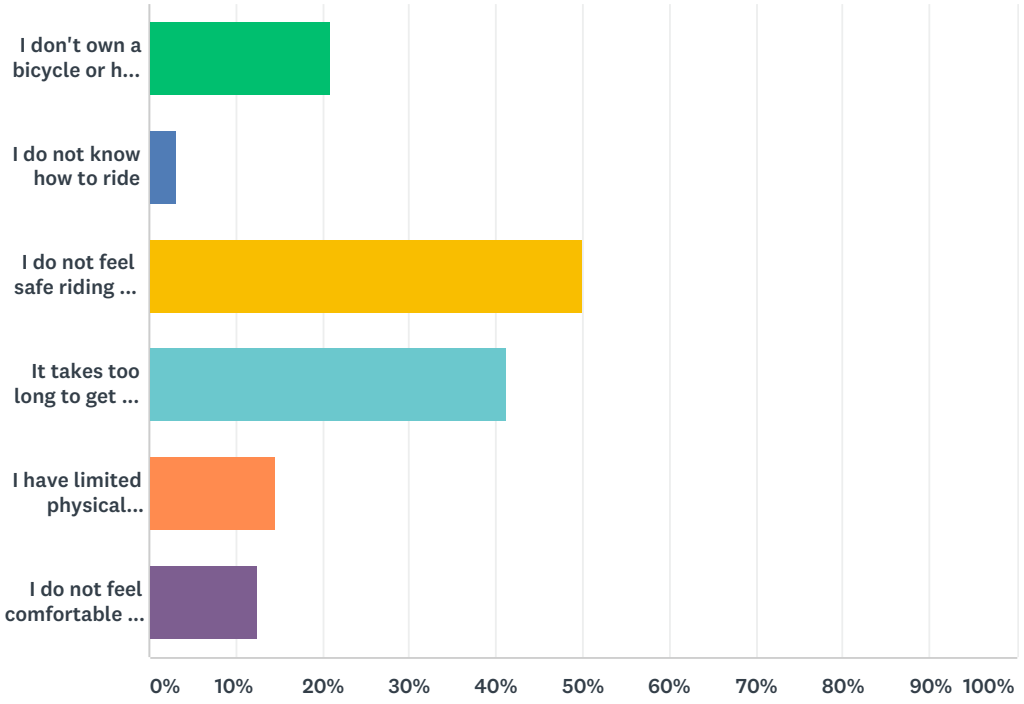
Answered: 280 Skipped: 52



ANSWER CHOICES	RESPONSES	
To commute to school, work, personal business, or shopping trips	10.36%	29
For recreation (fitness, leisure)	57.50%	161
Both	32.14%	90
TOTAL		280

Q9 Which of the following are reasons for why you have not ridden a bicycle in the last 12 months? (Check all that apply)

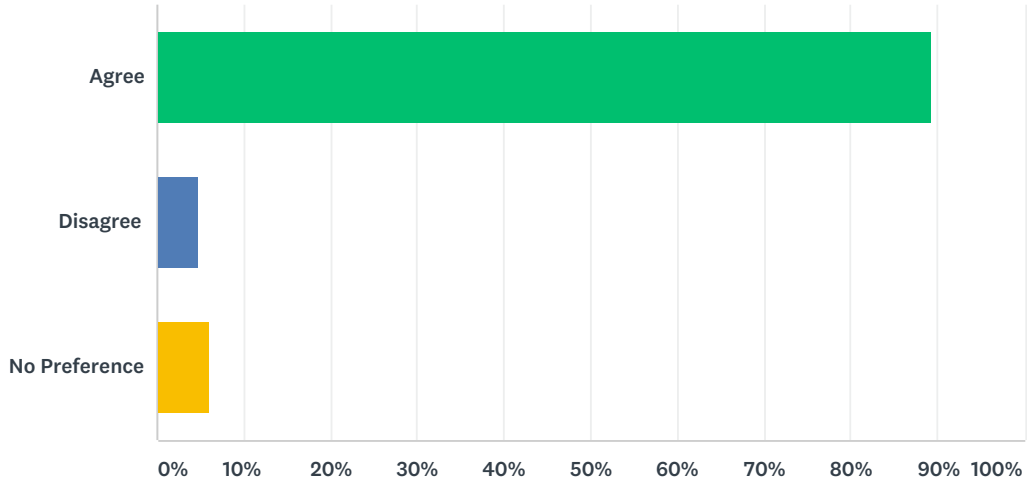
Answered: 192 Skipped: 140



ANSWER CHOICES	RESPONSES	
I don't own a bicycle or have access to one	20.83%	40
I do not know how to ride	3.13%	6
I do not feel safe riding a bicycle	50.00%	96
It takes too long to get to destinations compared to travel by car	41.15%	79
I have limited physical mobility	14.58%	28
I do not feel comfortable or enjoy biking	12.50%	24
Total Respondents: 192		

Q10 Please indicate whether or not you agree with the following statement: "Even though I may or may not personally bike, I support bicycle improvements in my community."

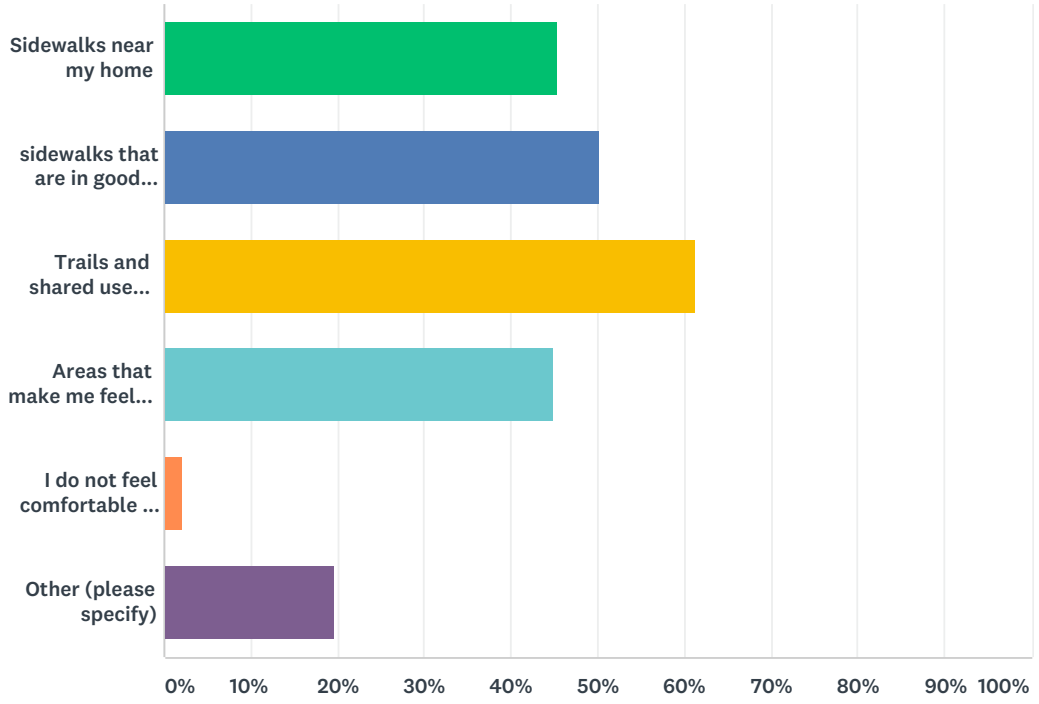
Answered: 318 Skipped: 14



ANSWER CHOICES	RESPONSES	
Agree	89.31%	284
Disagree	4.72%	15
No Preference	5.97%	19
TOTAL		318

Q11 Which of the following would encourage more walking for you in the next 12 months? (Check all that apply)

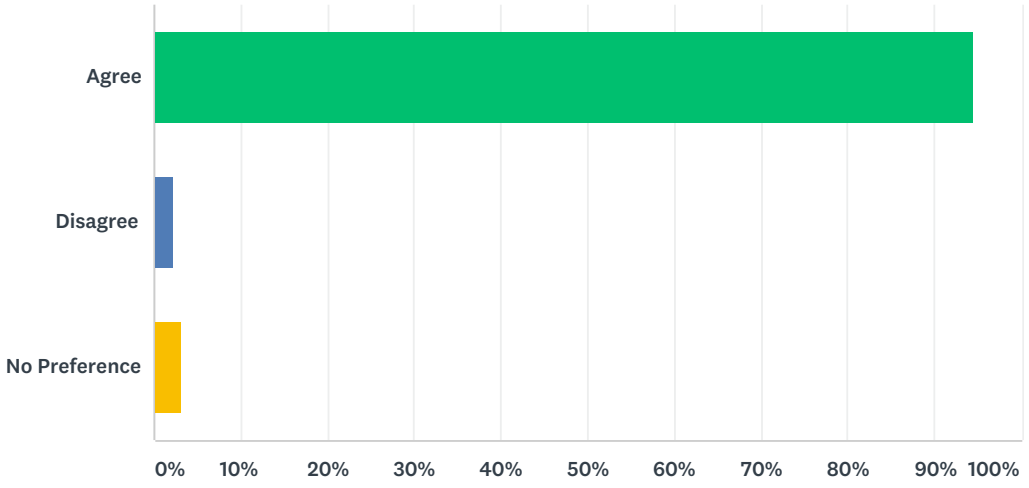
Answered: 320 Skipped: 12



ANSWER CHOICES	RESPONSES	
Sidewalks near my home	45.31%	145
sidewalks that are in good condition	50.31%	161
Trails and shared use paths near my home	61.25%	196
Areas that make me feel safe	45.00%	144
I do not feel comfortable or enjoy walking	2.19%	7
Other (please specify)	19.69%	63
Total Respondents: 320		

Q12 Please indicate whether or not you agree with the following statement: "Even though I may or may not personally walk, I support pedestrian improvements in my community."

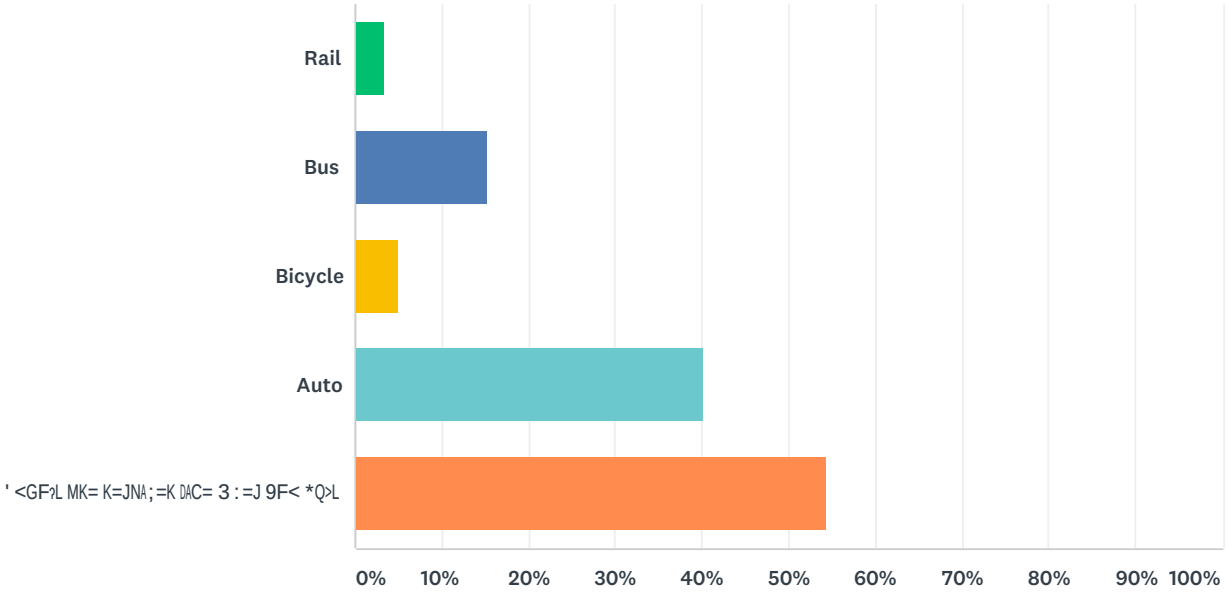
Answered: 316 Skipped: 16



ANSWER CHOICES	RESPONSES	
Agree	94.62%	299
Disagree	2.22%	7
No Preference	3.16%	10
TOTAL		316

Q13 Have services such as Uber and Lyft replaced any other mode you may have used previously? (Check all that apply)

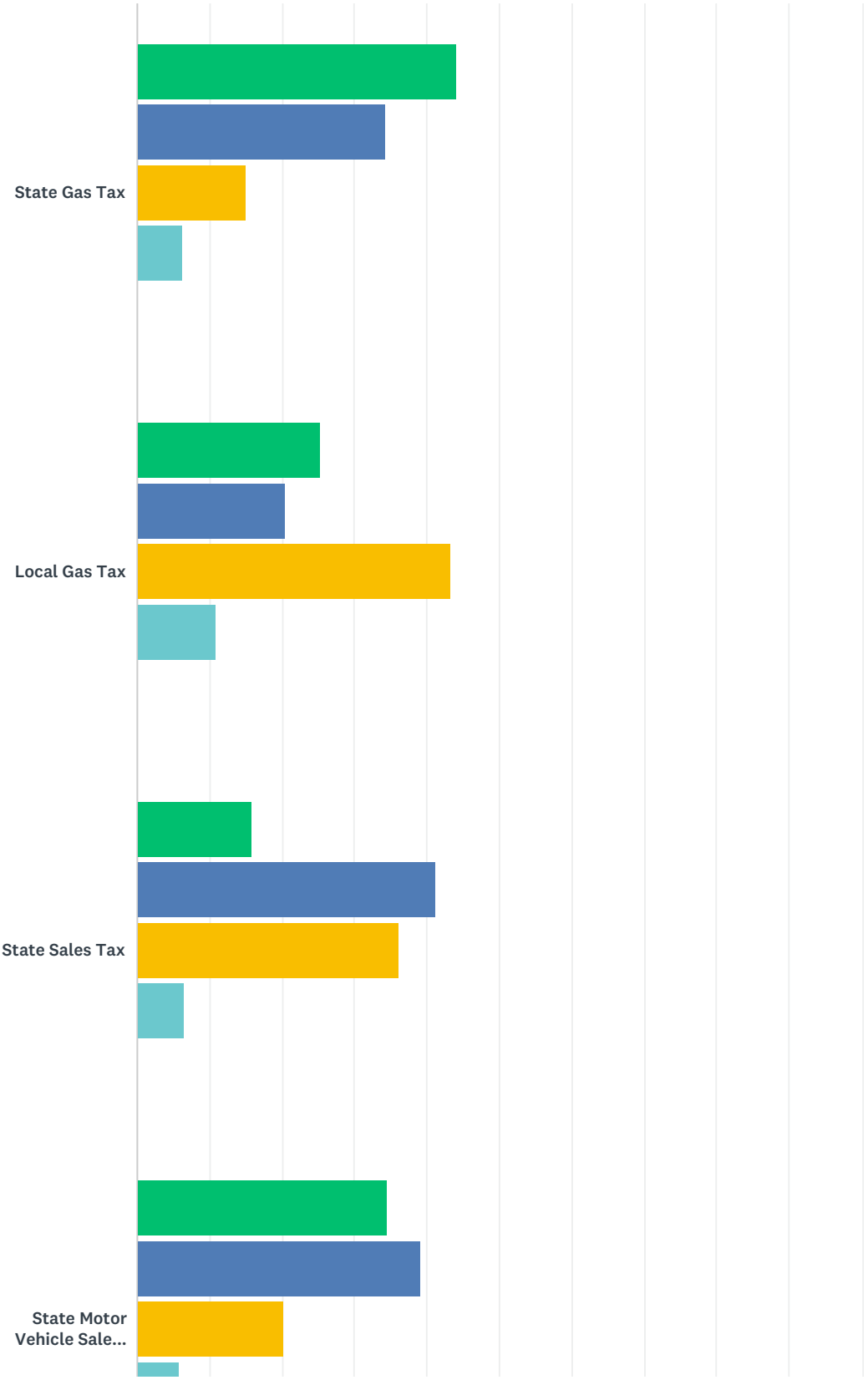
Answered: 302 Skipped: 30

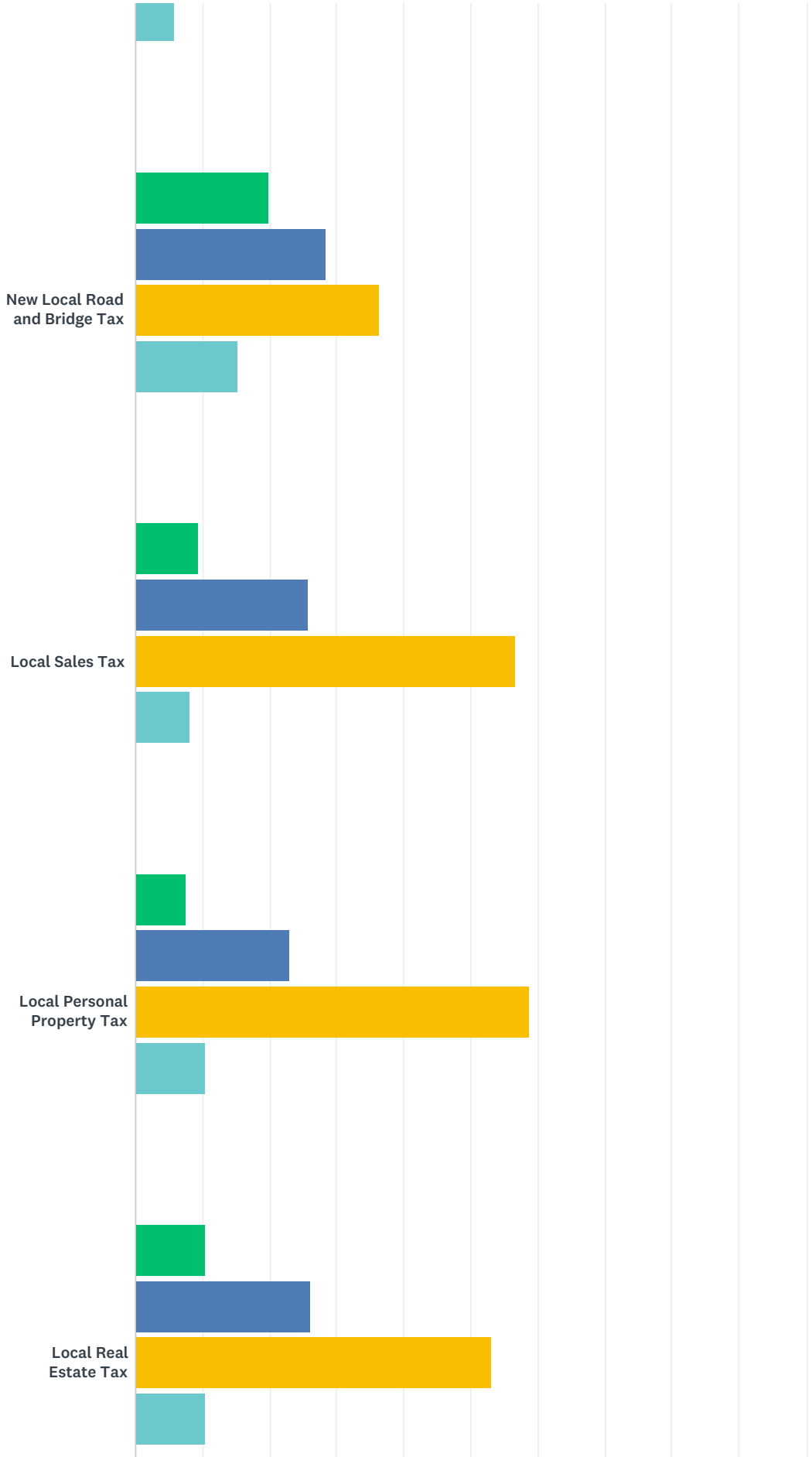


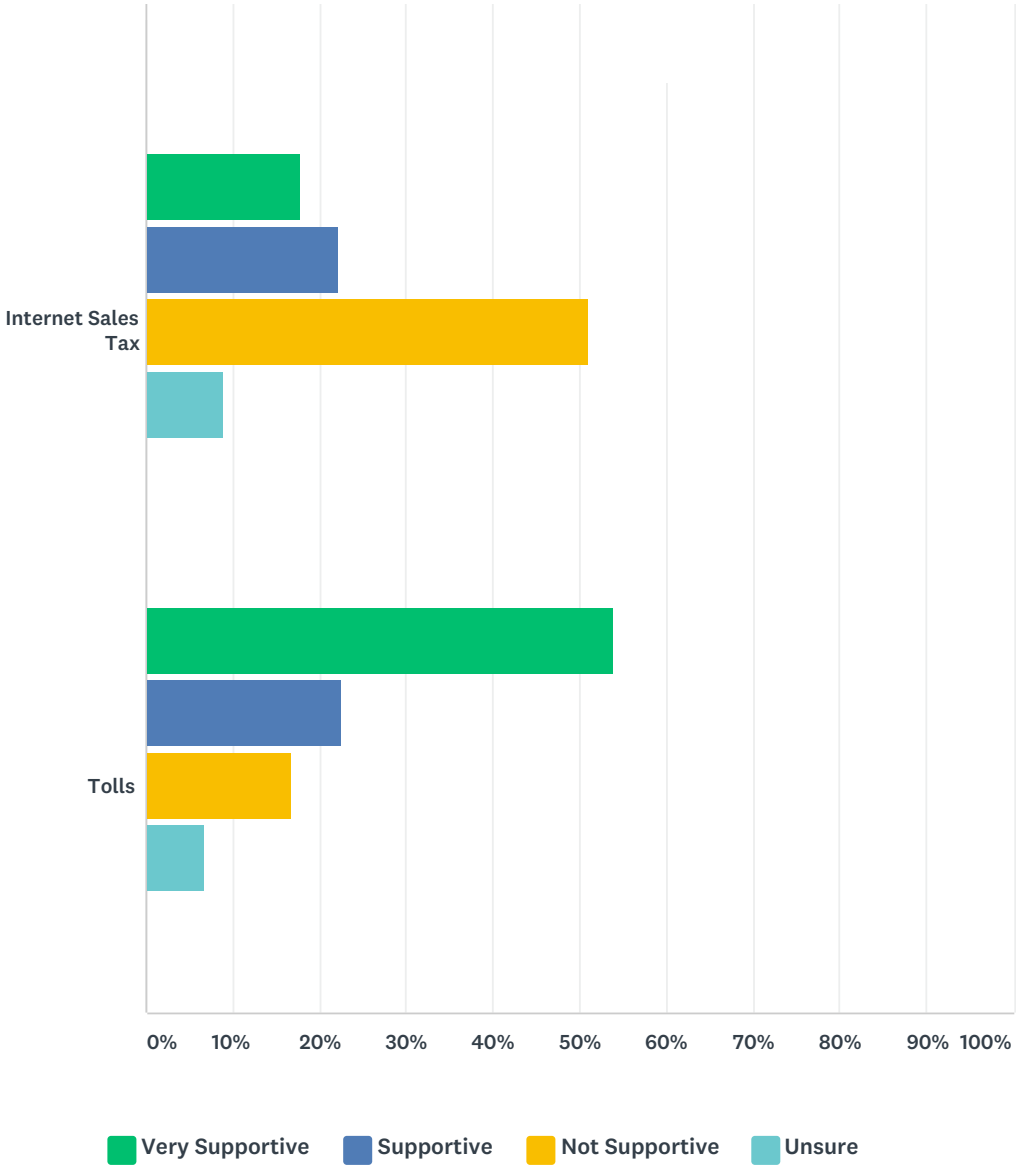
ANSWER CHOICES	RESPONSES	
Rail	3.31%	10
Bus	15.23%	46
Bicycle	4.97%	15
Auto	40.07%	121
I don't use services like Uber and Lyft	54.30%	164
Total Respondents: 302		

Q14 Please indicate your level of support for the following funding options for transportation

Answered: 293 Skipped: 39




New Local Road and Bridge Tax
Local Sales Tax
Local Personal Property Tax
Local Real Estate Tax

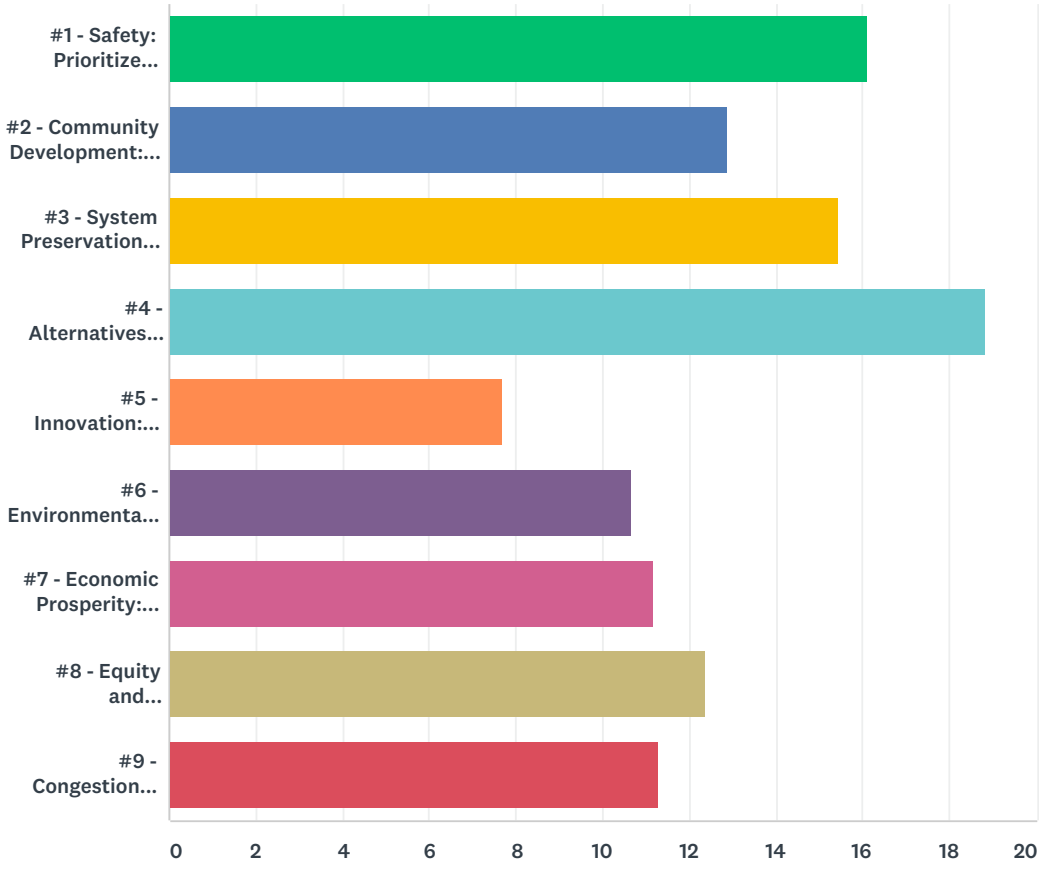


	VERY SUPPORTIVE	SUPPORTIVE	NOT SUPPORTIVE	UNSURE	TOTAL
State Gas Tax	44.21% 126	34.39% 98	15.09% 43	6.32% 18	285
Local Gas Tax	25.27% 70	20.58% 57	43.32% 120	10.83% 30	277
State Sales Tax	15.94% 44	41.30% 114	36.23% 100	6.52% 18	276
State Motor Vehicle Sales Tax	34.62% 99	39.16% 112	20.28% 58	5.94% 17	286
New Local Road and Bridge Tax	19.93% 56	28.47% 80	36.30% 102	15.30% 43	281
Local Sales Tax	9.32% 26	25.81% 72	56.63% 158	8.24% 23	279
Local Personal Property Tax	7.58% 21	23.10% 64	58.84% 163	10.47% 29	277
Local Real Estate Tax	10.39% 29	26.16% 73	53.05% 148	10.39% 29	279

Internet Sales Tax	17.86% 50	22.14% 62	51.07% 143	8.93% 25	 280
Tolls	54.01% 155	22.65% 65	16.72% 48	6.62% 19	 287

Q15 What percentage of a $100 budget would you spend between the following priorities? (The total must add up to 100)

Answered: 275 Skipped: 57

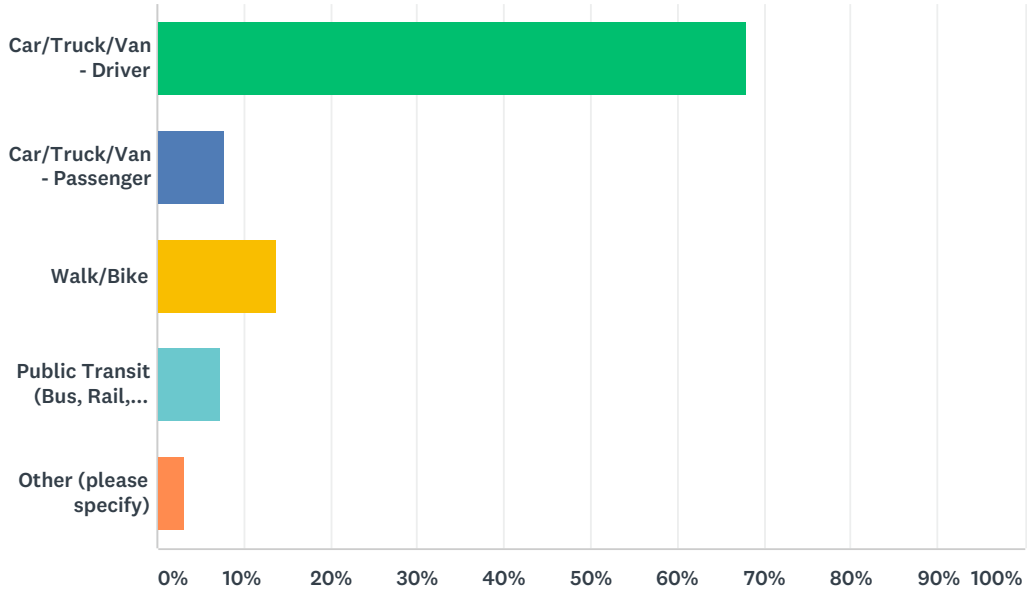


ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
#1 - Safety: Prioritize improvements that reduce the frequency and severity of crashes for all transportation users within the region	16	3,887	241
#2 - Community Development: Prioritize the coordination of land use and transportation policies that enhance communities, create connections to jobs, and promote tourism	13	3,070	238
#3 - System Preservation: Prioritize improvements that preserve existing transportation assets, including roadway pavement, bridges, and other existing transportation infrastructure	15	3,702	240
#4 - Alternatives to Driving: Prioritize improvements that promote alternative transportation modes including bus, biking, walking, passenger rail and ride-sharing	19	4,787	254
#5 - Innovation: Support the development and implementation of new technology such as Automated Vehicles to improve traffic flow and overall transportation system efficiency.	8	1,675	218
#6 - Environmental Protection: Prioritize the protection of environmental, cultural and historic sites, and mitigate negative impacts	11	2,413	226
#7 - Economic Prosperity: Prioritize the efficient movement of people and goods by improving infrastructure along regional corridors that improve connections between all forms of transportation, supporting current and future economic development	11	2,559	229

#8 - Equity and Accessibility: Prioritize improvements that directly address the transportation needs of the elderly, people with disabilities, and low-income households	12	2,884	233
#9 - Congestion Relief: Support projects and development practices that reduce the need for single occupant vehicles.	11	2,523	223
Total Respondents: 275			

Q16 Which of the following best describes how you get around most of the time?

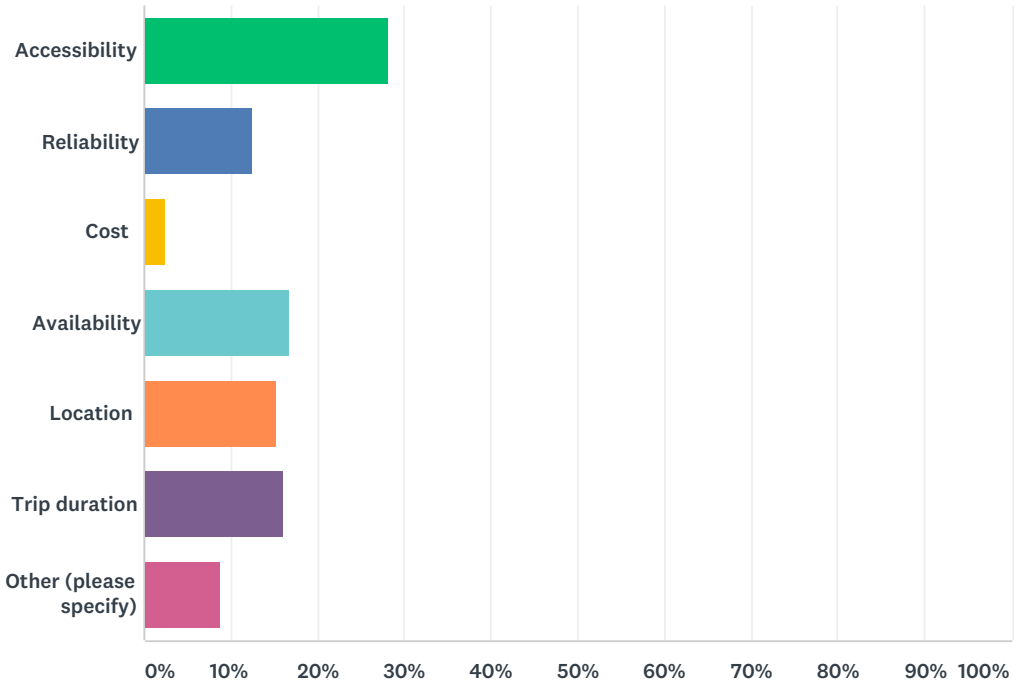
Answered: 288 Skipped: 44



ANSWER CHOICES	RESPONSES	
Car/Truck/Van - Driver	68.06%	196
Car/Truck/Van - Passenger	7.64%	22
Walk/Bike	13.89%	40
Public Transit (Bus, Rail, Paratransit van)	7.29%	21
Other (please specify)	3.13%	9
TOTAL		288

Q17 What is the primary factor that determines your mode of travel?

Answered: 287 Skipped: 45



ANSWER CHOICES	RESPONSES	
Accessibility	28.22%	81
Reliability	12.54%	36
Cost	2.44%	7
Availability	16.72%	48
Location	15.33%	44
Trip duration	16.03%	46
Other (please specify)	8.71%	25
TOTAL		287

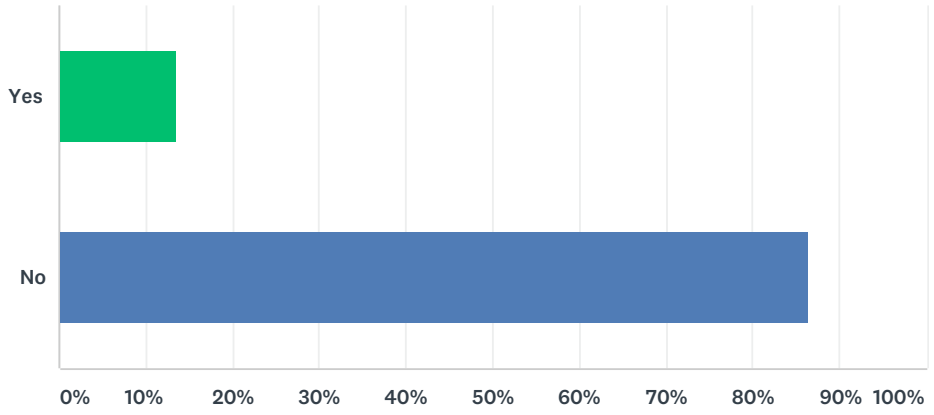
Q19 Including yourself, how many person(s) in your household are:

Answered: 273 Skipped: 59

ANSWER CHOICES	RESPONSES	
Under age 5:	26.01%	71
5-9 years:	26.37%	72
10-14 years:	27.47%	75
15-19 years:	27.84%	76
20-24 years:	28.94%	79
25-34 years:	42.49%	116
35-44 years:	39.19%	107
45-54 years:	37.36%	102
55-64 years:	41.76%	114
65+ years:	28.57%	78

Q20 Are you currently a student?

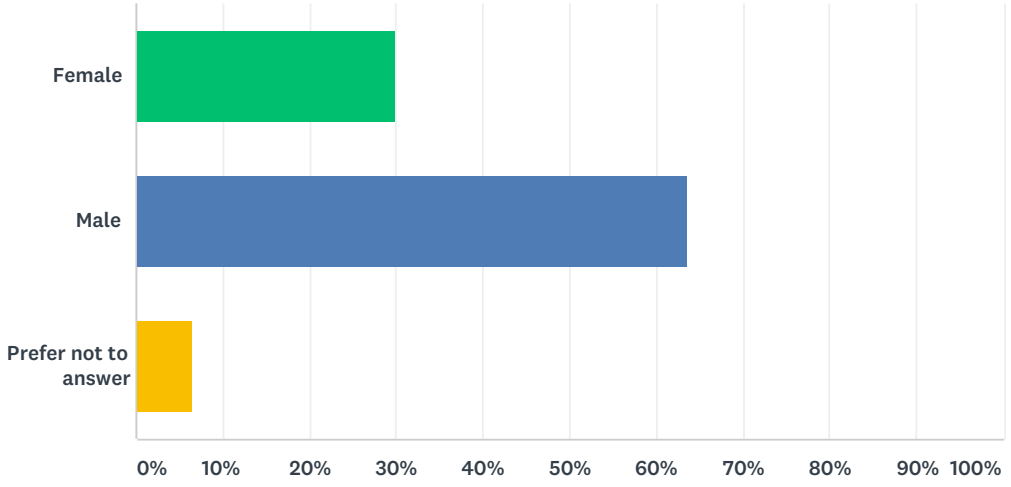
Answered: 278 Skipped: 54



ANSWER CHOICES	RESPONSES	
Yes	13.67%	38
No	86.33%	240
TOTAL		278

Q21 What is your gender?

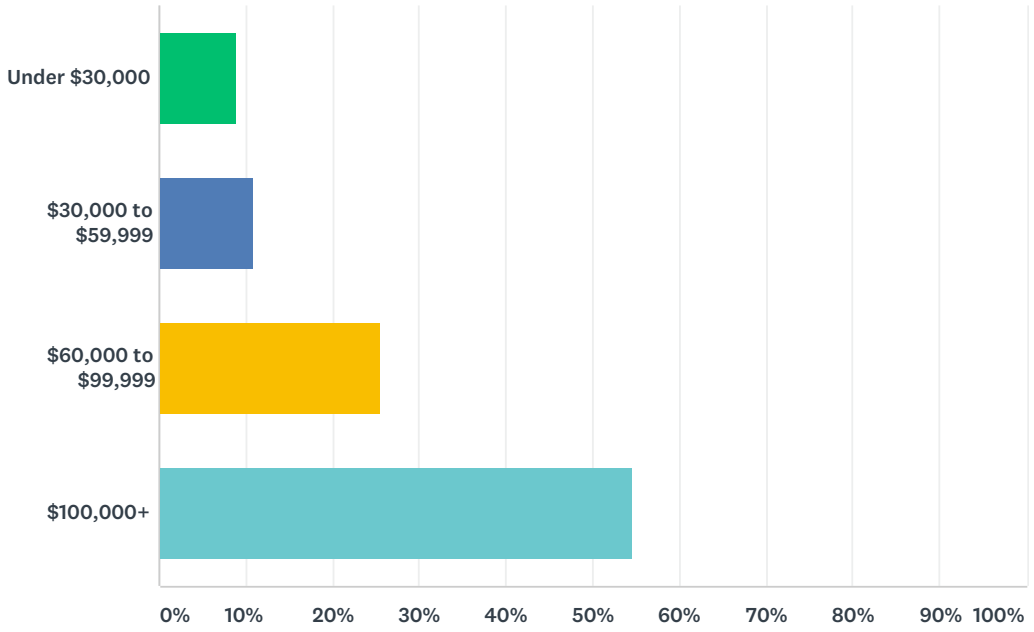
Answered: 277 Skipped: 55



ANSWER CHOICES	RESPONSES	
Female	29.96%	83
Male	63.54%	176
Prefer not to answer	6.50%	18
TOTAL		277

Q22 What is your total gross household income?

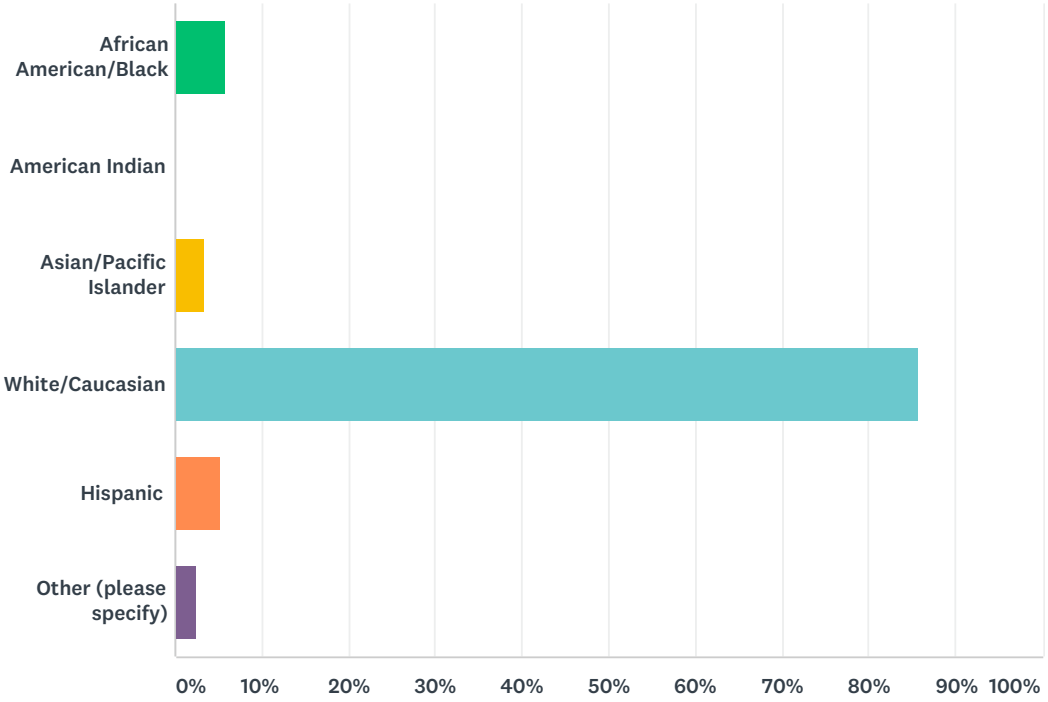
Answered: 275 Skipped: 57



ANSWER CHOICES	RESPONSES	
Under $30,000	9.09%	25
$30,000 to $59,999	10.91%	30
$60,000 to $99,999	25.45%	70
$100,000+	54.55%	150
TOTAL		275

Q23 Which of the following best describes your race?

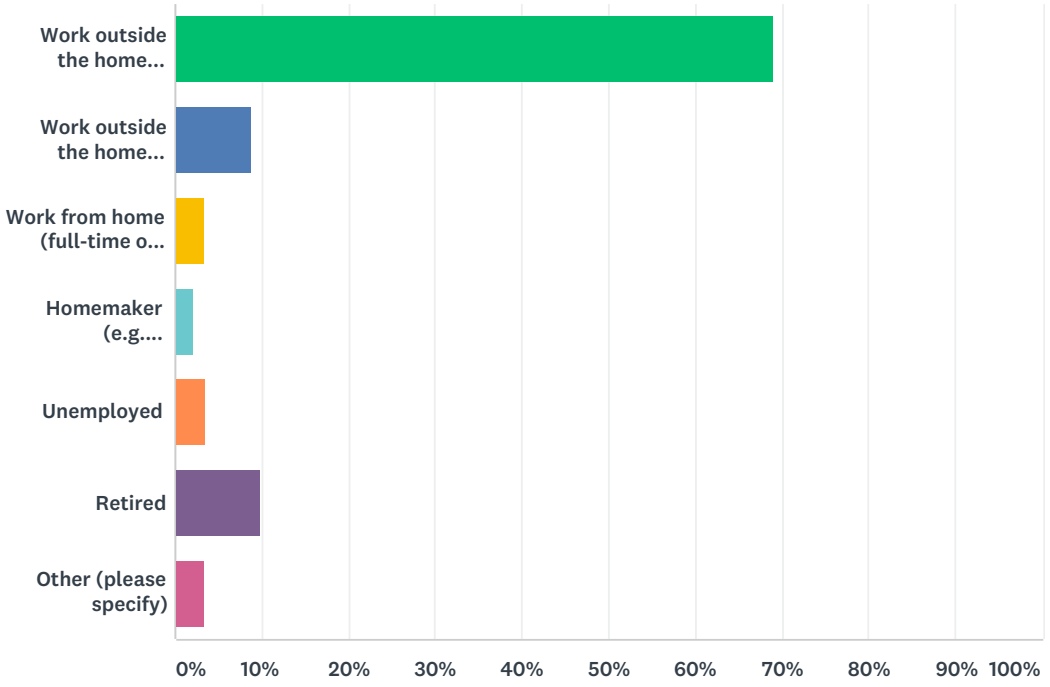
Answered: 273 Skipped: 59



ANSWER CHOICES	RESPONSES	
African American/Black	5.86%	16
American Indian	0.00%	0
Asian/Pacific Islander	3.30%	9
White/Caucasian	85.71%	234
Hispanic	5.13%	14
Other (please specify)	2.56%	7
Total Respondents: 273		

Q24 Which of the following best describes your current employment status?

Answered: 274 Skipped: 58



ANSWER CHOICES	RESPONSES	
Work outside the home full-time (30+ hours/week)	68.98%	189
Work outside the home part-time (less than 30 hours/week)	8.76%	24
Work from home (full-time or part-time)	3.28%	9
Homemaker (e.g. "stay-at-home mom/dad")	2.19%	6
Unemployed	3.65%	10
Retired	9.85%	27
Other (please specify)	3.28%	9
TOTAL		274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