

September 2023

VMT REDUCTION STRATEGIES: GREATER NAUGATUCK VALLEY PLANNING REGION



Prepared by:
Naugatuck Valley
Council of Governments

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RESOLUTION 2024-06

ENDORSEMENT OF THE VMT REDUCTION STRATEGIES: GREATER NAUGATUCK VALLEY PLANNING REGION

WHEREAS, Governor Lamont signed Executive Order 21-3 in December, 2021, to address environmental protection priorities across the state; and,

WHEREAS, the CTDOT was required by this order to develop a goal for vehicle miles traveled (VMT) reduction, as well as strategies to achieve this goal; and

WHEREAS, the CTDOT published the goal in Spring, 2023, of a 5% per capita reduction in VMT over 2019 levels by 2030; and,


WHEREAS, the NVCOG has previously identified a regional goal of reducing VMT, as well as priority projects to help advance this goal; and,

WHEREAS, VMT Reduction Strategies: Greater Naugatuck Valley Planning Region lays out strategies underway in the region as well as project priorities to achieve VMT reduction goals;

THEREFORE, BE IT RESOLVED, that the Naugatuck Valley Council of Governments endorses VMT Reduction Strategies: Greater Naugatuck Valley Planning Region as the region’s priorities for VMT reduction efforts and encourages the CTDOT to consider these priorities as VMT reduction strategies move forward.

This resolution shall become effective as of September 15, 2023.

I do hereby certify that the resolution was adopted by the Naugatuck Valley COG at a public meeting held on June 16, 2023, at which a quorum was present and that the same is a correct and true transcript from the original thereof.



Neil O'Leary, Chairman

September 15, 2023

Date

INTRODUCTION

Issued by Governor Ned Lamont, Executive Order 21-3 directed the CT Department of Transportation (CTDOT) to set a goal to reduce Vehicle Miles Travelled (VMT) and establish strategies to achieve that goal. In support of the Department's plan, the Naugatuck Valley Council of Governments has identified key opportunities and projects aligned with the outlined strategies. As a historically walkable, vibrant region that grew around compact city centers, the Naugatuck River and the region's rail network, the opportunity to support transit-oriented development, improve transit services, and reduce VMT through downtown revitalization and development represents an opportunity to not only meet the targets of EO 21-3 but significantly improve quality of life for residents of the region.

The NVCOG region is particularly well suited to VMT reduction activities. Many of the region's towns and cities were historically compact, walkable mill towns, developed around transportation facilities. Many of these communities continue to be served by those transportation facilities, with the Waterbury Rail Line playing an important role in the transportation and economic development of the towns and cities it serves. Additionally, CTFastrak service into Bristol and express bus services between key locations including Downtown Hartford and the Meriden Transit Center provide connectivity from Waterbury to the larger economy of Central CT. This historic development pattern, matched with investments in brownfield cleanup, gives NVCOG cities and towns an advantage over municipalities that are more built out with low density, particularly around key transportation infrastructure.

The CTDOT's VMT reduction strategy includes several categories of action, including Strategies within CTDOT Control, Strategies within CTDOT Control that will offer some but lesser benefits to VMT reduction, and items outside of the Department's purview. This document will examine actions in all categories by the NVCOG region and municipalities to achieve the goals identified within the target document. Additionally, the NVCOG has noted several policies and laws that hinder efforts to achieve VMT reduction and has suggested changes to these that will benefit the regions and state in this work.

THE IMPORTANCE OF VMT REDUCTION

The CTDOT set a target of reducing VMT by 5% below 2019 levels, the equivalent of 1.23 miles per person per day or more than 2.7 million miles per day. This goal represents a significant change from previous planning practice that assumes VMT will grow steadily over time, both as population grows and as individuals travel farther for work, services, and entertainment.

The belief that VMT and the number of daily vehicles on the roadway system will increase has traditionally dictated infrastructure construction, leading to roadway projects requiring additional capacity, which, data shows, in turn yields additional volume due to the principal of induced demand. Infrastructure improvements take longer and are more expensive because of the need to accommodate huge and potentially unrealized future traffic levels, which in turn translates to worse conditions across the transportation system as basic maintenance and preservation projects are put on hold to pay for significant improvements. Similarly, projected growth of VMT directs funds away from communities and toward intercommunity routes, making it easy to get from place to place but driving a sense of disinvestment within the places.

Several major goals for Connecticut and the Naugatuck Valley planning region require VMT reduction, highlighting the diverse range of impacts that driving has on our communities. These include safety and Vision Zero, air quality, solid waste volume reductions, and social equity.

Air quality and environmental protection were identified as the primary purposes for VMT reduction in both Executive Order 21-3 and in the CTDOT report. According to the 2021 Connecticut Greenhouse Gas Emissions Inventory prepared by the CT Department of Energy and Environmental Protection (DEEP), the transportation sector accounts for a significant plurality of greenhouse gases (GHG) released within the state. While efforts to reduce emissions from individual vehicles will help, efforts like electrification and increased emission standards for internal combustion engines, these items alone will not eliminate the impact of road vehicles on the environment. A comprehensive suite of tools, including VMT reduction strategies, will be required to reach the state's air quality goals.

Reduction in VMT will also advance the region's work toward Vision Zero, that is, the goal of eliminating all fatalities and serious injuries on the region's roads by 2060. Work happening across the state to improve safety and advance Vision Zero methodology will require fewer vehicles on the roads, roads better designed to protect vulnerable users, and an increase in micromobility users to ensure that drivers expect a more complex driving environment.

Finally, decreased VMT will improve driving conditions for those who are driving. Many of the issues the region's roads and highways face are caused by the high volumes they carry. Roadway condition deterioration, especially an issue as the region's infrastructure ages, is driven largely by the stress of vehicles, particularly heavy vehicles. Additionally, congestion is a recurring and significant issue across the region, and reduction in VMT is the best way to reduce the amount of time residents and travelers are delayed without expensive and environmentally damaging highway expansion projects. As the region does not wish to pursue significant highway expansions in the future, VMT reduction is necessary to achieve the performance measure goals identified within the region's Metropolitan Transportation Plans.

FACTORS THAT IMPACT VMT

The report issued by the Department includes factors that, whether within or outside of their control, impact the total number of miles driven. Understanding these factors is critical to setting realistic targets and implementation strategies that will have real impact.

LAND USE PATTERNS

Land use is one of the largest predictors of VMT, with origins and destinations being the most significant factor in trip length. While many factors of land use are out of the direct control of transportation planning agencies, it offers an opportunity for partnership with municipalities and the development community to influence the long-term decisions behind land use.

The following table, taken from the CTDOT report, offers insight into some of the factors in land use planning that impact VMT.

Concentration and Composition of Development	Design	Destination
<ul style="list-style-type: none"> • Residential density • Employment density • Commercial density • Mix of uses • Contiguity of development 	<ul style="list-style-type: none"> • Block size • Lot setbacks • Streetscape amenities • Parking supply and arrangement 	<ul style="list-style-type: none"> • Street connectivity/use of grid network • Distance to central business district • Distance and accessibility to transit stations/stops • Bicycle and pedestrian infrastructure in areas of denser development

The Naugatuck Valley planning region was settled early and developed primarily as compact towns around major manufacturing sites. As the region was impacted by deindustrialization and the highway system in the middle part of the 20th century, municipalities around the region did grow in the suburban development pattern common across the country, moving people away from services and employment and reducing the availability of public transit and active transportation for short trips. Despite this pattern change, however, the Naugatuck Valley is far less suburban in nature than most of the state, and significant opportunities exist to enhance density within the former town/city centers, better utilizing existing infrastructure and reducing the burden on communities to build and maintain new water, sewage, and road infrastructure. The following pages detail some of the work that has been done already or is underway to increase density and vibrancy within the region’s towns and cities, including significant projects in Waterbury, Bristol, and Shelton, the region’s largest municipalities. The work in each of these cities, as well as throughout the region, have significant opportunity to reverse the consistent growth in VMT of previous decades due to their mixed-use nature and proximity to public transportation.

TRANSPORTATION

As important as where people begin and end their journeys are the options available to them as they take those trips. Today in Connecticut, most trips must be taken by car, even those that cover short distances. When good alternatives don’t exist to driving, all trips become car trips, which can add to the total VMT quickly. However, when walking, rolling, using micromobility devices, or taking public transit prove to be convenient and comfortable, travelers may choose alternate modes that yield stronger cities, less traffic congestion within our towns and cities, and VMT reductions.

Within the CTDOT report, the key factors within transportation that can benefit VMT reduction goals include access to public transit, resources for those who wish to share car trips or take public transit but need support to do so, and active transportation. Within this strategy, the NVCOG identifies action items aligned with each factor, aiming to highlight the work the Department has done already, in conjunction with NVCOG municipalities, to provide alternate means of transportation, as well as those areas where they have the most ability to impact traveler mode choice.

Providing meaningful alternatives to automobiles is a key goal of the NVCOG region as identified in [NVision50: the Metropolitan Transportation Plan for the CNVMPO and Naugatuck Valley Planning Region](#)

and within [Imagine 2050: Greater Bridgeport and Valley](#). These goals all closely align with VMT reduction as providing safe and convenient alternatives to driving is one of the most impactful actions with the CTDOT's purview that can impact total statewide VMT.

VMT REDUCTION STRATEGIES

Given the importance of reducing VMT across Connecticut, especially within and through dense urban areas, the NVCOG has compiled the following strategies and recommendations. Implementation of these action items will require collaboration between all levels of government, including both the state and local, and the MPOs of the NVCOG. Implementation will yield the conditions that are likely to reduce VMT across the region while spurring economic revitalization and growth and improving transportation safety.

This section is broken down based on the primary categories of recommendations, including Transit strategies, Active Transportation strategies, an overview of land use changes made by NVCOG municipalities already that can be leveraged for VMT reduction, and policy strategies that the NVCOG recommends to ensure that these strategies can be efficiently and effectively implemented.

TRANSIT STRATEGIES

Of the strategies within the Department's control, transit location and frequency are among the most influential. Connecticut already boasts one of the most well utilized public transit systems in the country, saving millions of miles of driving each year and bringing broad ranging economic and environmental benefits. This section outlines previous studies and previously identified goals to enhance public transit, providing greater mobility to all and reducing the region's reliance on the automobile.

The opening of the Hartford Line of CTrail shows the potential for transit enhancements to impact development patterns and VMT. In the nearly ten years since the Hartford Line has opened, major housing and mixed-use development projects have happened in towns all along the line, giving more options to those wishing to use public transit more regularly as well as meaningfully changing the urban design of the towns that have stations.

THE WATERBURY RAIL LINE

The Waterbury Rail Line, part of the state-owned New Haven Rail Line with service operated by Metro North Railroad, provides a vital connection to towns along the Naugatuck River and offers the best alternative to driving Route 8. Used for both passenger and freight service, the Waterbury Rail Line remains an important economic driver for the region, with Transit Oriented Developments planned in all six towns that it serves.

During COVID, the Waterbury Rail Line retained the largest percentage of riders compared to other rail lines throughout the state, showing how vital this service is to its daily riders. Additionally, the rail line has regained its riders the fastest compared to other passenger rail corridors after COVID. In a further show of the line's importance to the communities it serves, elected officials from throughout the Naugatuck

Valley region have come together on several occasions as a Rail Working Group to advocate for enhanced service and infrastructure.

According to data from the Connecticut Commuter Rail Council, the Waterbury line is operating at 96% of pre-COVID levels to date in 2023, and April 2023 saw a greater than 50% increase over April 2022. These strong ridership numbers show the impact that adding 7 additional trains a day in summer of 2022 had and show the potential of further service increases.

Additionally, all stations along the Waterbury Line are currently under design for significant upgrades, including high level, ADA compliant platforms. The Department is currently in the process of procuring new passenger cars, and electrification is currently being considered, as identified in the state's 2022 Statewide Rail Plan. All these enhancements, both in progress and planned, will further draw new riders to the line and expand its potential to reduce the burden on Route 8.

Action Item: Given the ongoing improvements and investments, as well as the proven value of the Waterbury Line, the region believes increased Waterbury Line service will only serve to attract more discretionary riders and reduce miles driven between Bridgeport and Waterbury along Route 8. The region will continue advocating for 30-minute headways during daytime travel hours and 24-hour service along the line. This increase will ensure that all those using the Waterbury Lines are able to catch a convenient train and that transfers to the New Haven line are feasible.

Action Item: Construction of a transfer platform at the Devon Wye in Milford will allow for easier transfer to the New Haven Line in the direction of New Haven, an increasingly important center for jobs, healthcare services, and entertainment for residents of the Naugatuck Valley. By eliminating the need to travel first to Bridgeport and then transfer to an eastbound train, the trip time can be reduced by at least 20 minutes. This will also allow more trains to run on the Waterbury Line without contributing to congestion along the New Haven Line.

BUS RAPID TRANSIT

Bus Rapid Transit (BRT) provides many of the benefits of passenger rail without the restrictions of operating on a fixed track. Because BRT buses can extend beyond the dedicated guideway onto city streets, BRT provides the option for high frequency lines to break apart to access more local service destinations.

Unlike local bus services, BRT systems provide features similar to light rail, including stations with level boarding platforms, off-board fare collections, lanes not shared with other traffic, prioritized signals where needed, and convenience amenities like real-time arrival information and Wi-Fi. These features serve not only to make BRT a more efficient and comfortable experience for riders, but to ensure that transit vehicles are able to run frequent service with limited interference from outside factors.

CTDOT operates the CT Fastrak BRT system between Hartford and New Britain, and a federal RAISE grant was awarded to the CTDOT for implementation of a BRT type system in New Haven. CT Fastrak, a very high-quality implementation of BRT, has spurred significant development in its vicinity, particularly in Downtown New Britain. This development, focused on those that can utilize the transit system, has helped to provide much needed additional housing, revitalize New Britain's Downtown, and ensure that those that would like to use transit have housing near existing infrastructure to choose from.

Action Item: Per the Route 8 and Waterbury Line Corridor Alternative Modes Assessment, develop and construct a BRT system from the Derby-Shelton Train Station in Derby south to Bridgeport. This system will connect the existing transit hubs in Derby and Bridgeport to the many office and retail jobs and services along the Bridgeport Avenue corridor in Shelton and the Trumbull Corporate Park.

Action Item: Investigate the feasibility and economic impact of implementing BRT systems to enhance existing express and intercity bus routes between Waterbury and Meriden, New Britain, Danbury, and Hartford, as well as between lower valley communities like Derby to New Haven.

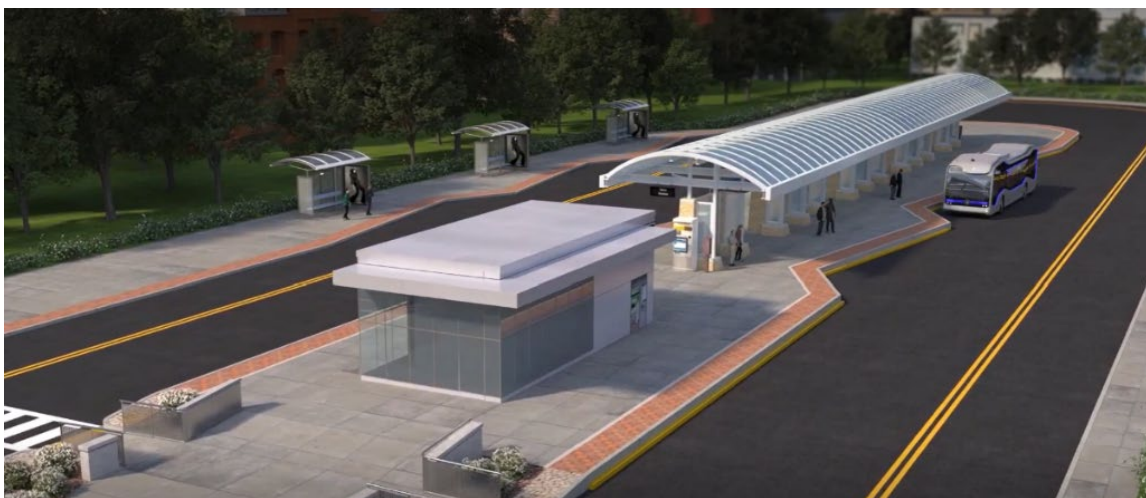


Figure 1 Rendering of a proposed Route 8 BRT Station

LOCAL BUS SERVICES

Local buses play an important role connecting neighborhoods to Downtown and the intercity transit network. The Naugatuck Valley planning region is covered by several fixed-route bus service districts operated by divisions of CTtransit including Waterbury, Bristol-New Britain, and New Haven, and service operated by the Greater Bridgeport Transit. These fixed-route operators all cover relatively distinctive territories, with some overlapping in Waterbury and Derby.

While local buses are critical for riders who do not have access to a vehicle, they also offer some of the best opportunities to attract current drivers to choose transit rather than driving. As local buses often provide the closest connection to the transit network, improving frequency and route alignments offers the potential to reach a large audience of potential riders.

Action Item: Implement the proposals of the Waterbury Area Transit Study (WATS), including route realignments and the addition of several new routes. These improvements will better serve existing riders while also making the system more attractive to discretionary riders, particularly those traveling to Downtown Waterbury services and employment.

Action Item: Implement the proposals of the Capital Region Council of Government’s (CRCOG) Bristol-New Britain Division Comprehensive Service Analysis, offering new and realigned routes as well as similar benefits to existing and potential riders in Bristol as the WATS recommendations would offer to those in Waterbury.

Action Item: Construct a regional transit center at the Waterbury Train Station, providing shorter transfers between routes, a single meeting point for the various transit services that enter Waterbury, and an opportunity for customer service staff to better accommodate rider questions and concerns. Implementation of this plan would further require establishing a shuttle service between the transit center and the Waterbury Green, ensuring that riders would still have easy access to Downtown.

Action Item: Increase frequency of the CTtransit New Haven Division Routes 229 and 255, improving mobility between Waterbury, the Lower Naugatuck Valley, and New Haven. As New Haven increasingly becomes a destination for employment and services, providing frequent connections can ensure that discretionary riders are comfortable committing to transit for their trip.



Figure 2 CTtransit Waterbury Division buses stop on East Main Street, Waterbury

ACTIVE TRANSPORTATION STRATEGIES

Just as transit provides the opportunity for reduction of VMT generated by longer trips, active transportation can have significant impacts on shorter trips. Nationwide, the majority of trips are taken within five miles of home, a distance that can be easily covered through active transportation and micromobility. Given the potential of converting these smaller trips to alternate modes, investments in active transportation infrastructure can yield significant results in VMT reduction.

MULTI-USE TRAILS

The backbone of a well-connected active transportation network is a series of dedicated multi-use trails. In the Naugatuck Valley, the Naugatuck River Greenway has the potential to serve as the spine of that network, with connecting trails acting as ribs out into communities not directly on the river. By providing an interconnected and comprehensive network, those looking to travel longer distances using active transportation and micromobility devices will have safe and convenient infrastructure similar to the way the highway network functions for drivers.

In addition to the transportation benefits, the connected multi-use trail network provides opportunities for recreation, connection to natural resources, and a gathering place for residents and visitors. The trails also offer the opportunity for economic development, as seen by the growth along the Farmington Canal Heritage Trail in Cheshire and surrounding communities. These projects can act as a centerpiece in a town's tourism strategy, bringing in visitors and outside money.

In Connecticut, the construction of multi-use trails has traditionally not been handled by the DOT. Towns and regions have led the planning and construction efforts, yielding small segments of trail that get connected over time.

Action Item: Utilizing the [Naugatuck River Greenway Steering Committee's Regional Priorities](#) document, construct the remaining segments of the greenway, connecting the full 44-mile route from Torrington to Derby. The priority report identifies those segments that will provide the most important connections, which should be constructed first, with lower priority sections being filled in as quickly as possible.

Action Item: Complete trail sections already planned to extend the Middlebury Greenway, Route 67 Main Street side path in Oxford, Steele Brook Greenway, Shelton Riverwalk, connection between the Farmington Canal Heritage Greenway and the Airline Trail, and the Pequabuck River Trail in Bristol.

Action Item: Complete planning and concept development for remaining gaps in the regional trail network and develop plans for implementation.



Figure 3 The Naugatuck River Greenway in Waterbury

MOBILITY LANES

In cities around the world, bicycles are used to supplement the public transit system as well as to cover short distance trips. The Naugatuck Valley, though gifted with beautiful but difficult terrain for cycling, is poised to see a cycling revival, especially as e-assist bikes can help overcome some of the elevation challenges. Similarly, micromobility devices such as e-scooters and skateboards, as well as mobility aids including wheelchairs and power scooters can be utilized to reduce the barriers to public transit and to complete trips in higher density areas, especially for those who are unable to drive. As such, cities and towns throughout the region must have the infrastructure to support users of these devices, including a well-connected series of on and next-to road mobility lanes, or bike lanes, that provide safe space for all road users.

Especially in the region's Downtown cores and denser residential neighborhoods, physically separated mobility lanes will allow those who are interested in biking but hesitant to utilize alternate means for short trips because of safety concerns. As so many trips are within a couple of miles, a shift of even a small number of these trips can have significant impacts on VMT. A larger shift is one of the best means to bring greater VMT reductions while simultaneously bringing health and additional environmental benefits.

Action Item: CTDOT must re-evaluate the inclusion of physically separated mobility lanes on state roads that pass through densely developed areas, particularly city centers and downtown areas. Requiring municipalities to provide bike lanes on state roads is a burden that many communities cannot overcome, and state roads often provide the most critical connectivity links.

Action Item: Provide resources and funding programs to install mobility lanes throughout communities, developing a truly connected and safe network for those preferring to use these devices.

Action Item: Include connections via mobility lanes from dense residential areas/downtowns to major commercial corridors, particularly those located on wide roads with fast speeds. Despite the traffic on many of these roads, they are in close proximity to their customers, and providing alternative means of transportation may help to reduce the number of cars travelling to these stores.

Action Item: While mobility lanes provide safe and comfortable travel experiences, it can be difficult to bring a bicycle, micromobility device, or mobility aid to a location where there is no safe place to store it. As such, major projects that include parking should also include enough bicycle parking. Similarly, urban streets should be built to include bike racks that can be used by all travelers. Finally, rail stations and major bus stops should include high quality storage, such as bike lockers, to encourage riders to use more active transportation means for the last mile of their trip.

SIDEWALKS

All travelers must walk/roll at some point during their trip, and for many that includes utilizing sidewalks within the public right of way. Sidewalks represent one of the simplest pieces of transportation infrastructure that can impact VMT, perhaps significantly within urban areas.

There are two major issues with the sidewalk network that, if addressed, can drastically improve the pedestrian experience, and encourage more people to walk/roll for short trips rather than drive. Filling sidewalk gaps can extend the ability of travelers to walk/roll to a much greater range of destinations. Similarly, upgrading sidewalk infrastructure to meet ADA requirements not only opens the option to those reliant on mobility aids but makes the sidewalk a more comfortable option for all users.

Action Item: Fill sidewalk gaps, starting with those closest to downtown areas and those surrounding dense residential development, working to complete a comprehensive sidewalk network in all Naugatuck Valley Communities.

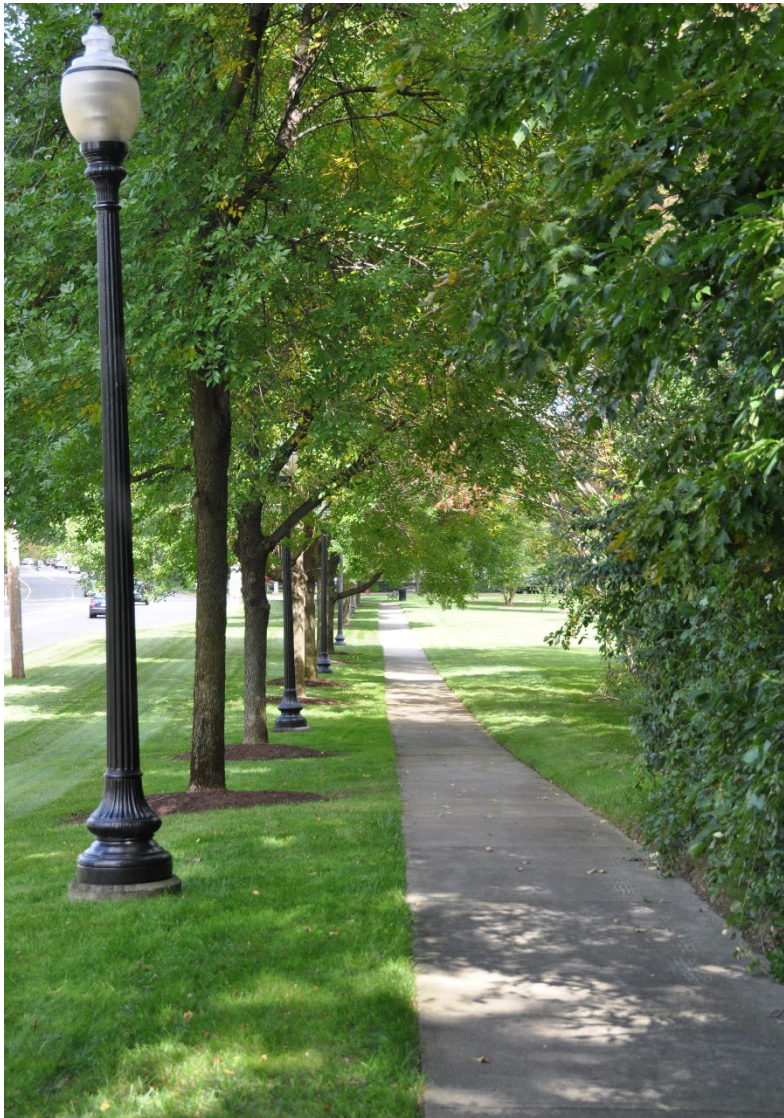


Figure 4 Sidewalk along Main Street South, Southbury

Action Item: Upgrade all existing sidewalks to, where possible, meet or exceed ADA and PROWAG standards. All new sidewalks and roadway projects that impact sidewalks should also be built to these standards. When sidewalks are upgraded or replaced, context sensitive design should be considered, such as current and expected future utilization rates, yielding wider sidewalks in urban areas.

Action Item: Crosswalks throughout the region are in need of upgrades to ensure pedestrian visibility and safety. Crosswalks will be analyzed for their condition and quality and upgraded as necessary.

COMPLETE STREETS

Connecticut General Statutes 13A-153F requires that all users be regularly considered during the design and construction of roadway projects, which has resulted in the CTDOT's Complete Streets policy. A complete street is defined as one that considers and provides safe infrastructure for all types of users, not just motorists. Complete streets offer significant advantages, particularly in more densely developed areas in and around our town and city centers.

Not only should complete streets accommodate all users, but they should include urban design elements that are beneficial for those around them, including low-impact development elements, street furniture, pedestrian scale lighting, and wayfinding, all of which make for a more pleasant walking/rolling and biking experience. Within the NVCOG region, implementation of complete streets projects on the main downtown streets can have notable impacts not only on VMT but on economic development and civic pride.

Action Item: Many downtown streets are CTDOT owned, with a comprehensive list of NVCOG municipalities and the main state routes that should be considered for complete streets projects below:



- Ansonia (Route 115)
- Beacon Falls (Routes 42 and 852)
- Bethlehem (Routes 61 & 132)
- Bristol (US Route 6 & Route 72)
- Cheshire (Route 68, 70 & 10)
- Derby (Route 34 & 115)
- Middlebury (Route 63 & 64)
- Naugatuck (Route 63 & 68)
- Oxford (Route 67)
- Plymouth (US Route 6)
- Prospect (Route 68 & 69)
- Seymour (Routes 67, 115 & 313)
- Shelton (Routes 110, 108 & 714)
- Southbury (US Route 6)
- Thomaston (Route 254 & 807)
- Waterbury (Routes 69 & 847)
- Watertown (Route 63 & US Route 6)
- Wolcott (Routes 69 & 322)
- Woodbury (US Route 6)

Figure 5 Construction continues along Main Street (Route 34) in Derby. The finished project will include permeable pavers within the parking lane, ADA compliant sidewalks, and pedestrian amenities.

LAND USE

As identified in the CTDOT's VMT reduction strategy, transportation changes alone cannot have the impact on VMT that significant land use changes can. The distance between homes, services, and employment is the primary determinant of the distance that Connecticut residents and visitors drive, and locating these uses closer together will automatically reduce VMT without significant mode shift. Co-locating uses also encourages active transportation and non-motor vehicle modes, further reducing the environmental impact of transportation and total VMT.

While land use is largely determined by municipalities in Connecticut, the Department does have the potential to leverage those towns and cities that have already made commitments to density and transit-oriented development to utilize transit service enhancements to impact VMT. While increased density within the Naugatuck Valley will not alone solve the transportation or housing issues the state is facing, especially in Southwestern Connecticut, taking advantage of existing infrastructure where possible can yield much quicker results than needing to start new services or push for significant local land use changes in hesitant communities.

Within the Naugatuck Valley, communities with access to high frequency transit, particularly those along the Waterbury Rail Line, have made significant changes to zoning to allow higher density, mixed-use developments aimed at transit users. This provides a prime opportunity for the Department to impact land use by instituting more frequent service and shorter headways on Waterbury Line trains. This enhancement will spur new development in the areas adjacent to existing stations. Similarly, an expansion of CTfastrak buses that travel beyond New Britain and into the region can similarly spur development in Bristol, Cheshire, and Waterbury, the communities currently served by CT Fastrak routes.

Action Item: Increase Waterbury Rail Line service to better serve Naugatuck Valley communities. As these towns and cities have already modified their zoning regulations to better accommodate TOD projects, providing frequent service will yield additional density surrounding train stations and, as a result, provide VMT-reducing alternatives for residents of these locations.

Action Item: Increase frequency and routing of CT Fastrak buses to Bristol. As Downtown Bristol has updated zoning regulations to allow for higher density and redevelopment, providing frequent and convenient connections to job centers outside of the City, particularly in Hartford, can reduce dependence on driving and, by encouraging compact development within Bristol, reduce VMT of residents completing errands and local trips. Where possible, the dedicated guideway of CT Fastrak should be extended to increase travel speeds and reduce conflicts with car traffic as Fastrak buses travel from New Britain to Bristol.

Action Item: Discourage free on-street parking throughout the region, instead utilizing street space for active transportation users, streetscape elements, and economic activity such as curbside dining. Where street parking is provided, the cost should be equivalent to the economic productivity of the space if used in another fashion.

For more information about the zoning changes in Naugatuck Valley communities designed to support density and transit-oriented development, see appendix B.



Figure 6 Transit Oriented Development along the Shelton Riverwalk

POLICIES

To best achieve some of the outlined VMT reduction strategies, several CTDOT policies should be reviewed and modified. These policies, outlined below, are often a hinderance to the advancement of active transportation and multimodal projects throughout the state, and updates to these policies should allow the CTDOT, COGs, and municipalities to work more closely together to achieve these goals.

Policy Change Recommendation: Review the CTDOT's implementation of the USDOT's Transportation Alternatives set aside (TA Program). Currently, the CTDOT requires municipal sponsors of projects funded under the TA program to provide 100% of the non-federal share. Despite this, the CTDOT still performs rigorous reviews of applications that can delay projects and increase costs for municipalities. Given the importance of TA projects to advancing VMT reduction goals, the TA program should be allocated at an 80-10-10 (federal, state, local) funding ratio like most other federal programs.

Policy Change Recommendation: The CTDOT's current policy does not include mobility lanes and sidewalks in state road projects unless a municipality is willing to contribute the non-federal cost of the enhancement. This means that many of the most heavily traveled roads in Connecticut towns and cities do not have infrastructure to support multi-modal users. A policy change to include all users in state road projects would not only help to fill gaps in networks but provide safe spaces for non-motorized users along some of the most critical connections in the state.

Policy Change Recommendation: The Bike/Ped Advisory Board brings expertise and important advocates together to advocate on behalf of all users in infrastructure projects. The BPAB should be consulted earlier and more frequently on major state projects, in addition to collaboration with municipalities, MPOs, and other stakeholders.

APPENDIX A: KEY PROJECTS IDENTIFIED IN THE REGION'S METROPOLITAN TRANSPORTATION PLANS FOCUSED ON VMT REDUCTION

The following table shows projects currently identified in the CNVMPO and GBVMPO Metropolitan Transportation Plans for NVCOG member municipalities. Within these tables, Funding Estimate Year shows not the expected construction year but the year to which estimated cost has calculated inflation. For those projects that have a proposed funding source, a table at the end of this appendix includes the full program name. Similarly, projects that have gone through air quality modeling with the CTDOT include the assigned air quality code, which is further defined in the following table. This list does not include all the projects that are currently in consideration within the NVCOG that may impact VMT but a list of those identified within the region's MTP or identified as a high priority since its adoption. Only unfunded projects are listed.

ROUTE	LOCATION	PROJECT	FUNDING ESTIMATE YEAR	Estimated Cost	PROPOSED FUNDING SOURCE	AQ
Pequabuck River Trail	Bristol	Construct New Trail	2050	\$8,500,000	TAP	X6
Naugatuck River Greenway	Watertown	Construct NRG between Frost Bridge Road and Branch Brook	2030	\$2,474,057	TAP	X6
Naugatuck River Greenway	Watertown	Construct NRG between Frost Bridge Road to Waterbury Town Line	2050	\$2,607,750	TAP	X6
Naugatuck River Greenway	Thomaston	Construct NRG between Old Waterbury to Branch Brook	2030	\$669,750	TAP	X6
Naugatuck River Greenway	Thomaston	Construct NRG between Old Waterbury to Vista Park	2040	\$8,509,131	TAP	X6
Naugatuck River Greenway	Beacon Falls	Construct NRG between Route 42 and Toby's Pond	2030	\$3,622,850		
Naugatuck River Greenway	Seymour	Construct NRG between Toby's Pond and Bank Street	2030	\$3,410,000		
Naugatuck River Greenway	Waterbury	Construct NRG between West Main Street and the Waterbury Industrial Commons	2050	\$20,688,150	TAP	X6
Naugatuck River Greenway	Waterbury	Construct spur off the NRG between along the Mad River to 313 Mill Street	2030	\$2,350,000		
Steele Brook Trail	Watertown	Construct trail along Steele Brook to NRG	2050	\$6,100,000	TAP	X6
Maple Street	Naugatuck	Cyclist Improvements	2030	\$2,679,000	LOTICIP	X6
Route 63	Middlebury	Extend Greenway between Woodside Avenue to Country Club Road	2030	\$7,367,250	TAP	X6
Farmington Canal Heritage Trail	Cheshire	Facilitate connection to the Airline Trail	2050	\$2,607,750	TAP	X6
Farmington Canal Heritage Trail	Cheshire	Improve Trail Crossing Jarvis Street	2030	\$401,850	TAP	X6
Rubber Avenue	Naugatuck	Install Roundabout at intersection of Route 63 and Cherry Street	2030	\$5,875,000	LOTICIP	X7
Route 63	Watertown	Main Street Pedestrian Improvements within Downtown	2030	\$2,009,250	CC	X6
Route 6	Woodbury	Pedestrian Enhancements from Southbury Townline to Flanders Road	2040	\$2,700,000	STBG	X6
Route 64	Middlebury	Pedestrian enhancements between Interchange 17 to Chase Road	2030	\$1,175,000	TAP	X6
Route 807	Thomaston	Pedestrian Enhancements within downtown	2040	\$5,771,250	STBG	X6
Bunker Hill Road	Watertown	Pedestrian Safety Improvements between Route 63 and Route 73	2030	\$669,750	CC	X6
Route 63	Naugatuck	Roundabout Construction at Church Street and Millville Avenue	2050	\$5,814,000	STBG	X7
Walnut Street	Waterbury	Safety Improvements	2030	\$300,800	LRARP	X7

Middlebury Road	Watertown	Safety Improvements	2040	\$2,308,500	STBG	X6
Lake Winnemaug Road	Watertown	Safety Improvements at intersection with Sperry Road	2040	\$1,154,250	STBG	X7
South Main Street	Plymouth	Safety Improvements between Main Street and East Washington Road	2050	\$5,814,000	STBG	X7
Route 67	Oxford	Side path from Seymour Town Line to Bridle Trail	2040	\$19,387,500	CC, LOTCIP, TAP	X6
Route 68	Prospect	Sidewalk and Intersection Improvements at Old Schoolhouse Rd and Straitsville Rd	2030	\$940,000	STBG	X7
Route 61	Bethlehem	Sidewalk between Town Hall to Jackson Lane	2030	\$401,850	TAP	X6
Lakewood Road	Waterbury	Sidewalk Construction between North Main Street to Route 69	2030	\$2,889,000	LOTICIP	X6
Old Field Road	Southbury	Sidewalk Construction from Main Street to Heritage Road	2030	\$1,339,500	TAP	X6
Route 6	Plymouth	Sidewalk Improvements	2040	\$1,539,000	CC	X6
Jarvis Street	Cheshire	Sidewalk Installation	2030	\$724,000	STBG, LOTCIP, TAP	X6
Route 229	Bristol	Spot Improvements	2040	\$4,904,415	STBG; SS4A	X7
Route 801	Waterbury	Spot Improvements	2030	\$8,001,750	STBG	X6
Route 73	Watertown	Streetscape Improvements from Waterbury Townline to Route 63	2030	\$401,850	STBG	X6
Peck Lane	Cheshire	Traffic Calming	2040	\$230,850	STBG, LOTCIP	X6
North Main Street	Waterbury	Traffic calming and pedestrian improvements between West Main Street and Hill Street	2030	\$2,009,250	STBG	X7
Trail	Oxford	Trail Construction between Larkin Bridle Trail to Main Street	2030	\$2,009,250	TAP	X6
Naugatuck River Greenway	Beacon Falls	Trail Extension along North Main Street between Depot Street and Church Street	2030	\$2,330,025	TAP	X6
Naugatuck River Greenway	Naugatuck	Trail Extension at Breen Fields near Maple Street to Beacon Falls Town Line	2030	\$10,180,200	TAP	X6
Naugatuck River Greenway	Naugatuck	Trail Extension between Maple Street and Breen Fields	2030	\$2,679,000	LOTICIP	X6
Naugatuck River Greenway	Beacon Falls	Trail Extension between Route 42 and Riverbend Park	2030	\$4,420,350	TAP	X6
Naugatuck River Greenway	Beacon Falls	Trail Extension Church Street and Naugatuck Town Line	2040	\$4,223,016	TAP	X6
Naugatuck River Greenway	Naugatuck	Trail Extension from Pulaski Walk to Waterbury Town Line	2040	\$4,617,000	TAP	X6
Trail	Bristol	Trail Routing Study	2030	\$587,500	State	X6
Route 229	Bristol	Trail/Sidewalk	2040	\$16,200,000	TAP	X6
CTtransit Bristol/New Britian	Bristol	Additional CTtransit route		\$3,600,000	State	
CTtransit Bristol	Various	Realign Service		\$24,860,000	State	
CTtransit Waterbury	Various	Real time information signs		\$6,298,500		
Waterbury Branch Line	Various	Expand service to provide 30-minute headways		\$97,983,000	State	
Waterbury Branch Line	Waterbury	Storage yard in Waterbury for WBL		\$78,061,500	State	
CTtransit Waterbury	Waterbury	Additional route along Lakewood Road		\$5,107,000	State	
CTtransit Waterbury	Waterbury	Infrastructure improvements for electric vehicles		\$9,255,000		
Naugatuck River Greenway	Ansonia	Ansonia Riverwalk / NRG: Northern Extension to Seymour	2040	\$13,480,000	TAP	X6
East Main Street	Ansonia	East Main Street Pedestrian Improvement Project	2030	\$1,560,000	CC	X6

Division Street	Ansonia	Intersection and Ped Improvements at Pershing Drive Intersection	2030	\$625,000		X7
Main Street	Ansonia	Road Diet	2030	\$570,000	STBG	PD
State Street	Ansonia	State Street Complete Streets Installation	2030	\$2,589,000	LOTICIP	X6
Church Street	Seymour	Construct Sidewalks along Church Street from the Seymour Library to Route 67	2040	\$171,000	CC	X6
Naugatuck River Greenway	Seymour	Construct Extension from Beacon Falls to Downtown Seymour	2040	\$3,876,000	TA	X6
Route 67	Seymour	Spot improvements including sidewalk gap closing	2030	\$741,000		X6
Route 110	Shelton	Downtown Shelton Road Diet	2040	\$1,368,000		X6
Route 108	Shelton	Complete and repair sidewalks from Wooster Street to Shelton Lakes Recreation Path Parking Lot	2040	\$5,970,000		X6
Shelton Riverwalk	Shelton	Extend Riverwalk along Canal Street	2040	\$4,000,000	TA	X6

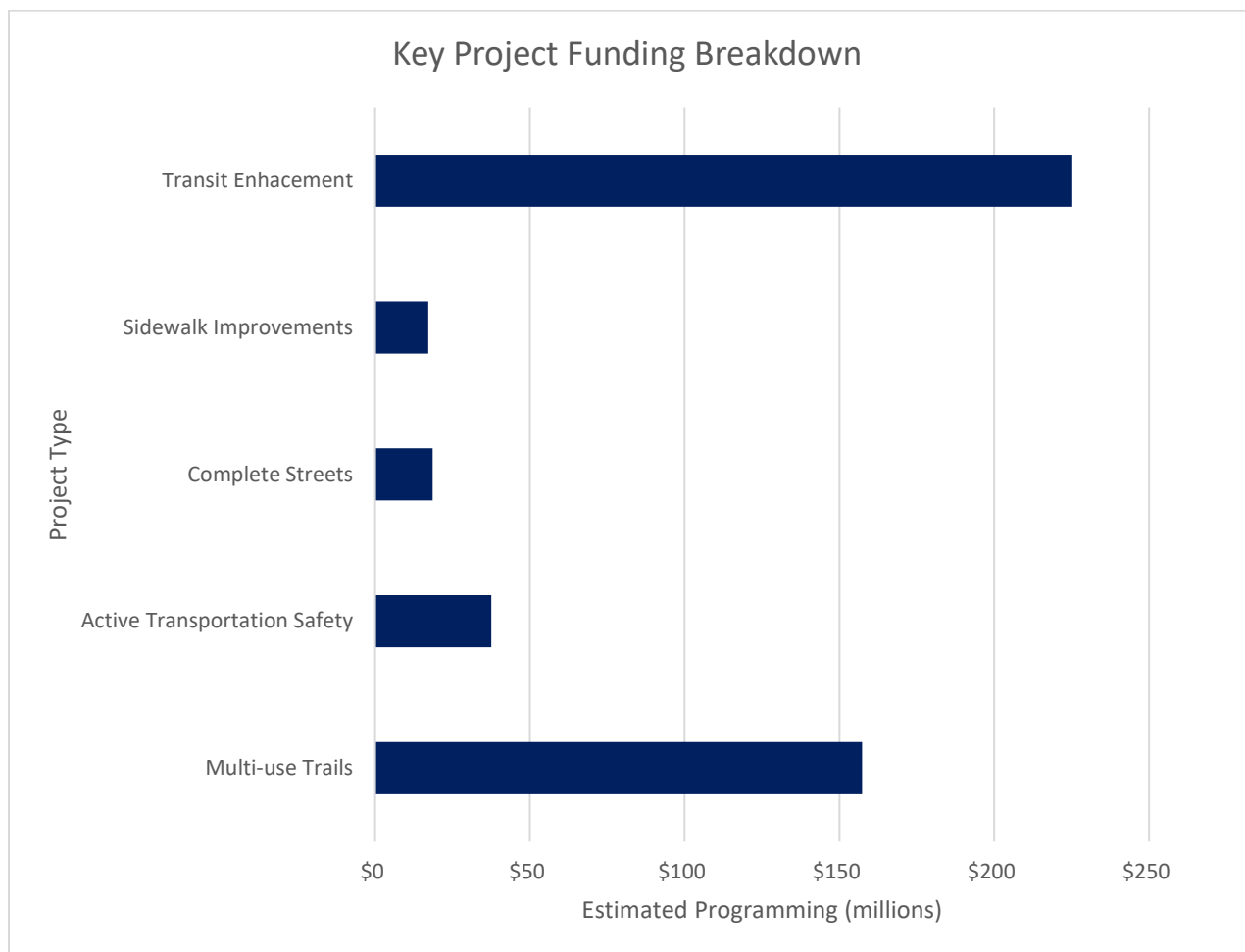


Figure 7 Estimated programmed funds in key project table.

Zoning Districts and Uses

Some of the broad uses seen throughout the station areas include retail, restaurants, offices, and single and multi-family housing. A few municipalities even have special zoning districts near their rail stations that are specifically supportive of Transit Oriented Development (TOD). For example, all commercial uses are permitted by right in Naugatuck’s Special Development District (SDD). Maximizing mass transit and multi-modal opportunities, advancing Naugatuck’s affordable/workforce housing inventory, reducing traffic generation in contrast to that which occurs when the uses are separated, and enhancing the quality and proximity of facilities to employees and residents are some of the outlined purposes of the SDD. The City of Derby also has a similar TOD-supportive district surrounding the rail station called the Center Design Development District. While municipalities like Naugatuck and Derby focus on progressing their TOD-supportive land use in new ways, other cities like Ansonia focus on preserving their historical aesthetic while still maintaining ways to support TOD. In addition to their industrial history, many municipalities in the NVCOG region have special geographical contexts (Rt. 8, Naugatuck River) that should be acknowledged. Both geographical and historical components play into the region’s current uses and formation of our central business districts. Although it is generally easy for TOD-supportive uses to be implemented throughout the station areas, there is always room for growth, improvement, and better support. While the geographical and historical contexts of the region pose minor obstacles to TOD-supportive land use, the NVCOG region generally has strong land use regulations in place to support TOD and reduce VMT (Vehicle Miles Traveled).

Level of Permitting

Generally, it is easy for TOD-supportive uses to be implemented in districts throughout the station areas in the region. The generally low level of permitting required, if any, for TOD-supportive uses limits the number of obstacles to achieving mixed-use and pedestrian-friendly development. Two-family and multi-family dwellings, retail businesses, and offices seldom require a special permit in many of the zones surrounding rail stations in the region. Additionally, the generally higher level of permitting required for industrial uses around the rail stations deters heavy industrial development. An example of this is Derby’s Center Design Development District where any light industrial uses, even if they “do not emit noticeable or objectionable noise, light, glare, vibration, or odors; do not utilize or produce toxic, hazardous, or explosive materials; and are conducted primarily indoors,” are considered special exception uses.

Summary Table of Uses

The following table outlines examples of uses and the level of permitting required. It is not a comprehensive list of all uses and their respective required level of permitting. This summary table of uses is intended to illuminate the ways in which the NVCOG region already allows for TOD-supportive uses.

	Residential	Commercial	Industrial
Ansonia	One-family, two-family, and multi-family dwellings are permitted so long as there is a Site Plan Application.	Other than places of religious worship and medical marijuana dispensary facilities, commercial uses are either permitted or require Site Plan Applications.	Some industrial uses are permitted by right, but most require Site Plan Applications.
Beacon Falls	Residential Districts R-1 and R3 allow most all types of housing except for the “conversion of dwellings so as to contain two (2) dwelling units”.	Indoor restaurants, theaters, bowling alleys, retail stores, and hotels are all permitted. The only commercial uses that require special permitting in BD No.1 are adult-oriented establishments and mobile home parks.	The railway itself sits in an Industrial District and is bordered by another Industrial District. About half industrial uses are permitted by right while the other half are special exception uses.
Bristol	Single family dwellings and home-offices are permitted. Special permits are needed for group housing, elderly housing, and mobile home parks.	The zones around the station permit many commercial uses without the need for a special permit or site plan review including restaurants, bars, grocery stores, and laundromats.	There are few industrial uses associated with the two zones surrounding the Bristol railway station. Very few from that small number are uses that could hinder TOD.
Derby/Shelton	Single and two-family dwellings, and parks and playgrounds are permitted. The CDD (Center Design Development) district has a higher number of allowed residential uses, including housing for the elderly.	Restaurants, retail businesses, theaters, banks, and offices are all permitted. The only commercial uses in the B-2D that require permits are gasoline service stations and automatic car washes.	Most of the permitted industrial uses in I-1 involve only moderate “disruption” to pedestrians accessing the rail station. Warehouses and moderate intensity, non-nuisance manufacturing uses are examples.
Naugatuck	Dwellings containing 2 dwelling units, and a professional/business office in a dwelling unit are permitted. Dwellings containing 3+ dwelling units require a special permit.	There is seldom a commercial use listed in the B-1, B-2, RA-1, I-1, and I-2 districts that is permitted by right. However, in the Special Development District, all commercial uses are permitted by right.	There are very few permitted industrial uses across the six different zoning districts. The only industrial uses listed in the SDD are permitted, but they are likely to support TOD.

Seymour	Most of Seymour’s residential uses are currently permitted in their designated districts but won’t be for future uses.	Most Seymour’s commercial uses are either completely permitted by right or permitted by right with minor caveats.	Many of the manufacturing uses in these districts are permitted so long as they adhere to the various caveats outlined in the Zoning Regulations.
Waterbury	The CBD permits multi-family dwellings and high rise residential and/or office buildings. The same is true for the CA District (with the requirement of special conditions).	Very few commercial uses are policed by special conditions. Parking garages, car washes, and automobile service stations are all uses that require special conditions.	Very few industrial uses are listed/allowed in the CA and the CBD. About half of the industrial uses listed are permitted, and the others are permitted under special conditions.

Summary Table of Uses SPECIFIC EXAMPLES

	Residential	Commercial	Industrial
Ansonia	One-family, two-family, multi-family dwellings require site plan approval	Antique stores, hair salons, gyms, membership clubs all permitted by right	Trucking and freight terminals, scrap metal processors, and public utility structures all require site plan approval
Beacon Falls	Dwellings, professional office in a dwelling unit, rentals inside a dwelling are all permitted by right	Corporate offices, banks, hotels, bowling alleys, retail stores, and indoor restaurants are all permitted by right	Motor freight establishments and trucking terminals, outdoor manufacturing and assembly, and waste disposal areas are all special exception uses
Bristol	Dwelling units, live-work units, and single-family dwellings are all permitted by right	Grocery stores, pharmacies, night clubs, restaurants, libraries, museums, and places of worship are all permitted by right	Public utility buildings and facilities require a special permit
Derby/Shelton	Multifamily housing, housing for the elderly, and mixed-use	Retail businesses, restaurants, hotels, theaters,	Public utility buildings, trucking terminals, and

	buildings are all permitted by right	laundromats, cannabis establishments, and banks are all permitted by right. Gas stations and car washes are special exception uses	light industrial uses are all special exception uses
Naugatuck	Single-family dwellings, dwellings containing two units, and professional offices within dwelling units are all permitted by right	All commercial uses are permitted by right in the Special Development District including retail, offices, art galleries, grocery stores, and entertainment venues	Transmission and communication towers, freight and materials trucking and terminals, and bulk storage of cement and petroleum products all require a special permit
Seymour	Existing single-family dwellings, two-family dwellings, and three & four-family dwellings are permitted but are not to be newly built	Recreation centers, bars, restaurants, convenience stores, and gyms are all allowed by administrative approval	Chemicals and allied products manufacturing, primary metals manufacturing, and mining and processing of Earthen materials all have specific caveats to allowance
Waterbury	Multiple family dwellings and high-rise residential and/or office buildings are permitted by right	Florists, grocery stores, hotels, retail stores, movie theaters, and museums are all permitted by right	Warehousing and storage, communication transmission buildings or towers, and wireless telecommunications facilities are all subject to district regulations and special conditions.