# Department of Transportation

# 2018-2019

***Administrative Head*** **– Joseph J. Giulietti – Commissioner**

***Established*** **– October 1, 1969 Statutory authority p.a. 69-768**

***Central Office*** **– 2800 Berlin Turnpike, Newington, CT 06131-7546**

***Authorized number of full-time employees*** **– 3,362**

***Recurring operating expenditures*** **2016-2017 ---$697.1 million**

***Capital Budget 2016-2017*** **-- $2.30 billion**

*Organization structure –* **Office of Commissioner, Bureau of Finance and Administration, Bureau of Engineering and Construction, Bureau of Highway Operations, Bureau of Policy and Planning, Bureau of Public Transportation, Office of State Traffic Administration**

## Agency Mission

The mission of the Connecticut Department of Transportation (Department) is to provide a safe and efficient inter-modal transportation network that improves the quality of life and promotes economic vitality for the State and region.

## Statutory Responsibility

The agency shall be responsible for all aspects of the planning, development, maintenance and improvement of transportation in the state (Section 13b-3 C.G.S.). The agency serves its customers by providing safe and efficient systems for the movement of people and goods within, to or from the State, whether by highway, air, water, rail or other means (Section 13b-2[I]).

## Information Reported as Required by State Statute

The agency shall develop and revise, biennially, a comprehensive long-range transportation plan designed to fulfill the present and future needs of the state and to assure the development and maintenance of an adequate, safe and efficient transportation system (Section 13b-15 C.G.S). The purpose of the Master Transportation Plan is to provide its customers, the Administration, the General Assembly, local elected officials, and the general public with a comprehensive understanding of the transportation projects and programs that the agency will be pursuing over the next 10 years. The strategic goals of the agency are to ensure safety, maintain the existing system, increase system productivity, promote economic development and provide required capacity.

## Affirmative Action Policy

The Department is an Affirmative Action/Equal Opportunity Employer. It is the established policy of the Department to assure equal opportunity and to implement affirmative action programs. All services and programs of the Department are administered in a fair and impartial manner, pursuant to the State Code of Fair Practices and all other relevant state and federal laws and regulations including, but not limited to, C.G.S. 46a-60, Title VI and VII of the Civil Rights Act of 1964, and the Americans with Disabilities Act (ADA). The Department continues to work cooperatively with the Connecticut Commission on Human Rights and Opportunities and other state and federal compliance agencies in conducting various reviews and providing requested information.

The **Office of State Traffic Administration's** 85 percent application has eliminated the use of paper by the Office of State Traffic Administration when collecting and calculating the average speed of traffic on Connecticut roadways. The application integrates the data with GIS mapping.

The **Bureau of Finance and Administration** is responsible for the following functions within the Department: Finance, Operations and Support, External Audits, Human Resources, and Contract Compliance, Contracts, and Agreements. The bureau provides the fiscal and support services necessary for the development and implementation of the department's programs. In addition, the bureau administers fuel distribution for most state agencies and oversees the operation of the twenty-three service plazas on the Governor John Davis Lodge Turnpike and the Merritt and Wilbur Cross Parkways.

The following is a summary of some of the key initiatives being undertaken in the Bureau:

CTDOT has been positioning itself annually for additional Federal funds through the Federal Highway Administration (FHWA) redistribution program. Federal law provides for a redistribution on August 1 of each fiscal year of the obligation limitation, or "ceiling," from those States and programs unable to obligate their full share of federal highways funding to other States, such as Connecticut, that are able to obligate more than their initial share of the ceiling. The FHWA reviews every state's ability to fully utilize their highway obligation limitation and requires that States who cannot fully obligate federal funding return the obligation limitation to the federal agency. This obligation limitation, along with any amounts held back from original distribution by USDOT, is then redistributed to states that can obligate all of their federal allocations and can demonstrate the need for additional ceiling to advance eligible projects that are ready to move forward.

Through yearlong strategic planning efforts, CTDOT has positioned itself to be able to submit a robust application - from a typical ask of $10-$20 million prior to FY2016, to $45 million and up for the last 3 years. Based on a successful demonstration of our ability to fully use all available funds and a plan to quickly utilize additional funding, CTDOT has received $142 million of redistributed ceiling in the past 3 years. For FY2019, CTDOT has submitted a request for $75 million.

A project closeout team was formed in October 2008 to address a backlog of Federal Highway Administration (FHWA) funded projects that were completed, but had not been closed. From October 2008, through June 2019, the Department closed 3,493 FHWA-funded projects and released $215 million of unused federal funding for obligation on new projects. The backlog of FHWA-funded projects awaiting closeout has been eliminated and the Department's focus now has shifted to closing out 100% state-funded projects. During SFY 2015, a formal closeout process was developed for state bond, appropriated, and other funded projects, and resources were dedicated to tackling the backlog of projects requiring closeout. Since that time, over 3,500 funded projects have been closed out, with 972 of those being done in SFY 2019. In the coming years, as permitted within the constraints of limited staffing, the Department plans to continue to address the backlog as well as adhering to a timely closeout process for newly completed

projects. Timely closeouts of both federal and state projects result in unutilized funds being released from projects sooner and being available for obligation on new projects.

The Department of Transportation (DOT) and Connecticut Employees Union Independent (CEUI) partnered with the Office of State Comptroller to establish a Diabetes Prevention Program at the DOT as part of an ongoing commitment to maintaining a healthy, productive workforce. The goal of this initiative is to provide DOT licensed CDL operators the opportunity to volunteer to participate in a Diabetes Prevention lifestyle change program. Employees may attend informational sessions designed to teach employees how to make healthy lifestyle changes focused on diet modification, managing stress, improved exercise and adopting healthy habits to delay and even prevent the progression of the condition to Type 2 diabetes. Employees are given resources by dedicated, trained lifestyle coaches who understand the challenges faced by DOT's work environment, schedule and hours of work. The program is the first of its kind and will serve as a model for other state agencies.

The **Bureau of Engineering and Construction** (Bureau) continued in 2018-2019 to make improvements to Connecticut's transportation infrastructure by maximizing the use of federal and state transportation funds to address the backlog of State of Good Repair work, as well as to initiate select transportation enhancement projects, such as improvements to Exit 29, the Charter Oak Bridge, off I-91 in Hartford. Major areas of planning and engineering included finalizing the congestion mitigation strategies for the I-95 corridor south of New Haven, continuing to advance the congestion mitigation strategies for the I-95 corridor north of New Haven, progressing the preliminary design for I-84 Exits 3 through 8 in Danbury, progressing the preliminary design for the I-91/I-695/RT15 interchange, and developing strategies for the replacement of the I-84 / Route 8 Mixmaster in Waterbury.

This spring, the Bureau established a new Construction District, District 5, in recognition of the Department's commitment to managing a multi-modal system. District 5 is tasked with the administration of capital construction projects for public transit (rail and bus) and facilities. This specialized group of construction engineers will focus on such projects as the WALK Bridge Replacement; the New Haven Rail Yard Facilities Improvements Program; the new parking garage at the Stamford Transportation Center, among others.

Asset Management

The Department submitted its 2019 Highway Transportation Asset Management Plan (TAMP) in June 2019 to the Federal Highway Administration, and its 2018 TAMP in October 2018 to the Federal Transit Administration. The Highway and Transit TAMPs were created to document the agency's asset management processes, project future needs of our assets, and construct a blueprint for transportation asset management improvements moving forward. The plans meet federal requirements (MAP-21 and FAST-Act).

The Highway TAMP goes beyond addressing all of the federal mandates and demonstrates the Department's strong commitment toward achieving a State of Good Repair for our transportation system. An asset management strategy for National Highway System (NHS) bridges and pavements is included in the TAMP as required. The initial 2018 Highway TAMP covered all CTDOT maintained bridges, pavements, traffic signals, signs, sign supports and pavement markings. Highway Buildings as an asset class was added to the 2019 Highway TAMP. The Highway TAMP contains information on Asset Inventory and Condition, Asset Data Management, Objectives and Performance, Life Cycle Planning, Risk Management, Financial Planning, Investment Strategies and Process Improvements. The Transit TAMP was developed in partnership with CTDOT Public Transportation's service providers to achieve a systematic and comprehensive asset management system for the State's public transportation assets. The Transit TAMP contains information on Goals and Objectives, Asset Inventory and Condition, Analytical Approach, Investment Scenarios, Investment Plan and Implementation and Monitoring. Both TAMPs guide the Department in its endeavor to deliver better asset performance.

LEAN

The Bureau continues to place an emphasis on the state's LeanCT initiative. Lean participation includes: tracking and reporting progress; and, solicitation, selection, and prioritization of topics for the scheduling of upcoming Kaizen events. Past Lean events have resulted in process improvements in targeted areas. Recent Lean events have include: Environmental Permitting for Design-Build Projects in September 2018; Construction Project Closeout in November 2018; and, Streamlining of Pavement Data Processing and Work Flow in November 2018.

Highway Safety

The Bureau is continuing its effort to improve safety and drive down the number of fatalities and serious injuries of all road users on Connecticut's highways. This effort is detailed in Connecticut's Strategic Highway Safety Plan (SHSP). The SHSP brings together all of Connecticut's safety stakeholders to collaborate on safety efforts and leverage resources. The new SHSP was published in July 2017. Similar safety plans are being prepared for each of the nine Councils of Governments in Connecticut. The first plan was completed in June 2019 and a second plan is targeted to be completed later this year.

The Bureau's highway safety program focuses on implementing systematic transportation safety improvements. These types of projects focus on providing safety improvements over the entire transportation network, while providing the highest safety benefit for each dollar spent. Systematic safety improvements include:

- A centerline rumble strip initiative. Rumble strips are grooves within the pavement that produce noise and vibration when traveled over, and are a proven safety

countermeasure to reduce lane departure crashes. Approximately 90 miles of centerline rumble strips will be installed in 2019.

- A pedestrian warning sign replacement project on local roads. Pedestrian warning signs and associated plaques are being upgraded with a fluorescent yellow background and post delineator to enhance visibility, especially during dawn and dusk periods. The signs will be installed in 2019.

- A statewide clearance interval retiming project. All state owned and maintained traffic signals are being revised to update the yellow and red clearance intervals to be consistent with national best practice. The timings are being calculated and the signal plans are being revised. The actual timing changes are being performed through the Department's maintenance forces. The field work should be completed by the end of 2019.

- A horizontal curve signing project on state and locally-owned roads. Improved horizontal curve delineation is proven to be a cost-effective approach to reducing roadway departure crashes. The locations are being designed in a consistent approach in accordance with national standards with the use of signs. The design plans for Districts 3 and 4 (state roads) will be completed in 2019 and constructed in 2020. Districts 1 and 2 (state roads) will be designed in 2020 and constructed in 2021. The installation of horizontal curve signs on local roads was completed in 2018 and installation will be completed in Districts 1, 2, and 4 in 2019.

Systemic safety projects to upgrade active railroad devices are ongoing in order to ensure functionality of system critical components at public railway-highway grade crossings. The projects include upgrading gate arms, gate arm mechanisms, warning lights, and bells on multiple rail lines throughout the state.

## Traffic Management

Pedestrian control features at signalized intersections will be upgraded under Accessible Pedestrian Signal (APS) projects, to include countdown pedestrian signals, sidewalk ramps, and crosswalks. Intersections included in the projects include those that have the old-style audible buzzers for non-visual cue during an exclusive pedestrian phase. The projects are a result of language included in the 2009 Manual of Uniform Traffic Control Devices. Ninety-eight (98) intersections in various District 1 towns were included as part of three projects. The first project (15 locations) was constructed in 2015. The second project (39 locations) was constructed in 2017. The third project (44 locations) was completed in 2018. Intersections programmed for APS upgrades in Districts 2, 3, and 4 are scheduled to begin construction later this season and will include 49 total intersections (at least 15 in each District).

In addition to the programmed APS traffic signal projects noted above, traffic signal projects are being completed on a yearly basis to mainly address outdated

equipment, which requires frequent maintenance. Equipment will be updated to current Manual of Uniform Traffic Control Devices (MUTCD) standards, including APS where applicable, in these projects. There are approximately fifteen locations in each of the four districts being designed as well as constructed each year.

In recognition of the fact that much of the signing on limited access roadways in the state has surpassed its effective service life, multiple signing replacement projects are currently in design or construction. These include projects on the Merritt Parkway, as well as selected sections of I-95, I-84, Route 9, and Route 8.

Bicycle / Pedestrian / Trails

The Bureau continues to manage a more flexible approach to the funding of Bicycle/Pedestrian projects in an effort to close some of the existing statewide gaps in the trail network. Toward this goal, the Bureau is facilitating completion of a network of inter-connected, statewide trails under the Multi-use Trail Implementation Plan. This program is focused on the East Coast Greenway (ECG), a trail of statewide significance. The goal is to establish clear priorities that will close the most critical gaps and create long continuous portions of the statewide trail network.

Construction activities are complete on Project No. 51-268, a 2.4 mile section of the ECG in Farmington, and on an additional 3.8 miles of the ECG including projects in Cheshire along the Farmington Canal Heritage Trail (Project No. 25-145), in Manchester along the Air Line Trail (Project No. 76217), and in Bolton along the Hop River Trail (Project No. 12-96). Construction is currently underway ECG projects in Bloomfield (Project No. 11-152) and Windham (Project No. 163-204.

Design activities are nearing completion on a section of the ECG in New Haven under Project No. 92-621. Design activities are also underway on the following projects along various segments of the ECG: Project No. 108-189 in Plainfield/Sterling, Project No. 131-203 in Southington, Project No. 30-97 in Columbia, and Project No. 111-124 in Pomfret/Putnam. Design continues on sections of the trail on either side of the Putnam Bridge in Glastonbury and Wethersfield under Project No. 53-192.

The Department and the Capital Region Council of Governments had recently completed a study within the town of Plainville to determine a reasonable alignment for the ECG through that town. Project No. 109-173 has been initiated, based on the results of the study, to close the last remaining five mile north/south gap in the ECG in Plainville. This project will also close the last remaining gap in the Farmington Canal Heritage Trail, connecting New Haven to Massachusetts. Moving forward, the Department will continue to evaluate and initiate new sections of the regionally significant trails within budgetary constraints in an effort to close existing gaps in the ECG across the state.

LOTCIP

The Bureau continues to oversee the Local Transportation Capital Improvement Program (LOTCIP). LOTCIP allows municipalities to perform capital improvements on smaller, locally-owned roadways that qualify for the Federal Surface Transportation Program – Urban (STGB-U) without needing to adhere to Federal Title 23 requirements that many municipalities are unfamiliar with and find burdensome, time consuming, and expensive. LOTCIP has freed up a significant level of Bureau resources that have historically been devoted to oversight of municipally-sponsored Federal-aid projects. LOTCIP also allows the portion of Federal STP-U monies historically dedicated to improvements on municipally-owned facilities to be utilized by the Department for eligible activities, predominantly on State-owned assets. Since November 2013 when LOTCIP was first implemented, the Bureau has worked with the regional Council of Governments (COGs) to issue funding commitments for 130 regionally-endorsed municipal projects representing approximately $252 million in construction. $34 million in LOTCIP-funded construction projects were awarded in SFY 2018, with $85 million currently programmed to be awarded in SFY 2019. The Bureau continues to coordinate with the regional COGs on new location solicitations and enhancing project delivery.

Highway Pavement Management Program

The Bureau collaborated with the Bureau of Highway Operations to implement the 2019 Pavement Preservation Program. Strategies to improve Moving Ahead for Progress in the 21st Century (MAP-21) pavement performance metrics (crack percent, smoothness, and rutting) have been employed. These strategies include the use of polymer modified asphalt (PMA); surface patching and crack filling of existing pavement prior to paving; the application of thin preservation treatments (ultra-thin overlays and rubberized chip seals) and for selected pavement sections, incorporating specifications for improved pavement smoothness and uniformity.

The 2019 Pavement Preservation Program includes a major 57-lane-mile resurfacing project valued at approximately $20 million on I-91 in Windsor, Windsor Locks, and East Windsor. This includes milling off the top surface, paving with PMA, and then topping the surface with an ultra-thin overlay to increase skid resistance and decrease storm water spray at the tire-pavement interface. The 2019 program also includes several ultra-thin overlay treatments valued at approximately $15 million, including: Route 2 in Colchester and Lebanon; Route 9 in Essex, Deep River, and Chester; Route 395 in Waterford and Montville; Route 6 in Woodbury; and Route 8 in Torrington and Winchester. Several rubberized chip seal treatments valued at approximately $5 million were also within the 2019 Program, including: Route 149 in Colchester, Route 165 in Preston and Griswold, Route 171 in Eastford and Woodstock, Route 201 in Stonington, Route 203 in Windham, Route 77 in Guilford, Route 4 in Goshen, and Route 39 in Sherman. These rubberized chip seal treatments offer several advantages over conventional chip seals, as they are more durable, reduce the amount of loose material that can kick up and stick to vehicles, and it uses approximately 1,500 tires per mile (based on a 2-lane roadway). Finally, the Bureau of Highway Operations continues to manage a Maintenance Resurfacing Program, under which sixty five (65) pavement sections are being paved in 2019 valued at approximately $60 million.

Highway Program

A major transportation initiative which started construction in 2015 involves widening and safety improvements on I-84 in Waterbury. The project includes complete reconstruction of the highway for 2.7 miles, replacement of 8 bridges, construction of one pedestrian crossing, and the widening of I-84 in each direction to includes the addition of a 3rd lane. The project also includes the realignment of the Interstate roadway in the vicinity of Harpers Ferry Road to eliminate the existing substandard "S" curve alignment, interchange ramp reconfiguration, relocation of the Mad River and Beaver Pond Brook, and state and local road reconstruction. As a result of the realignment of I-84 and the reconfiguration of the ramps, portions of Hamilton Ave, Harpers Ferry Road, Scott Road, Plank Road, Reidville Drive, Plank Road East, and East Main Street are being reconstructed. The project was completed one year ahead of schedule and is currently finalizing all punch list items. This was a significant project because this two-lane section of I-84 could not accommodate existing peak-period traffic demands. Sustained periods of congestion were routine. This section of I-84 carries an Average Daily Traffic (ADT) volume of 121,800 vehicles, including a significant number of trucks that provide for goods movement through-out the state and region.

State Project 92-522 is being finalized in construction. The project involves the reconstruction of approximately one mile of I-95 in West Haven and New Haven, including the full replacement of the bridges over the West River and Route 10 (Ella Grasso Boulevard) and consolidation of the previous I-95 Interchanges 44 and 45 in favor of a new "diamond" interchange. The $134 Million project increases safety and improves traffic flow along I-95 by eliminating the "weaving" operation caused by the original, closely-spaced interchange configuration. The project includes the construction of a new, four-lane extension of Ella Grasso Boulevard to connect to Kimberly Avenue in West Haven. In response to public comment, the Department coordinated with the City of New Haven to install traffic calming measures along Sea Street, and provide a connection to the multi-modal Harborside Trail. Work along I-95 was completed in 2018 and the remaining construction along Sea Street is expected to be completed later this year.

Construction has started for the relocation of I-91 northbound Exit 29 in Hartford to Route 5 North and I-84 East in East Hartford (Project No. 63-703). This exit will be replaced with a major diverge consisting of a two-lane bridge entering the left side of the Charter Oak Bridge. Additional improvements include extending the four-lane section of I-91 northbound from Interchange 27 to Interchange 29, and widening Route 15 northbound to three travel lanes from east of the Charter Oak Bridge to the Silver Lane underpass. Project No. 159-191, which involves pavement rehabilitation of I-91 northbound and southbound beginning in the vicinity of the Elm Street overpass in Wethersfield and terminating at the southerly limit of Project No. 63-703 in the northbound direction with the southbound direction terminating in the vicinity of the left-sided merge with the Route 15 entrance ramp in Hartford, is combined with Project No. 63-703 under one contract. The $213 million Contract (Project No.63-703/159-191) began April 1, 2019 and has an estimated completion date of May 26, 2022.

The I-84 Danbury Project, Project No. 34-349, is an initiative to improve safety, increase capacity, and improve operations and access between Exits 3 and 8 in Danbury. The eight-mile stretch of I-84 experiences significant congestion and is CTDOT's highest priority for expanded capacity on the I-84 corridor. The project planning process is under way and focuses on public engagement and the development and preliminary assessment of alternatives. Subsequent phases will include environmental documentation, identification of a preferred alternative and preliminary engineering. The project team has been meeting with a variety of stakeholders in Danbury and surrounding towns and has launched a project website (i84danbury.com). The first public forum was held on June 13, 2017 at Western Connecticut State University. Other public outreach efforts include newsletters and social media updates.

Transportation improvements continue on Route 15 (the Merritt Parkway) as part of the Merritt Parkway Corridor Improvement Plan. State Project No. 158-211/207, currently in its third year of construction, addresses 4.6 miles in both the east and westbound directions of the Merritt Parkway in Fairfield and Westport. Included within the project are eleven (11) historic structures that are a mix of Parkway over and under other travel ways, as well as the Saugatuck River. The Westport structures include Newtown Turnpike, Route 15 over Wilton Road, Route 15 over the Saugatuck River, Clinton Avenue, North Avenue and Bayberry Lane. Fairfield bridges include Route 15 over Cross Highway, Merwins Lane, and Redding Road. Roadway improvements include resurfacing the roadway, correcting roadway cross-slopes, widening existing shoulders to 8 feet (4 feet paved, 4 feet reinforced grassed), upgrading guiderail with the standard Merritt Parkway style railing, installing concrete median barrier where appropriate, and rehabilitating the historic landscape in accordance with the Merritt Parkway Landscape Master Plan. Construction started in April 2017, and is predicted to cost $68 million. A majority of the construction will be completed by the end of 2019, with final paving expected to be completed by the summer of 2020 .

The last major project in the Merritt Parkway Corridor Improvement Plan is State Project No. 102-296. This project is currently being designed and will extend in both the east and west directions from New Canaan to Westport for a distance of 6.1 miles. The project is comparable in scope and magnitude as previous parkway projects within the corridor improvement program and shares similar proposed improvements. The design of this project is scheduled for completion in spring 2020, with construction expected to begin in spring 2021.

A series of projects have been initiated that will result in the removal of traffic signals from the Route 9 expressway in Middletown. The first project included the construction of sidewalk "bump-outs" on Main Street in order to shorten the pedestrian crossing distances. A project to close the at-grade access from Miller Street to Route 9 by upgrading the Bridge Street railroad crossing is in design. Also in design is a project to remove the stop-controlled on-ramp from Route 17 onto Route 9 northbound, and a project to remove the traffic signals on Route 9. Major intersection improvements at St. John's Square was advertised in August 2019 together with the major bridge

rehabilitation project for the Arrigoni Bridge. Construction will last two full seasons and will include the reconstruction of the intersection leading to the Arrigoni from the Middletown side, as well as replacement of the bridge decks on both approach spans. Structural steel repairs and strengthening is also included. The concrete bridge decks for the two 600 foot main spans over the river were replaced in a prior project completed in 2012. Construction cost for the combined projects is estimated at $52 million.

Bridge Program / Innovative Bridge Construction

The Bureau has programmed all state-maintained poor bridges for rehabilitation or replacement, and all projects are either in design or construction. Bridge work is being programmed based on an asset management approach to achieve and maintain established bridge performance targets, as documented in the Department's FHWA certified "Highway Transportation Asset Management Plan" (TAMP), dated July 24, 2018. The goal of an asset management system is to systematically and strategically identify and program treatments throughout the bridge's lifecycle, which will, if applied at the appropriate time, result in achieving and sustaining a State of Good Repair, given available funding. Over the last several years, the number of bridges rated poor has been steadily decreasing as the result of availability of additional state funds, additional maintenance staff to perform a myriad backlog of bridge maintenance work, and additional engineering staff to accomplish bridge capital improvements.

The Bureau continued to inspect, evaluate, and inventory the structural condition of more than 5,000 bridges, 1,800 overhead sign supports, and 900 traffic signal mast arm supports. Signs and traffic signal supports are typically inspected at six -year intervals. Bridges are typically inspected at two-year intervals. However, some bridges are inspected more frequently if warranted due to structural deterioration. This critical function helps to ensure the safety of the traveling public through the identification of deficiencies and needs in a systematic and timely manner. Routine maintenance is also identified to protect the State of Connecticut's multi-billion-dollar capital investment in bridges.

When a state-maintained bridge becomes poor, steps are taken to address the deficiency, either by Bridge Maintenance performing repairs, or by the Bureau initiating a project to repair or replace the structure in a capital project. If the bridge is maintained by a town or another entity, the Bureau notifies the owner of the need to correct the deficiency and provides information regarding funding for qualified bridges.

The innovative construction method referred to as Accelerated Bridge Construction (ABC) has been used in several construction projects in Connecticut. ABC is bridge construction that uses innovative planning, design, materials, and construction methods in a safe and cost-effective manner to reduce the onsite construction time that occurs when building new bridges or replacing and rehabilitating existing bridges. ABC improves site constructability, total project delivery time, and work-zone safety for the traveling public. ABC reduces traffic impacts, onside construction time, and weather-related time delays. Since 2012, 28 projects have been completed using ABC, 5 others

are in construction and another 6 are in various stages of design from Pre-design to Contract Processing.

The Bureau continues to employ efficient contract delivery methods to maximize contractor innovation and deliver projects more quickly to construction. The success of the Department's first Design-Build construction project replacing 4 bridges on Route 8 in Bridgeport has led to yet another 4 bridge replacement project using this alternate contracting method. The project will also use ABC techniques, including Prefabricated Bridge Units (PBUs) and Geosynthetic Reinforced Soil–Integrated Bridge System (GRS–IBS), to help reduce bridge construction time and cost. Three of the four bridges are located in the city of East Hartford. Two of these bridges are now complete: Bridge No. 2366, which carries Route 2 Westbound over I-84 Eastbound, was completed on July 12, 2019; and, Bridge No. 2369, which is Route 2 Eastbound over I-84 ramps, was completed on October 19, 2018. The third bridge, Bridge No. 2367, I-84 Westbound exit ramp over I-84 Eastbound to the Founders Bridge, will be completed in the fall of 2019. The fourth structure, located in Willington, carries Potter School Road over I-84. This work was completed on August 24, 2018. The $23 million project began September 2017 and is scheduled to be completed in early 2020.

Bridge No. 00037, a two-span superstructure replacement carrying U.S. Route 1 over I-95 in Stamford, is nearing completion. The project used accelerated bridge construction (ABC) techniques to demolish and replace both spans during two weekends in June 2019 using Self-Propelled Modular Transports (SPMTs). I-95 through traffic was detoured off the mainline highway onto the exit 9 reconfigured off and on ramps. The contractor was able to replace each superstructure and open I-95 to traffic 6 hours ahead of schedule and prior to the Monday morning peak commute.

In July 2019, SPMTs were used again to replace 2 superstructures carrying Route 160 over I-91 NB and SB, The moves occurred on consecutive Sunday mornings, July 21 and July 28, from 1 am to 6 am, while detouring I-91 traffic. Both bridges were installed ahead of the scheduled 5 hour closure.

Also in July 2019, the I-395 NB and SB bridges in Waterford over Route 85 were closed and traffic rerouted using the off and on ramps. This allowed the contractor unimpeded access in order to replace the concrete bridge deck with prefabricated deck panels, another form of ABC. NB and SB were done at separate times over two 10 day closures. Both were completed days ahead of schedule.

A project to replace the existing railroad bridge over Atlantic Street in Stamford is currently in construction. The project incorporates ABC techniques. The work is broken down into two phases. Phase 1 is complete and included relocating the buried utilities and the I-95 NB exit ramp, and reconstructing a portion of South State Street. Phase 2 is partially complete. Work completed included the replacement of the railroad bridge using innovative construction techniques, including railroad track jump spans that permitted construction of new bridge abutments under live rail traffic. Self-Propelled Modular Transporters (SPMT's) were used to transport and place pre-constructed bridge

spans built off site. The new spans were successfully installed during the July 4th week of 2019. Future work includes a new station platform to be constructed on the north side of the station in order to use the new Track 7 that will service the New Canaan line. Construction completion is scheduled for early 2020, with the remaining bridge work completed late in 2019. The total construction cost for Phase 1 and Phase 2, including rail overhead catenary improvements and the new station rail platform extension, is estimated to be approximately $173.8 million.

Innovative materials and techniques will be used in early September to preserve bridge beam ends for structures carrying I-91 in New Haven. The bridge beam ends will be encased in ultra-high performance concrete (UHPC), the first use of this technique in the nation. The procedure was developed with a research and design partnership between the Department and UCONN.

A bridge rehabilitation project for the I-84 Hartford Viaduct, which carries I-84 over Amtrak, city streets, and parking lots in Hartford, is currently in construction. The project includes repairs to structural steel, bearing and concrete repairs to the bridge deck and supporting substructure, replacement of the median barrier, and parapet modifications. Similar repairs will also be accomplished to Bridge Nos. 01765 and 01766, located just east of the viaduct along I-84. The three projects are combined into one construction contract. Construction began in the spring of 2017 and will be complete by the spring of 2020.

Planning for the long-term redesign and reconstruction of the I-84 Viaduct continues under the I-84 Hartford Project. The project will address structural deficiencies, improve traffic operations and safety, and improve mobility on the I-84 mainline and its interchanges between Flatbush Avenue and I-91. The Lowered Highway alternative would relocate a portion of the Amtrak rail line, improving rail operations in Hartford; eliminate the viaduct by bringing I-84 down at or below ground level; reduce I-84's impact on neighborhoods; and, free up as many as 45 acres of land, creating opportunities for development including TOD around a new, multimodal station opposite Union Station. The project will also improve access, safety, and mobility for bicycles and pedestrians within the project area. The next phase will result in a draft Environmental Impact Statement.

The northbound Gold Star Memorial Bridge, located on I-95 between Groton and New London, is planned for major bridge rehabilitation. There will be three separate construction projects. The first project, scheduled for advertising in June 2020, will focus on structural steel strengthening and touch-up painting on the eastern portion of the bridge. The second project, scheduled for advertising in September 2021, is also focus on structural steel strengthening and touch-up painting on the western two-girder spans of the bridge. The third project, scheduled for advertising in December 2022, will include replacement of the bridge deck. Additional work includes the replacement of the rocker bearings, and replacement of existing structure-mounted sign supports.

The I-84/Route 8 Interchange in Waterbury is being rehabilitated to provide additional service life in anticipation of a future interchange replacement. The project addresses the mainline I-84 and Route 8 structures and the turning roadways connecting them. The three design projects were awarded as a single $153 million construction contract in April of 2018 and scheduled for completion in June 2022. The project includes structural steel repair and strengthening, bridge deck repair and resurfacing, and bridge deck replacement on all spans of the Route 8 northbound interchange bridge and 5 spans of the Route 8 southbound bridge. Temporary U-Turn and bypass are in place that will allow for replacement of the Route 8 NB deck replacements. Structural steel repairs and substructure repairs continue throughout the Project.

A preliminary engineering study has been initiated to investigate alternatives for the design and replacement of the I-84/Route 8 Interchange. Survey and traffic data collection, including traffic volumes and origin/destination statistics, have been completed. Models are being prepared in order to project future traffic demand for the Interchange. The scope of the initial study will consist of developing a broad spectrum of alternatives for reconfiguration of the Interchange that will address the needs and deficiencies of the corridor. Fiscally constrained alternatives, including potential near-term measures for improving operational and safety needs, are also being explored to manage and maintain the existing infrastructure.

A project to rehabilitate Bridge No. 32 on I-95 that spans Metro-North Railroad and local streets in Stamford was advertised in the summer 2019. The project incorporates innovative variable quantity construction items for deck patching. This methodology was employed to limit potential construction cost changes associated with contract deck patch quantities, which are difficult to estimate during the design process.

The proposed rehabilitation of the Heroes Tunnel, carrying Route 15 through West Rock Ridge in Woodbridge and New Haven, is in the preliminary design stage. Construction alternatives are being evaluated that would correct existing tunnel deficiencies, including potentially constructing a new tunnel barrel in order to maintain traffic during construction. An Environmental Assessment is being prepared in order to document impacts and identify a preferred alternate. Construction is anticipated to begin in spring 2022 and be complete by fall 2026, based upon funding availability. The estimated cost of construction is $200 million.

The Rochambeau Bridges, which carry I-84 over the Housatonic River in Southbury and Newtown, are currently in the design process to rebuild new bridges on the existing substructure. The crossing is made up of two separate and unique structures, one carrying eastbound and the other westbound traffic. The design will leverage the separate structures to enable a traffic shift from one structure to the other, enabling the replacement of each superstructure without any impact to traffic. The cost of the project is $60 million and is scheduled to be advertised in the 2020 to 2021 timeframe.

The East Haddam swing bridge, which carries Route 82 over the Connecticut River, connecting East Haddam and Haddam, is due for a major rehabilitation starting in

2021. The date was set to avoid any conflicts with the Arrigoni Bridge project. This 104 year old structure is a historical landmark that has served the local, state and river traffic communities and industries extremely well. The $45-$60 million rehabilitation will include a deck replacement, structural, mechanical, architectural computer and software upgrades to ensure proper opening and closing to accommodate high boat traffic during the peak summer months. The project's design will look at adding a much needed pedestrian sidewalk to serve the existing community and help foster future economic plans for both towns. The sidewalk may be built as part of this rehabilitation project, or as part of a future construction project. A federal BUILD application promoting rural economic development and transportation connectivity was submitted by the Towns of Haddam and East Haddam in July of 2019, to hopefully obtain funding for the sidewalk. A decision is expected be announced in the fall of 2019.

## Highway Maintenance Facilities

A new highway maintenance repair and stores facility in Rocky Hill was completed in August 2018. The 82,000 SF facility consolidated the existing repair and stores operations in Wethersfield and the outdated machine shop in Portland. The building includes administrative offices, vehicle repair bays, a machine shop, a material storage parts room, and employee support and utility spaces. The project also includes the demolition of an existing obsolete building and the construction of a separate 2,450 SF unheated cold storage building for material storage, a new motor fuel island, and site improvements, plus utilities to support the new and existing buildings that are to remain.

The reconstruction of the Wethersfield Maintenance Facility is underway. The 10 million dollar project began in November of 2018 and is scheduled to be completed in the spring of 2020.

## Public Transportation

A new Bus Maintenance Facility serving the Waterbury Area was completed September 2018. This facility is located on a parcel of property in the town of Watertown, adjacent to Frost Bridge Road (SR 262) and the Naugatuck River. The facility replaces the storage and maintenance facility, located in leased space in a former foundry in the Waterville area of Waterbury. The new 276,000 SF building is a multi-story facility accommodating bus storage, maintenance and administration. Additionally, a trailhead and a multi-use trail were constructed within the project limits to support the Naugatuck River Greenway Trail. The total project cost was approximately $93 million.

The New Haven Rail Yard (NHRY) Facilities Improvement Program is a comprehensive plan to transform and provide state of the art storage, servicing and maintenance facilities for the New Haven Line fleet, as well as CT Commuter Rail service (Shoreline East and Hartford line). The $1.178 billion dollar multi-project program is approximately one-half complete. Completed projects at the NHRY include the M8 Acceptance Facility,

Diesel Storage Yard, Traction Power Supply Substation, Independent Wheel Truing Facility, the Component Change-Out Shop, Maintenance of Way Facility, Central Distribution Warehouse and the Yard Power Upgrade. Active projects at the NHRY include the East End Connection and the West End Yard. Projects currently in design include the Pedestrian Bridge Overpass connecting all four Union Station platforms to each other, and the future 1,000 space public parking garage to be built adjacent to the existing garage.

On June 16, 2018, revenue service began on the CTrail Hartford Line. The New Haven-Hartford-Springfield (NHHS) Rail Program added this key rail component to a more robust and vibrant Connecticut multi-modal regional transportation system. Utilizing funding from the new federal High-Speed Intercity Rail Program and state bond funds, the NHHS Rail Program now provides some of the nation's best passenger rail service. The new train service is connecting communities, generating sustainable economic growth, and helping to build energy independence, as well as provide links to travel corridors and markets within and beyond the region. As the gateway to New England, the NHHS Rail Program's 17 round trips per day from New Haven to Hartford also facilitates improved service to Massachusetts, Vermont and, in the future, Montreal.

Over the past year, the majority of the track work was completed, including new ties, for the most northerly phase of the NHHS project. Double track is now complete for most sections, from New Haven to Windsor, with the exception of a small section in Hartford. This work has resulted in expanded service options, with 17 round trip-passenger trains per day to Hartford and 12 round trips to Springfield. The program has also increased freight capacity.

The program completed the replacement of Amtrak Stations in Berlin, Meriden, and Wallingford. These new stations offer amenities to create an inviting passenger experience to complement rail travel. Five hundred foot long high-level platforms facilitate safe and efficient passenger boarding onto the Hartford Line. Connecting the two platforms at each station are stairways, elevators, and an overhead pedestrian bridge to provide safe and convenient access across the tracks. To shelter passengers from inclement weather, overhead canopies cover approximately half of the station platforms. During winter weather events, the new platforms are equipped with a heating system to melt snow and ice. Passenger train information systems provide near-real time service updates including arrival, departure, and track information. Each station is fitted with security cameras and Blue Light emergency call boxes to provide a safe environment for passengers' trips. Existing Stations in Hartford and New Haven State Street underwent upgrades to provide improved service. While the work at Hartford Union Station was completed in the summer of 2016, a new boarding platform was completed last year in time for revenue service at State Street Station. Similar services to improve the customer experience were also provided at these two stations. Planning and design work continues on future phases of the program including stations in North Haven, Newington, West Hartford, Windsor, and Enfield, along with additional double tracking north of Windsor.

Two significant movable bridges, each over 110 years old, have been identified for replacement along the New Haven Line. These bridges are key pieces of infrastructure that carry rail commuter and intercity service over two rivers and are vital to the operation of the Northeast Corridor. The designs for the replacement of the movable bridge over the Norwalk River, known as the "Walk Bridge", and the movable bridge over the Housatonic River, known as the "Devon Bridge," are underway. The Walk Bridge program is utilizing the Construction Manager / General Contractor (CM/GC) alternative contracting method. Advance projects for the program, CP243 and Danbury Dockyard, are in construction at a combined construction cost of $325 million. The Walk Bridge will start construction in 2020 at an estimated construction cost of $550 million. The Walk Bridge replacement is anticipated to be completed in 2024. The Devon bridge replacement is in the environmental planning phase. The Devon Bridge is anticipated to start construction in 2024 at an estimated cost of $1.5 billion.

Shore Line East railroad expansion is continuing to progress. The Branford and Guilford stations have been expanded and are now operational from both sides of the tracks and construction is substantially complete. Construction of Clinton Station is underway with completion scheduled for the winter of 2021. This project includes the construction of elevators with an up and over pedestrian bridge, and a new platform and parking on the North side of the tracks. The Madison Station Improvements are scheduled to begin design in the winter of 2020. The station upgrades are expected to go into construction in 2021, and a new parking garage will go into construction in 2023.

The project to construct P&W Railroad spur tracks to terminal properties on Waterfront Street in the New Haven Port Area is now complete. Discussions with the New Haven Port Authority regarding surplus properties, owned by the Department in the port area, are ongoing.

The **Bureau of Highway Operations** provided roadway and roadside maintenance to 5,682 effective two-lane miles of roadway and provided snow removal and other roadway maintenance services to 76 state agencies. With respect to snow and ice control, there were 14 winter storms which required the use of 163,797 tons of sodium chloride and 952,352 gallons of liquid magnesium chloride and 0 cubic yards of sand abrasives applied by 634 state trucks assisted by 227 contracted trucks for plowing purposes only. Maintenance of existing roadways included 261 two lane miles of vendor-applied bituminous concrete overlay. In addition, 6,883 linear feet of drainage pipe was installed along with 766 drainage structures. During the past year, maintenance repairs were performed on 771 of the 4,103 state-maintained bridges through the combined efforts of Department personnel and contractors. . The total number of state-maintained bridges increased from 4,004 to 4,103 as many pre-existing culverts were identified and cataloged by the Department.

The Traffic Services Units installed 13,165 miles of centerlines and lane lines; erected 1,363 new traffic regulatory, warning and directional signs; renewed or removed 7,725 existing signs; continued maintenance of 4,406 traffic signals and 1,279 miles of highway illumination; and installed 50 new traffic signals and 181 signal revisions.

There were 4,175 highway encroachment permits issued. The Oversize/Overweight Vehicle Permit Unit collected $3,733.077 for the issuance of 89,224 oversize/overweight permit trips, 2,937 annual permits, 70 radioactive permits, and 58 industrial permits.

The Department's computerized traffic control signal systems include a total of 957 traffic signals on 53 major arterials in 58 municipalities.

The Operations Centers responded to a total of 4,457 reported incidents on the state's limited access highway system. The Newington and Bridgeport Operations Centers monitor 333 highway cameras and operate 136 variable message signs and 14 highway advisory radio stations. The Department's Connecticut Highway Assistance Motorist Patrol (CHAMP) Program provided highway assistance to 7,551 motorists along the I-95 corridor from the New York state line to the Rhode Island State line. In the Danbury to greater Hartford area the CHAMP Program provided assistance to 5,549 motorists.

The **Bureau of Policy and Planning** conducts planning studies and associated activities for the movement of people and goods for all modes of transportation including highway, rail, bus, maritime, and pedestrian/bicycle. Documentation of proposed alternatives with environmental analyses is developed for all proposed projects through a public informational process. The Bureau interacts with Legislative and Congressional members and staff, as well as nationally recognized transportation organizations, on various transportation bills including major authorizations and appropriation bills for surface transportation, and intercity passenger rail.

The Bureau has moved into production with a new comprehensive EXOR digitized road network, which includes over 21,000 miles of state and local roadways. This network and associated new Geospatial Linear Reference System supports asset and data integration for the entire Department including via the Transportation Enterprise Development Group. While the Roadway Inventory Unit is primarily focused on the Highway Performance Monitoring System (HPMS) and Model Inventory of Roadway Elements (MIRE) federal mandates, other important CTDOT initiatives benefit from this work such as Asset Management, FMIS, capital project delivery, VIP paving, pavement condition, GIS, safety, sign, sign supports, signal work areas and traffic volume data reporting etc.

The Bureau maintains the State's traffic counting program, Photolog Automated Roadway Analyzer Pavement Data Collection and Processing technologies and continuous inventory of the highway system. These data are basic but critical elements needed to estimate future travel demand, identify current and future capacity deficiencies, analyze alternate highway and transit improvement, environmental studies/permitting as well as by the general public. Federal mandates related to HPMS and MIRE are critical to federal funding apportionment and Highway Safety requirements, which are also tied to significant funding for the Department.

The Statewide Transportation Improvement Program Unit develops, maintains and coordinates Metropolitan Planning Organizations (MPOs) and USDOT approval of the Statewide Transportation Improvement Program and periodic revisions. The Unit provides the MPOs/

Council of Governments (COGs) and the Public the previous fiscal year Obligated and Granted Projects list as mandated by Federal Authorization bill, and calculates and allocates estimated Federal Authorization funds to Connecticut's eight MPOs and two Rural Planning Organizations for Metropolitan Transportation Plan planning purposes. The Unit develops, maintains and updates the Department's Public Involvement Process document and coordinates the Bureau's Title VI training.

The COG Coordination Unit is the designated Department Liaison for the MPOs, Councils of Governments (COG) and local officials on planning efforts to ensure that the planning process is conducted in accordance with the requirements of federal laws and regulations. The Unit coordinates or assists with the coordination or dissemination of information on various transportation planning programs and activities and transportation planning documents; and obtains information on projects and programs from individuals in other CTDOT offices and disseminates information to appropriate parties. The Unit solicits the MPOs/COGs for project proposals under the Congestion Mitigation Air Quality (CMAQ) program, the Transportation Alternatives program and the corridor study initiative. The Unit participates in the administration of the MPO/COGs transportation studies and the development of Project Authorization Letters.

The Travel Demand/Air Quality Modeling Unit maintains the statewide travel demand model which utilizes current and future socio-economic and demographic projections to estimate travel demand. The Unit manipulates, analyzes and prepares Census, American Community Survey and other demographic data for utilization in the Statewide Travel Demand Model, and participates in the development and preparation of alternative analysis for proposed transit and highway projects. The Unit prepares and analyzes air quality emission reduction benefits for regional projects submitted for the CMAQ program. The Unit conducts project and regional level transportation air quality conformity analysis and conducts detailed analysis of air quality emission reductions utilizing EPA required MOVES 2014a software. The Unit participates in the development of motor vehicle emission budgets for various nonattainment areas within the state of Connecticut per pollutant; and reviews project plans and designs to determine air quality conformity determination status, as well as NEPA requirements. The Unit prepares boundary adjustment to Federal Aid Urban Areas and to Census Tracts and block groups for the Census Bureau's PSAP program.

The Highway Safety Office (HSO) develops the Annual Highway Safety Plan and the Annual Highway Safety Report, which ensures compliance with Department policies, National Highway Traffic Safety Administration guidelines and relevant federal laws and regulations. These measures are taken in an effort to reduce injuries and fatalities as a result of traffic crashes related to driver behavior on Connecticut roadways. The enforcement based program areas include Impaired Driving, Distracted Driving, Occupant Protection, and Speed and Aggressive Driving. Additional program areas are Child Passenger Safety, Motorcyclist Safety, Non-Motorized Safety, Police Traffic Services, Traffic Records, and Racial Profiling. The HSO also coordinates the Connecticut Drug Recognition Expert program.

The HSO is responsible for collecting and analyzing crash data for all municipal and State police agencies. This data is tracked with the Fatality Analysis Reporting System as well as

the Connecticut Crash Data Repository. The HSO partners with the Connecticut Transportation Safety Research Center at UConn on the following projects for driver behavior: Driver Simulator Project, Pedestrian Observation Project, and the Northeast Autonomous and Connected Vehicle

The Bureau implements the transportation performance management requirements of federal law, including reporting and setting targets for 17 national performance measures. The Bureau coordinates with MPOs in national performance target setting, as they are also required to set corresponding performance targets. The Bureau publishes performance measures and targets on its webpage for bridge and road conditions, project delivery, highway safety, bicycle and pedestrian accessibility, and rail and bus transit programs.

The Bureau prepares the state's long-range transportation plan, which includes four goal areas of Economic Growth, Deliverability, Quality of Life, and Sustainability. The Bureau also develops strategic plans and studies on congestion reduction, project-financing alternatives such as toll options, corridor needs and deficiency studies, and public transportation (assisting the Bureau of Public Transportation). The Bureau also coordinates the agency's sustainability and resiliency planning.

The Bureau leads CTDOT's planning for Transit-Oriented Development, including administering grants, participating in interagency task forces, and assisting municipalities with planning and design technical services. The Bureau also prepares the multi-modal Statewide Freight Plan, which focuses on economic competiveness, efficiency, safety, and environmental factors.

The Bureau coordinates and leads DOT's participation in Connected and Autonomous Vehicle (CAV) activities within the state, region and nation, including partnering with municipalities and OPM on implementing the CAV pilot project legislation, and co-hosting (with UConn and FHWA) the successful annual Northeast CAV Summit.

The Bureau reviews traffic counts for Major Traffic Generator (new development) submittals for the Office of the State Traffic Administration; develops traffic projections for state transportation projects; and provides efficient public access to this traffic count data via Google Earth.

The Bureau assists with implementing the state's Complete Streets law. Complete Streets is an approach to provide safe access for all transportation users (pedestrians, bicyclists, transit users and vehicle operators) via a comprehensive, integrated, and connected multi-modal network of transportation options.

The Bureau administers the "Community Connectivity Program," to improve conditions for walking and bicycling to and within urban, suburban and rural community centers. Program components include: Road Safety Audits at important corridors and intersections; and the Community Connectivity Grant Program to provide municipalities with construction funding for targeted infrastructure improvements. Eighty cities/towns have been approved for grants totaling approximately $25 million.

The Bureau completed the Active Transportation Plan in 2019, a multi-pronged approach to improve bicycle and pedestrian transportation. The Bureau helps to implement the actions in the Plan to improve safety, connections, and accessibility.

The Office of Environmental Planning within the Bureau provides oversight and support for required National and Connecticut Environmental Policy Act (NEPA / CEPA) implementation and proper documentation for all Department activities, including major projects such as: The "WALK" bridge program, I-84 Hartford Viaduct; I-84, Exits 3-8 in Danbury; the Route 7 and 15 Interchange in Norwalk; the I-91/ I-691 / Route 15 Interchange in Meriden, Heroes Tunnel on Route 15 in Woodbridge; the Stevenson Dam; and the Saugatuck Swing Bridge in Westport. All projects within the Department are screened for the appropriate level of documentation under NEPA and CEPA and the Bureau continues to stay informed and comment on legislative and proposed federal rule changes, as well continuing to seek out efficiencies in process, and provide training.

The Bureau ensures projects are screened and comply with Section 106 of the National Historic Preservation Act and Section 4(f) of the Department of Transportation Act and also updates and maintains a Historic Bridge Inventory for bridges statewide.

The Bureau is the lead liaison with various State and Federal regulatory agencies such as the US Army Corps of Engineers, US Environmental Protection Agency and the Connecticut Department of Energy and Environmental Protection regarding water and natural resources issues. The Office of Environmental Planning obtains the necessary water resource and Stormwater permits required for all Department initiated projects, and ensures projects properly avoid, minimize and mitigate for potential impacts to regulated resources. The Bureau is responsible for coordination efforts and compliance under Section 7 of the Endangered Species Act with the US Fish and Wildlife Service and National Marine Fisheries for federally funded projects. Responsibilities also include inspections of active State controlled construction sites and maintenance projects to ensure construction and reporting compliance with permit conditions, State and federal laws and regulations, and Department Best Management Practices.

The General Permit for the Discharge of Stormwater from DOT Separate Stormwater Sewer Systems (MS4 Permit) was finalized and issued to the Department on July 1, 2019. Environmental Planning is the lead for developing mapping for the statewide stormwater system and will continue to work with various Bureaus to comply with this new permit.

The Bureau is responsible for noise analysis and compliance and is also in the process of creating a noise barrier wall inventory for use in asset management efforts.

**The Bureau of Public Transportation**: In November 2018, a new 276,000 square foot bus maintenance facility opened in Watertown, CT. The multi-story garage accommodates bus storage, vehicle maintenance and administration staff. Additionally, a trailhead and a multi-use trail were constructed within the project limits to support the Naugatuck River Greenway Trail. This facility is located on a parcel of property in the town of Watertown, adjacent to Frost Bridge

Road (SR 262) and the Naugatuck River. The facility replaces the storage and maintenance facility, located in leased space in a former foundry in the Waterville area of Waterbury. The total project cost is approximately $93 million dollars.

The New Haven Rail Yard (NHRY) Facilities Improvement Program is a comprehensive plan to transform and provide state of the art storage, servicing and maintenance facilities for the New Haven Line M8 rail fleet, as well as locomotives and rail cars serving Shore Line East and Hartford Line. The $1.2 billion dollar multi-project program is approximately one-third complete. Completed projects at the NHRY include the M8 Acceptance Facility, Diesel Storage Yard, Traction Power Supply Substation, Independent Wheel Truing Facility, Component Change-Out (CCO) Shop and Maintenance of Way Facility, Central Distribution Warehouse and the Yard Power Upgrade project. Construction began on the East End Connector and West End Yard projects. Design continued on the proposed 1,000 space public parking garage to be built adjacent to the existing garage.

The Hartford Line completed its first full year of service, providing 635,000 passenger trips between July 1, 2018 and June 30, 2019. The New Haven-Hartford-Springfield (NHHS) Rail Program added this key rail component to a more robust and vibrant Connecticut multi-modal regional transportation system. Utilizing funding from the new federal High-Speed Intercity Rail Program and state bond funds, the NHHS Rail Program now provides some of the nation's best passenger rail services. As the gateway to New England, the NHHS Rail Program's 17 round trips per day from New Haven to Hartford will also facilitate improved service to Massachusetts, Vermont and, in the future, Montreal. New train service will connect communities, generate sustainable economic growth, help build energy independence, and provide links to travel corridors and markets within and beyond the region.

Over the past year, the majority of the civil construction work was completed, including new track bedding, ballast, and improvements to drainage as well as retaining walls and bridge replacements. The most northerly phase of the work (Phase 3A North) to upgrade the majority of the line to a double track configuration is now under way. This work will result in expanded service options, with up to 17 round trip-passenger trains per day to Hartford and 12 round trips to Springfield. The program also increases freight capacity.

The program included replacing the Amtrak Stations in Berlin, Meriden, and Wallingford. These new stations offer amenities to create an inviting passenger experience to complement rail travel. Five hundred foot long high-level platforms facilitate safe and efficient passenger boarding onto Hartford Line. Connecting the two platforms at each station are stairways, elevators, and an overhead pedestrian bridge to provide safe and convenient access across the tracks. To shelter passengers from inclement weather, overhead canopies cover approximately half of the station platforms. During winter weather events, the new platforms are equipped with a heating system to melt snow and ice. Passenger train information systems provide near-real time service updates including arrival, departure, and track information. Each station is fitted with security cameras and Blue Light emergency call boxes to provide a safe environment for passengers' trips. Existing Stations in Hartford and New Haven State Street underwent upgrades to provide improved service. While the work at Hartford Union Station was completed in the summer of 2016, a new boarding platform was completed this year in time for

revenue service at State Street Station. Similar services to improve the customer experience were also provided at these two stations. Planning and design work continues on future phases of the program including stations in North Haven, Newington, West Hartford and Enfield, along with additional double tracking north of Windsor.

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Shore Line East railroad expansion is continuing to progress. Clinton Station design is nearing completion and scheduled to advertise in January 2018, with construction beginning in the spring 2018. This project includes the construction of elevators with an up and over pedestrian bridge, and a new platform and parking on the North side of the tracks. The Madison Station Improvements are scheduled to begin design in the winter of 2017. The station upgrades are expected to go into construction in 2019, and a new parking garage will go into construction in 2020.

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