

**Transportation Capital Infrastructure Program
Capital Plan Update Report
2022 - 2026**



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Prepared by the Bureau of Engineering and Construction

Chief Engineer's Office

The CTDOT Capital Program

Overview

This is an update of the interim Capital Plan that was published in February 2022. This update includes developments related to the passage of the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (BIL), and recent guidance related to implementation of the BIL from federal agencies as well as ongoing coordination with Connecticut's Councils of Governments (COGs) and other stakeholders.

Congress passed the Infrastructure Investment and Jobs Act (IIJA) in the fall of 2021, which funds the transportation program for five years (FFY22-26) subject to annual appropriations. The BIL provides Connecticut with approximately \$5.38 billion in federal transportation funding over the five years, which is an increase of \$1.6 billion over the levels authorized in the previous federal legislation, the FAST Act. Despite this increase in federal funding, high levels of inflation, labor shortages, and supply chain disruptions pose challenges to effectively delivering projects in a timely manner.

FHWA + FTA Formula Funding	Grand Total by Year (estimated)	Program Size Relative to 2021 Program	Increase over 2021 Program
2021	\$ 750,525,616		
2022	\$ 1,037,830,603	138%	\$ 287,304,987
2023	\$ 1,056,227,798	141%	\$ 305,702,182
2024	\$ 1,076,632,956	143%	\$ 326,107,340
2025	\$ 1,096,003,844	146%	\$ 345,478,228
2026	\$ 1,117,087,890	149%	\$ 366,262,274

The BIL maintains the FAST Act highway program while providing a focus on safety, bridges, climate change, resiliency, and project delivery. The BIL also creates more than a dozen new highway programs, including reducing carbon emissions, increasing resiliency, reconnecting communities, and rehabilitating bridges in critical need of repair. For FTA, the BIL provides new and increased funding for State of Good Repair and Low or No Emission Grants, while continuing the existing structure for FTA programs with significant funding increases. FTA has established four priorities for implementation of the BIL: Safety, Modernization, Climate and Equity.

This increased federal investment, along with the ongoing robust state-funded program, enables the state to continue to repair and rebuild our roads and bridges; invest in major projects with safety, equity, resiliency, and operational improvements as an emphasis, bring Connecticut's rail assets into a state of good repair, and improve speeds on the rail lines. Combined, these investments will help move Connecticut forward in reducing transportation emissions and accelerating investments in a cleaner, more equitable and resilient transportation system.

The Department continues to expedite projects in the design pipeline. In the highway and bridge program alone, the Department has accelerated approximately \$300 million worth of projects into

FY22. A similar approach is being used for FY23. The rail and transit program has also accelerated design efforts in FY22 to position the program for the increase in federal funds through the existing FTA program structure as well as the significant increase in Federal Railroad Administration competitive funding opportunities. The Department is also taking steps to expand our internal and external project delivery capabilities to support the expanded transportation program. The Department is moving forward with higher funding levels to support our asset management initiatives, many of which can be implemented in a quick fashion. For FY24-26, additional projects are being initiated to replace the projects that were accelerated, as well as to meet the higher funding levels. Design projects that are initiated in FY22 and FY23 will lead to construction projects in the outer years. Among the projects accelerated were the following:

- 156-181: Rehabilitation of Bridge No. 00162 carrying I-95 over Metro North Railroad in West Haven
- 63-726: Rehabilitation of Bridge No. 01469B (Dutch Point Viaduct) carrying I-91 over Connecticut Southern Railroad, SR 598 WB, & TR 803 in Hartford
- 82-316: Reconfiguration of Route 17 On-Ramp onto Route 9 North in Middletown
- 170-3551 & 170-3557: Pin and Hanger Program to address NBI Bridges Statewide
- 79-246: I-91/I-691/Route 15 Interchange – Improvements to I-91 NB, I-691 WB, & Route 15 NB in Meriden
- 300-214: Track Improvement Mobility Enhancement – 1 (TIME-1), New Haven Line between Bridgeport and Stratford

The increased level of funding is good news for the state's transportation system. The Department is taking a phased approach to be ready for the short-term (FY22- FY23) while planning for the longer-term (FY24-26). As guidance and more information is provided by our federal partners, the vision that is captured in this legislation will be implemented.

Federal Formula Funding

Since the last update of the Capital Program in February 2022, Congress passed the FY22 Appropriations bill which provides funds authorized in the BIL. Based on formula funding alone, Connecticut expects to receive approximately \$4.1 billion over five years in Federal highway formula funding for highways and bridges and \$1.3 billion over five years for public transit. In addition to formula funding Connecticut has received in previous years, the BIL created new formula programs, including the following:

- National Electric Vehicle Infrastructure (NEVI) Formula Program

The NEVI Program provides funding to states to strategically deploy electric vehicle (EV) charging stations and to establish an interconnected network to facilitate data collection, access, and reliability. EV charging stations built using this funding source must be non-proprietary, allow for open-access payment methods, be publicly available or available to authorized commercial motor vehicle operators from more than one company, and be located along designated FHWA Alternative Fuel Corridors (AFCs). To receive this funding, the Department has submitted a plan to the U.S. Joint Office of Energy and

Transportation detailing how the state intends to expand the EV fast charging network. Pending approval of the plan, funds from the NEVI Program could be available for obligation as early as October 1, 2022.

Connecticut received \$7.7 million in FY22 and expects to receive about \$53 million over five years through the NEVI Program.

- Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Program

The PROTECT Program provides a total of \$7.3 billion in formula funding to states and \$1.4 billion in competitive grants to increase the resilience of our transportation system. This includes funding for evacuation routes, coastal resilience, making existing infrastructure more resilient, or efforts to move infrastructure to nearby locations not continuously impacted by extreme weather and natural disasters. Guidance from USDOT for the PROTECT program was released in late July 2022 and the Department is working to identify projects that may be eligible for these funds. The Department is considering culvert replacements, generator replacements, a vulnerability assessment, and other projects. The program will fund the development of a Resilience Improvement Plan that will allow the State to use a greater Federal cost share for projects outlined in the plan, saving matching funds on both formula and grant funded projects.

Connecticut expects to receive \$17.3 million in formula funding in FY22 and expects to receive \$90 million over the five-year program.

- Bridge Replacement, Rehabilitation, Preservation, Protection, and Construction Program (Bridge Formula Program)

The Bridge Formula Program provides funding for highway bridge replacement, rehabilitation, preservation, protection, and construction projects on public roads, with a focus on asset management. Through this program, states are encouraged to focus BFP funding on projects that improve the condition of in-service highway bridges classified in poor condition and that preserve or improve the condition of in-service highway bridges classified in fair condition. BFP funding is distributed by a statutory formula based on the relative costs of replacing all highway bridges classified in poor condition in a State and the relative costs of rehabilitating all highway bridges classified in fair condition in a State. Connecticut has 248 bridges in poor condition, according to the 2020 National Bridge Inventory. The following programs and projects are proposed to be funded through this program:

- Bridge Joint Replacement Program
- UHPC Beam End Repairs on Various Bridges Statewide
- Bridge Deck Preservations of Various Bridges Statewide
- NBI Bridge Painting/Metalizing Statewide
- I-95 Bridges Concrete Sealing Statewide

- Project 63-731: Rehabilitation of Bridge 05868 carrying I-84 EB to I-91 NB in Hartford
- Project 92-696: Rehabilitation of Bridge 00333 carrying Route 34 over US 1 & MNRR in New Haven

Connecticut received \$121.2 million in FY22 and expects to receive \$605.8 million over the five-year program for the Bridge Formula Program. In addition to these new funds, as part of the 2022 Appropriations Act Connecticut received \$40 through the Highway Infrastructure Program for the Bridge Replacement and Rehabilitation Program.

- **Carbon Reduction Program**









Under the Carbon Reduction Program, states are required to develop Carbon Reduction Strategies by November 2023 in consultation with COGs to identify projects and strategies tailored to reduce carbon dioxide emissions from on-road sources. Eligible projects include zero emission vehicles and facilities; energy efficient street lighting and traffic control signals; truck stop and port electrification systems to reduce the environmental impacts of freight movement and carbon dioxide emissions at port facilities; and public transportation projects such as the construction of bus rapid transit corridors or dedicated bus lanes. The Department is initiating projects that are eligible for these funds and to develop the Carbon Reduction Strategy plan. The development of the Carbon Reduction Strategy is an eligible use of program funds, and the Department expects to include a feasibility assessment of solar for DOT properties. The funding is sub-allocated by urbanized areas, similar to the Transportation Alternatives Program, and projects that fall within each suballocation will be submitted by the COGs.

Connecticut received \$15.2 million in FY22 and expects to receive \$79 million over the five-year program.

Federal Discretionary Funding

In addition to the formula funds, the BIL makes more than \$100 billion in competitive federal transportation grants available for Connecticut to pursue. The Department has established a dedicated Grants and Socio-Economics unit in the Bureau of Policy & Planning to support this initiative. This new unit will collaborate closely with and support the government relations office as well as key personnel from all Bureaus regarding grant applications. These discretionary grant programs provide even more opportunities for improvements to CT's transportation system. The Department and transportation stakeholders are monitoring the federal Notice of Funding Opportunities (NOFOs) as they are released by USDOT. Listed below are a sampling of some of the grant opportunities:

NEC COMPETITIVE GRANTS		
	\$30 B	<ul style="list-style-type: none"> • Northeast Corridor grants to procure & address deferred maintenance backlog on Amtrak's Northeast Corridor (\$6 B) • Intercity Passenger Rail Fed-State Partnership grants to repair/replace/ rehabilitate qualified railroad assets to improve state of good & performance (\$24 B)

NATIONAL COMPETITIVE GRANTS		
	\$9 B	<ul style="list-style-type: none"> • *NEW* Safe Streets & Roads for All grants for local governments to improve safety and reduce crashes in local communities (\$6 B) • *NEW* Reconnecting Communities grants for planning, design, demolition, and reconstruction of street grids/parks divided by transportation infrastructure (\$1 B) • *NEW* Rural Surface Transportation Grants for state and local governments to improve and expand surface transportation infrastructure and mobility service in rural areas (\$2 B)
	\$15.8 B	<ul style="list-style-type: none"> • *NEW* Bridge grants to repair, replace and rehab bridges <i>(grants to supplement CT's \$561 M in formula funding)</i>
	\$38 B	<ul style="list-style-type: none"> • RAISE Grants for projects of local or regional significance, formerly TIGER/BUILD (\$15 B) • *NEW* Megaproject grants for multi-modal, multi-jurisdictional projects of national or regional significance (\$15 B) • INFRA grants for highway/rail projects of regional & national economic significance (\$8 B)
	\$23 B	<ul style="list-style-type: none"> • Capital Investment Grants for new or expanded commuter rail and bus rapid transit service
	\$17.25 B	<ul style="list-style-type: none"> • CRISI Grants to improve safety, efficiency, and reliability of intercity passenger rail (\$10 B) • Railroad Crossing Elimination grants to eliminate railway-highway crossing hazards (\$5.5 B) • *NEW* ADA Upgrades to Rail Transit grants to eliminate access barriers (\$1.75 B)
	\$5.6 B	<ul style="list-style-type: none"> • Low-No Emissions Bus grants for low and no emissions buses and the facilities that support them <i>(grants to supplement formula funding for the conversion of CT bus transit fleet)</i>
	\$5 B	<ul style="list-style-type: none"> • *NEW* Culvert grants to remove/replace/restore culverts & address the flow of water through roads, bridges, railroads, tracks and trails <i>(related to flooding, many of CT's culverts are +50 years old & at the end of their service life)</i>
	\$2.5 B	<ul style="list-style-type: none"> • *NEW* EV Charging grant funding to supplement the formula funding provided to CT, allowing the build out of CT's publicly accessible charging stations.
Over \$100 B		Competitive transportation grants over the next 5 years for Connecticut to pursue <i>(above outlines a targeted list of competitive grants not all grant programs in bill)</i>

The Department is actively pursuing these grant opportunities and will likely apply for funding from the Bridge Investment Program, the Reconnecting Communities Pilot Program, the All Stations Accessibility Program, and others. Additional grant funds are also available for COGs and municipalities to apply for, including the Safe Streets and Roads for All (SS4A) Grant Program. Among the discretionary grants CTDOT has already applied for include the following:

- 2022 MEGA Grant – Track Improvement Mobility Enhancement Project, Bridgeport – Stratford
- 2022 INFRA/MEGA – I-91/I-691/Route 15 Interchange Improvements, Meriden and Middletown

- 2022 Bridge Investment Program Grant – I-95 Exits 7-9, Bridge No. 00032 Planning and Environmental Linkages Study, Stamford
- 2022 Bridge Investment Program Grant – Gold Star Memorial Bridge Northbound Structure Rehabilitation Project, New London

Planning and Environmental Linkages (PEL) Studies

For many of the State’s major initiatives, the Department is pivoting existing studies to a new format - Planning and Environmental Linkages (PEL) studies. PEL is a process approach that considers environmental, community and economic goals in the very early planning phase of a transportation program. It is generally conducted before any project construction phasing is identified, and before specific problems and solutions are known. The PEL process is being used nationally as a tool for pre-NEPA activities.

The PEL studies are also intended to recommend class(es) of action under NEPA (EA, EIS, etc.) and the prioritization or phasing of those projects with respect to their importance and anticipated available funding. It is that component, the prioritization and phasing of projects, that is intended to allow the Department to strategically implement targeted investments to improve safety, mobility, and congestion around the State, which will serve as a catalyst for future economic growth along those corridors. Also, as some recommended projects may be spot improvements, they can be completed at a much lower cost than upgrading an entire corridor, while still providing many of the benefits of a much larger project.

The PEL studies currently underway include:

- I-84 in Danbury (estimated completion December 2023),
- Greater Hartford Mobility Study (estimated completion December 2022),
- I-84 / Route 8 interchange in Waterbury (estimated completion July 2023),
- I-95 vicinity of exits 7-9 including Bridge No. 32 in Stamford (estimated completion June 2024),
- I-95 Exits 19-27A in Fairfield and Bridgeport (estimated completion in 2025).

Rail

The BIL provides funding to support ongoing rail initiatives and the expansion of many others. Funding has been made available for programs , such as TIME For CT, the plan to increase train speeds and improve travel times on the passenger rail system; the Stamford Transportation Center; expanding the already successful Hartford Line service with new stations; the New Haven Rail Yard capital investment program; purchasing new rail cars to operate throughout the State; replacing the WALK Bridge; and modernizing the Waterbury Branch Line including installing new high-level platforms at five stations.

As part of the BIL, the FRA’s Federal-State Partnership for Intercity Passenger Rail Grants program provides funding for intercity passenger transportation projects located on the Northeast Corridor. This grant program now funds projects to improve intercity passenger rail service performance, including reduced trip times, increased train frequencies, higher operating speeds,

improved reliability, expanded capacity, reduced congestion, electrification, and other improvements. This presents a unique opportunity for Connecticut to continue to invest in and expand passenger rail service throughout the state. In 2021, the Northeast Corridor Commission released the multi-state, multi-agency rail infrastructure plan CONNECT NEC 2035 (C35). The 15-year rail service and infrastructure plan represent collaboration between Connecticut and other state governments in the Northeast, the federal government, eight commuter rail agencies, and Amtrak through the NEC Commission. It outlines specific details for 150 infrastructure projects in the region, including major projects in Connecticut that will among other things create a one-seat ride from Waterbury to New York City and will establish express service from both Hartford and New London into New York City.

The BIL increased funding for existing rail grant programs and created new grant programs, including the new Railroad Crossing Elimination Grant Program and the All Stations Accessibility Program. In FY21, Connecticut received a Consolidated Rail Infrastructure and Safety Improvement (CRISI) grant for Enfield Station. The proposed project will construct a new station to accommodate increased service as part of the Hartford Line Program and improve under bridge clearance in Enfield.

Bus

The Bus Capital Program supports transit services around the state including state-owned *CTtransit* that operates in eight urban areas. The program also provides funding for vehicle purchases, facilities upgrade improvements, as well as infrastructure to support both fixed route and paratransit services operated by transit districts in urban and rural areas around the state. Before the COVID pandemic, these services together served 40 million customers per year. The Department continues to focus on transitioning the transit fleet from diesel-hybrid buses to battery-electric buses and deploying new bus stops and a state-wide real-time bus information system. An initial order of 12 battery-electric buses has been complete, with 10 being placed and in service *CTtransit* New Haven Division, and the remaining two being placed at *CTtransit* Stamford Division upon the completion of their improvements to support the bus electrification effort, with construction completion expected by fall of 2022.

The Department continues to advance a first in the nation pilot project that tests the performance and operation of full size, automated battery-operated electric buses (BEB) in revenue service on *CTfastrak*. This demonstration project will deploy three 40' New Flyer Excelsior Charge BEBs equipped with automated driving capabilities. This includes steering, accelerating, and braking, as well as precision docking at *CTfastrak* station platforms, as well as vehicle platooning.

Move New Haven, a comprehensive plan for improved bus service in the greater New Haven area, proposed expanded service hours and bus rapid transit routes along Grand, Dixwell, and Whalley Avenue. The Department is actively working with City of New Haven engineers to develop and introduce a bus rapid transit route through the downtown New Haven corridor.

Highway Use Fee (HUF)

In the 2021 session, the Legislature passed HB 6688, a bill that establishes a highway use fee on certain heavy, multi-unit motor vehicles on the state's highways. Revenue from the fee will be directed to the Special Transportation Fund (STF). The fee is expected to generate about \$45 million in revenue in SFY23 and \$90 million annually thereafter. These funds will support an expanded Capital Program of approximately \$1.15 billion. These funds will be utilized to support a variety of transportation initiatives including the following:

- Transit customer service enhancements,
- Transit service improvements,
- Expanded community connectivity program,
- Rural transportation improvement program,
- Wrong way driver countermeasures program,
- Additional Interstate truck parking, and
- Traffic signal modernization program.

Wrong Way Driving

In recent years, the number of wrong way driving occurrences on the state's highways has significantly increased, often with tragic consequences. To address this issue, the Department received \$20 million in state bond funding to address the increase in wrong way driving seen on the state's roadways. The Department conducted a network screening analysis focused on ramp locations where on and off-ramps are on the same side of the road, where there is a higher risk of experiencing wrong way events. These Wrong Way Detection Systems typically include a 360-degree camera at the ramp intersection to detect vehicles traveling in the wrong direction and wrong-way signs with red circular LED lights, which are activated to a flash when a wrong-way vehicle is detected. The Department has identified locations for the installation of these systems in 2022 and 2023. The Department is also exploring a number of near-term mitigation strategies to address the issue as quickly as possible.

Traffic Signals

Traffic signals are a key asset class in CTDOT's highway transportation network and play a vital role in support of the Department's mission to provide a safe and efficient transportation network in Connecticut. We operate over 2,500 traffic signals – more than all the other New England state DOTs combined. To improve traffic signal operational efficiency and safety while reducing delays to motorists the Department is planning a 10-year program for the systematic upgrade of traffic signal equipment. Targeted investment in our traffic signal system will provide improvements in safety, improved air quality, reduced congestion and travel efficiency for commuters, transit passengers, and pedestrians across Connecticut. From 2023 – 2026, CTDOT is planning over 1,300 upgrades including signal modifications for new pedestrian features, upgrades from side street green to concurrent pedestrian crossings, upgrades to vehicle detection, upgrades to detection and controller cabinets, and full traffic signal replacements. These investments will help better address the need for all roadway users.

Safety

The Department continues to prioritize safety across all transportation modes and through all our programs. The Vision Zero Council, established in 2021 by Public Act 21-28, is an interagency work group tasked with developing statewide policy to eliminate transportation-related fatalities and severe injuries involving pedestrians, bicyclists, transit users, motorists, and passengers. Safety efforts are also guided by a Strategic Highway Safety Plan (SHSP), which is required by the federal Highway Safety Improvement Program (HSIP). The 5-year plan is developed by safety stakeholders, who collaborate on safety efforts and leverage resources. The current SHSP was approved in May 2022. Similar safety plans have been prepared and completed for each of the nine COGs in Connecticut. CTDOT submitted a Highway Safety Improvement Program Implementation Plan in June 2022 to the Federal Highway Administration which contains a list of programs and projects to be initiated in Federal Fiscal Year 2023 to reduce fatal and serious injury crashes on Connecticut's public roadways. Overall, it's anticipated that approximately \$38 million of projects will be advanced annually utilizing HSIP funds.

Complete Streets & Active Transportation

The Department has implemented a Complete Streets Policy through training, design guidance, funding, data collection, and plans to monitor the output through performance measures. Complete Streets is a means to provide safe access for all users (pedestrians, persons using mobility aids, bicyclists, transit users and vehicle operators) by providing a comprehensive, integrated, and connected multi-modal network of transportation options. Over the last five years an average of 3.75 percent of the annual budget has been used to create and enhance walkways, bikeways, and various associated amenities. The Department awarded 45 projects in SFY21 that included elements for pedestrians or bicyclists, such as sidewalks, ramps, pedestrian signals, push-buttons, signs, and pedestrian/bicycle trails. The total dollars expended for these items was approximately \$21.9 million in SFY 2021, which is about 3.8 percent of the SFY21 total funds awarded for the construction, restoration, rehabilitation, or relocation of roads in the state.

Through the federal Transportation Alternatives Set-Aside, Connecticut received \$14 million from the BIL in FY22, up from \$9 million in previous years. Of this amount, 59 percent must be suballocated to and spent on projects within urbanized areas. The BIL also added a provision to the TA Set-Aside requiring that a competitive process be used for project prioritization and selection. Projects should be in high-need areas, such as low-income, transit-dependent, rural or other areas. The Department is continuing its coordination with the COGs to fully program this increase in funding.

The Community Connectivity Grant Program provides construction funding for local initiatives that will improve safety and accessibility for bicyclists and pedestrians in and around community centers, encouraging more people to use these healthy and environmentally sustainable modes of travel. The fourth round of funding was awarded in February 2022. With this fourth round of funding, 104 awards totaling more than \$38 million will have been invested in Connecticut's towns and cities under the program during the past four years. This program will continue in future years and the level of funding will increase as needed to support the high interest in this program.

In order to support additional complete streets and other safety efforts, the Department is developing a \$5 million program to be used for short-term complete streets projects to supplement existing programs.

Capital Plan Coordination

Since the publishing of the Capital Plan Update in February 2022, CTDOT hosted a LEAN event with the COGs to improve coordination and review the process of initiating projects into the Capital Plan. As part of the LEAN event, the MTP and study processes were mapped out, opportunities for improvement were identified, and improved processes were developed and agreed to. CTDOT and the COGs will continue to work on ways to provide a more transparent process for projects to be developed at the regional level, recommended by the COG, CTDOT, and municipalities, and ultimately become programmed projects in the Capital Plan.

Capital Plan Project Listing

The attached 5-year Capital Plan project listing contains information on the specific projects and programs contemplated for FFY22 - FFY26 as well as anticipated funding for each. This project listing contains projects that are expected to be financed with available funding. As new Federal programs are better defined and associated funding is distributed, adjustments will occur to add new initiatives and reprogram planned projects, while maintaining fiscal constraint. The annual update to the 5-year Capital Plan will be published in early 2023 and will further detail progress towards implementation of the BIL provisions.