# Chapter 6: Transportation and Mobility

## Introduction

Orange benefits from a well-connected transportation network that supports regional mobility and economic growth. The town's proximity to major highways and availability of public transportation positions it as an attractive location for businesses and residents seeking easy access to regional markets and employment hubs.

A safe and efficient transportation system that accommodates the needs of all users is essential to Orange's ability to continue to grow and prosper. Strategies to enhance mobility and circulation within Orange and to the region are also critical to improve the Town's economic viability and local quality of life.

Informed by stakeholder engagement, analysis of data, and a consideration of best practices, this chapter aims to address current circulation and transportation challenges while anticipating future needs. Whether it is optimizing the roadway network, encouraging public transit and walkability, or enhancing connectivity to the region, this chapter sets forth a vision that aligns with broader POCD objectives, ensuring a well-connected and more sustainable Town.

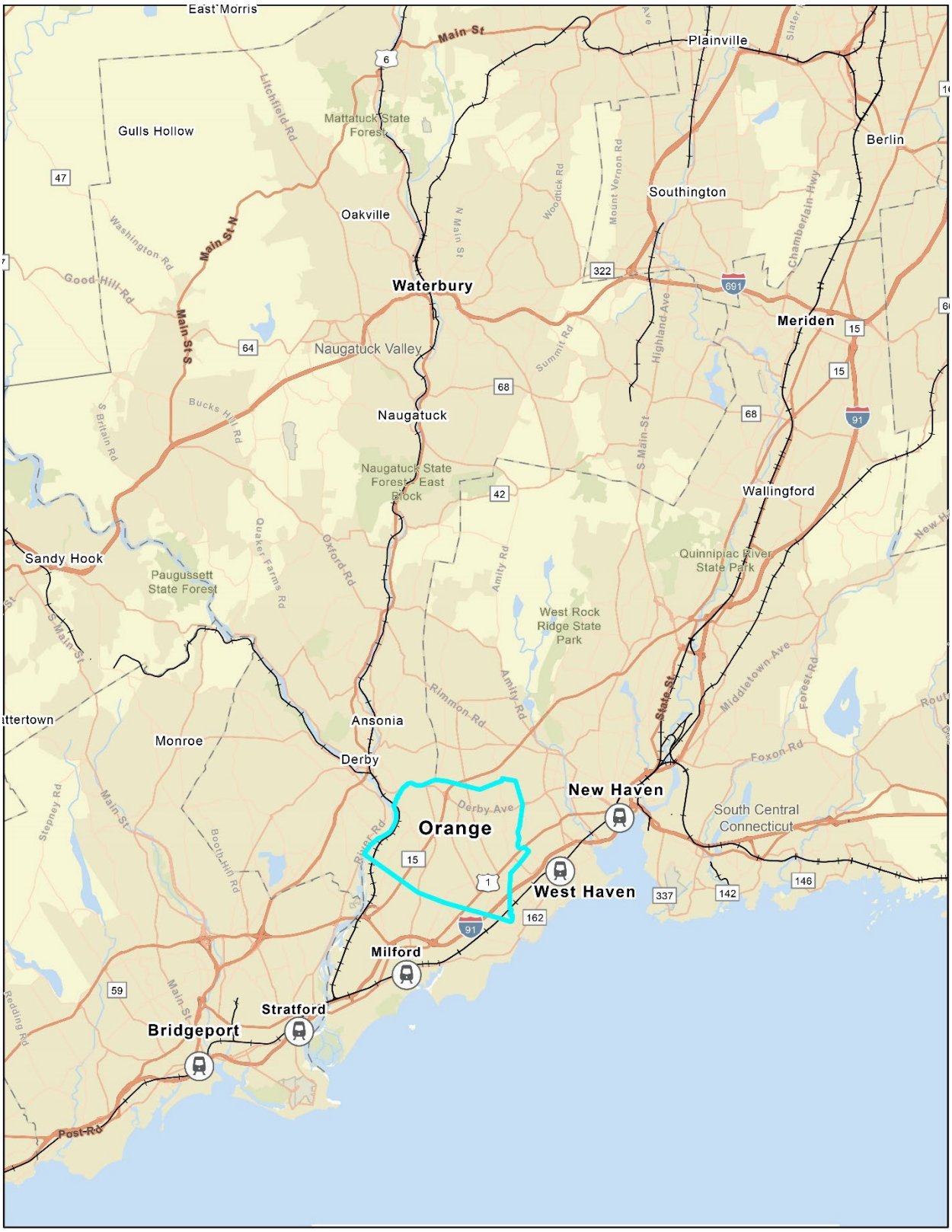
## Regional Connectivity

Orange is well-connected to the region through a network of transportation systems that facilitate easy access to neighboring towns and major cities (Refer to Figure 1). The Town is located along the Boston Post Road (U.S. Route 1), providing a direct route to New Haven and Milford, while Interstate 95 (I-95) and the nearby Merritt Parkway (Route 15) offer efficient travel options for commuters heading south toward Bridgeport, Stamford, and New York, and north to Hartford.

Additionally, Orange benefits from its proximity to the Metro-North Railroad stations in Milford and West Haven, allowing residents convenient access to New York City and other destinations along the New Haven Line. Public bus services operated by CTtransit also connect Orange to surrounding communities. These transportation networks make Orange a well-integrated part of the region, supporting both local travel and long-distance commuting.

***Figure 1: Regional Connectivity***

Source: Esri, CT DOT, BFJ Planning



# Existing Conditions

## Roadway Overview and Functional Classification

CTDOT has established a functional classification for roads. This classification is based on use, design, and capacity. Figure 2 shows the classification of the roadways in Orange.

***Interstates, Expressway Highway System*** – Function as multi-lane, high volume and high speed through roads connecting major municipal centers to each other and other Interstates/Expressways.

- Interstate 95 (I-95) cuts across the southeastern corner of Orange, with on- and off- ramp access via Marsh Hill Road. I-95 is a major transportation corridor for commuters and commercial traffic between New York and Boston, while also providing Orange with convenient access to nearby coastal communities and business districts.
- Route 15 / The Wilbur Cross Parkway runs through the eastern part of Orange, providing a scenic, limited-access route for travelers between Orange and Hartford. Route 15 provides direct access to Orange via interchanges at Route 121 and Route 34.

***Principal Arterial*** - Connects major developments and activity centers to each other and to the interstate highway system.

- Route 1 (Boston Post Road) serves as Orange's key commercial corridor while also facilitating regional connectivity between Milford, West Haven, and New Haven. The corridor is lined with numerous commercial centers, making it an economic hub for the Town and a destination for both residents and visitors.
- Route 34 (Derby Avenue) connects Orange to neighboring New Haven, Shelton, and Derby, with direct interchange access to Route 15 (Wilbur Cross Parkway).

***Minor Arterial –*** Generally carries higher traffic volumes than major collector roadways and provides direct connection to principal arterials.

- In Orange, the following are classified as Minor Arterials: Racebrook Road, Orange Center Road, Lambert Road, South Lambert Road, Marsh Hill Road, Grassy Hill Road, Derby Hill Road, Wheelers Farm Road, Ridge Road, Old Tavern Road.

***Major Collector*** – Designed to carry traffic from local streets to arterial roadways. Average Annual Daily Traffic (AADT) is typically in the range of 1,500 to 8,000 vehicles per day.

- In Orange, the following are classified as Major Collectors: Turkey Hill Road, Meetinghouse Lane, Tyler City Road, Grannis Road, New Haven Avenue, Dogwood Road, Dogburn Road, Racebrook Road (north of Derby Avenue), Pine Tree Drive, and Peck Lane, are classified as Minor Arterials.

***Local Streets –*** These roads carry less volume but play a key role in the overall network. They provide access to adjacent land and are meant to carry low volumes of traffic at low speeds, not to carry through traffic. These streets contain a high percentage of the overall street mileage, but have the lowest level of through mobility, while providing the highest level of access to the adjacent land uses. In Orange, this primarily includes the Town's many residential streets.

## Roadway Jurisdiction

While the Town has maintenance jurisdiction over most roads in Orange (i.e., local residential streets), CT DOT maintains jurisdiction over the Town's most trafficked roads that are essential to the local economy and quality of life (see Figure 3 for an overview). CT DOT is responsible for the upkeep, repairs, resurfacing, and signage of the following roadways:

- **CT Routes**
  - Route 15 / Wilbur Cross Parkway
  - Route 34 / Derby Avenue
  - Route 114 / Racebrook Road
  - Route 121 / Grassy Hill Road
  - Route 152 / Orange Center Road
- **US Routes**
  - Route 1 / Boston Post Road
- **Interstate 95** (I-95)

## Average Annual Daily Traffic

AADT is the total volume of vehicle traffic of a roadway segment for a year divided by 365. Figure 2 shows AADT volumes that are available for roadways within Orange. AADT generally corresponds with roadway classification. The segment of I-95 within Orange has the highest traffic volume (128,300). Table 1 summarizes the AADT volume estimates of the top eight highest trafficked roadways in the Town.

***Table 1: Orange Roadways with the Highest Average Annual Daily Traffic (AADT) Volumes***
Source: CTDOT, 2024

| | Street/Roadway | AADT Volume |
|---|---|---|
| **1** | I-95 | 128,300 |
| **2** | Route 15 | 64,000 |
| **3** | Route 34 / Derby Ave. | 28,100 |
| **4** | Marsh Hill Rd. | 21,000 |
| **5** | Route 1 | 18,800 |
| **6** | South Lambert Road | 13,500 |
| **7** | Racebrook Road | 12,100 |
| **8** | Orange Center Road | 10,200 |

Note: Volume based on highest reported AADT segment of each roadway within Orange.

***Figure 2: Roadway Classification and Average Annual Daily Traffic (AADT) Volumes***

Source: Esri, CT DOT, BFJ Planning

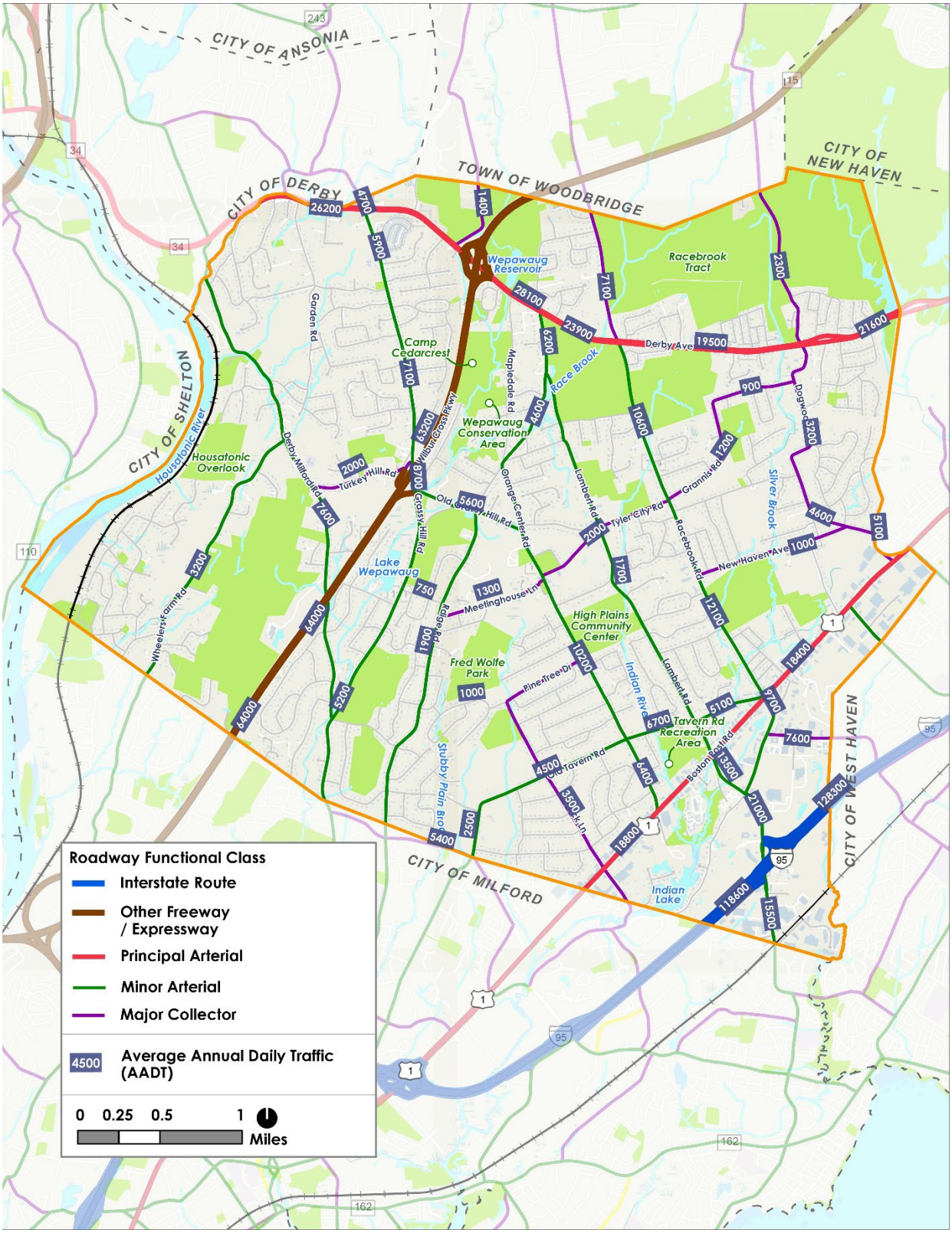
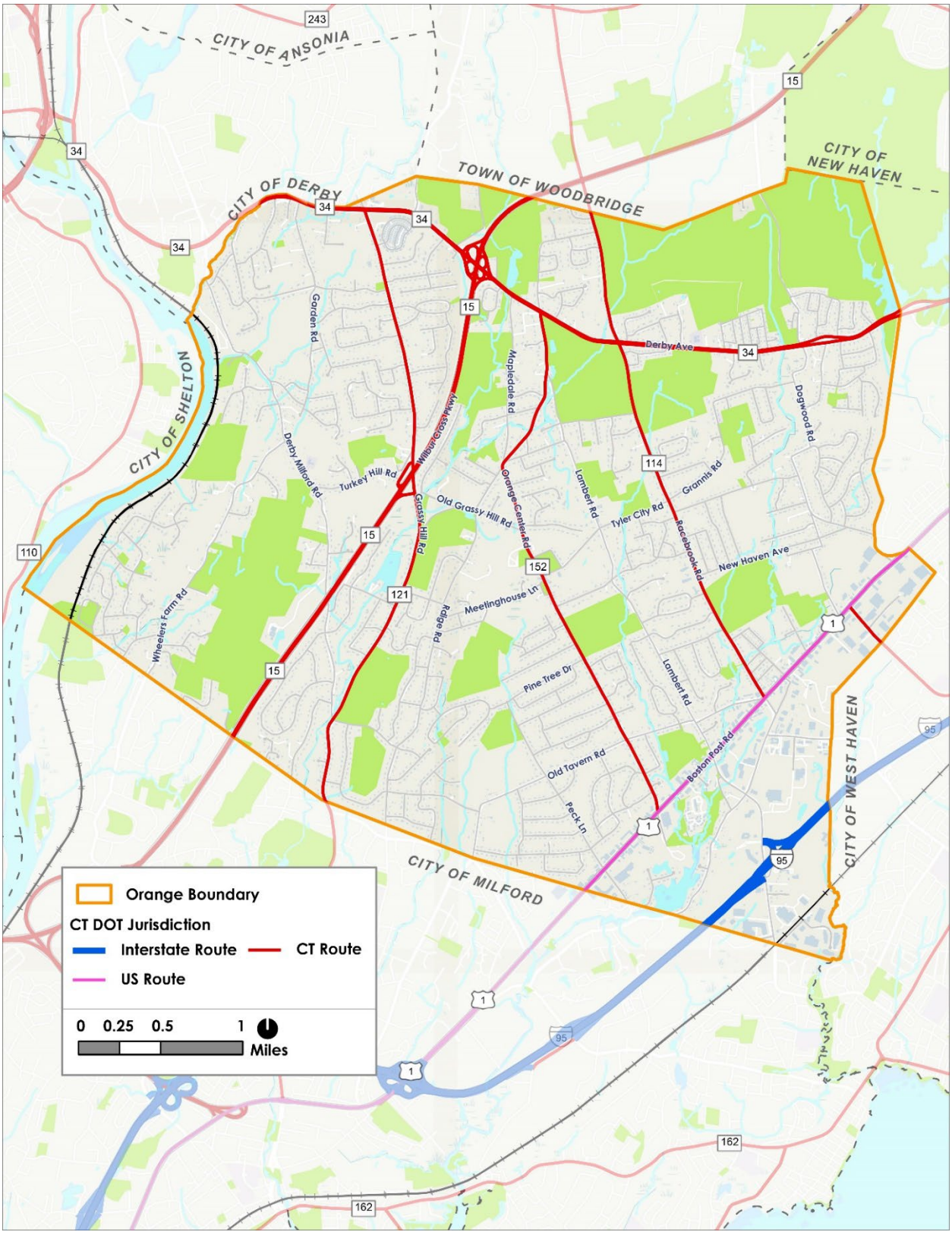


***Figure 3: Roadway Jurisdiction***
Source: Esri, CT DOT, BFJ Planning



## Crash Analysis

***High Accident Intersections***- An inventory of motor vehicle crash records was obtained from the Connecticut Crash Data Repository for the most recent available five-year period (2020-January 2025). During the period, about 725 incidents occurred at intersections in Orange. Table 2 shows that the intersection with the highest number of documented crash incidents during the period was Racebrook Road – Derby Avenue, followed by Route 1 – Lambert Road / South Lambert Road. The locations in Table 2 present opportunities for further study and potential safety enhancements, in coordination with CTDOT where necessary. See Figure 4, following the table, for an intersection crash density map.

Beyond intersection crashes, additional analysis looked at accidents that involved fatalities, as well as pedestrian- and bicyclist-involved crashes.

***Crash Fatalities*** - During this analysis period, there were 7 incidents that resulted in a fatality: three separate incidents on Derby Avenue, two incidents on Route 1 (each incident involving a pedestrian), one incident on Route 15, and another on Marsh Hill Road near the I-95 on-ramp. Refer to Figure 4 for a reference of fatal crash locations.

***Pedestrian- and Bicyclist-Related Incidents*** – During the reporting period, 22 crashes involved a pedestrian, two of which were fatal on Route 1. Generally, pedestrian-related crash incidents were most concentrated along the Route 1 corridor, with 10 total during this period. While three pedestrian-related incidents occurred on Derby Avenue and another on Orange Center Road, most other pedestrian-related incidents occurred on local residential streets.

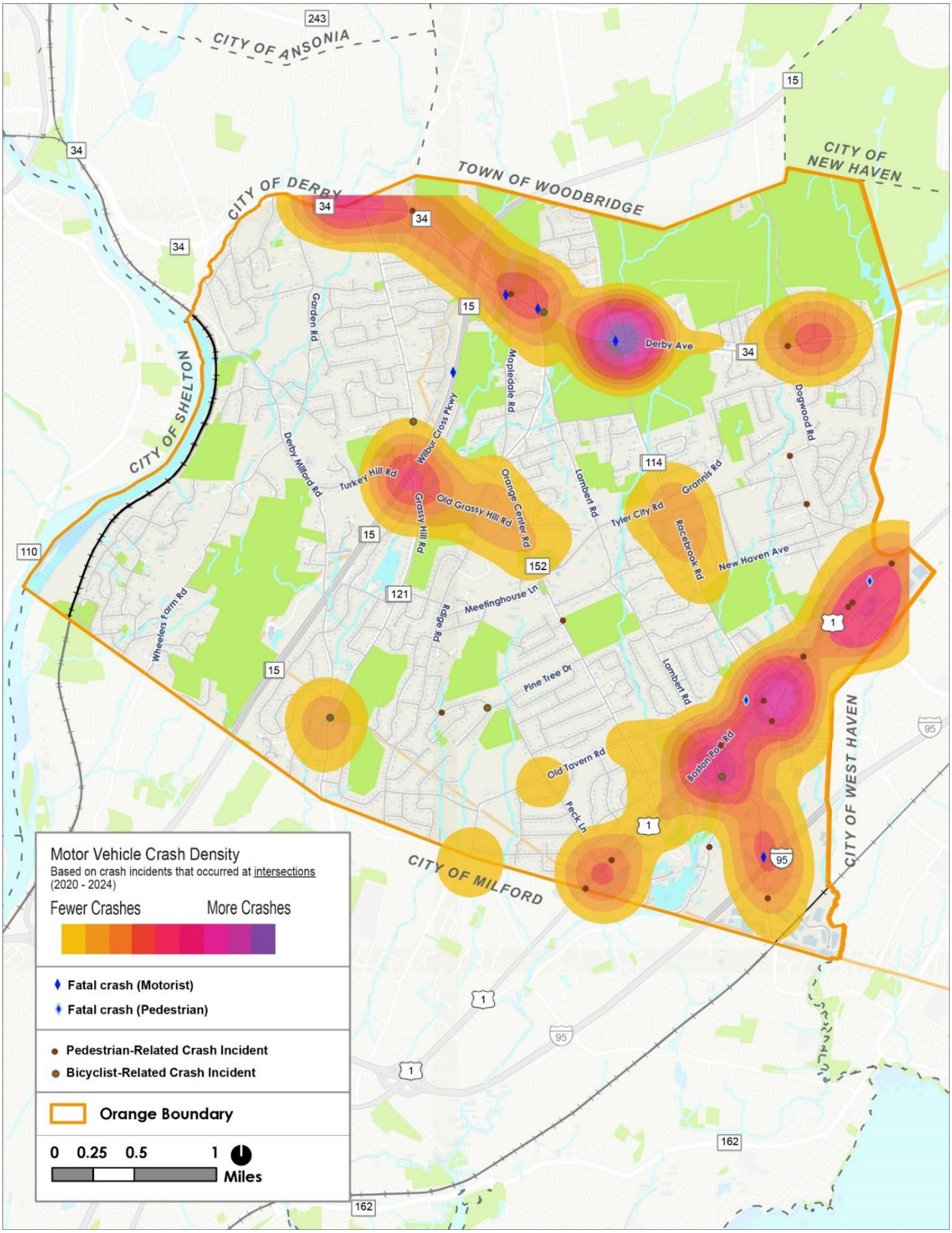
During this period there were five total crashes that involved a bicyclist, with no identifiable pattern or "hot-spot" area of incidents (Refer to Figure 4).

***Table 2: Orange Intersections with Highest Crash Incidents (2020-2024)***
Source: CT Crash Data Repository, CTDOT, MMUC 2020 - Jan. 2025

| Intersection | Injuries | Fatalities | Total |
|---|---|---|---|
| **Racebrook Road - Derby Avenue** | 17 | 1 | 50 |
| **Route 1 – Lambert Road / South Lambert Road** | 8 | 0 | 35 |
| **Route 1 - Racebrook Road – Old Tavern Road** | 6 | 0 | 33 |
| **Derby Ave. - Grassy Hill Road / Sodom Lane** | 13 | 0 | 26 |
| **Derby Ave. - Dogburn Road** | 14 | 0 | 24 |
| **Route 1 – Peck Lane** | 11 | 0 | 21 |
| **Derby Ave. – Orange Center Road** | 8 | 1 | 20 |

*Note: (1) Data are based on crashes that were specifically reported as having occurred at an intersection; Excludes Interstate and Expressway crashes.*
*(2) Intersections identified in this table had at least 20 crashes over this period.*

***Figure 4: Intersection Crash Density and Incidents Involving Pedestrians and Bicyclists (2020-2024)***
Source: Esri, CT DOT, BFJ Planning



## Recent and Planned Roadway Improvement Projects

A number of recently completed projects and planned capital improvements will have positive impact on Orange's roadway network. These efforts are summarized below:

- ***Route 1 Roadway and Pedestrian Improvements*** *(Ongoing)*
    - *Lambert Road to Racebrook Road* – Completed in 2022, CT DOT added a center turn lane to improve traffic flow and replaced an aging culvert beneath the roadway.
    - *Milford city border to Lambert Road* **-** Starting in 2024, CT DOT is initially focusing on improving traffic efficiency and safety which is compromised by the number of access driveways and high volumes along the corridor. Key interventions include widening the road in order to install a center turning lane, intersection upgrades, driveway and intersecting road enhancements, and pavement marking improvements. The upgrades are also coordinating new bus shelters with CTtransit.
        - ***Sidewalk Construction –*** Currently, there are no sidewalks along Route 1 in Orange. However, CT DOT is in the design stage of exploring sidewalk construction on both sides of Route 1 in Orange from the Milford border to Lambert Road. This work will coordinate with anticipated upgrades in adjacent Milford.

- ***Roadway Resurfacing:***
    - ***Town of Orange Three-Year Paving Projection –*** While CT DOT maintains key State roadways such as Route 1, Orange Center Road, Racebrook Road, and Derby Avenue, the Town is responsible for repaving its local roads. The Town maintains a three-year paving action plan based on roadway priority areas.
    - ***Route 15 Pavement Rehabilitation:*** The Connecticut Department of Transportation (CTDOT) has initiated a project to rehabilitate the pavement on Route 15, covering both northbound and southbound lanes from approximately one mile south of the Derby-Milford Road overpass in Orange to the southern entrance of the Heroes Tunnel in New Haven. Construction is in its final stages.

- **Route 15 and Route 34 Interchange Improvements**: A project is underway to enhance the interchange at Route 15 and Route 34 in Orange. This initiative includes adding a northbound acceleration lane from Route 34 westbound and a southbound deceleration lane onto Route 34 westbound. The project also involves reconstructing the existing median on Route 15 and installing a concrete median barrier. Construction began in 2020.

## Public Transportation

***Rail***

Although Orange does not have its own rail station, residents benefit from proximity to the Metro-North Railroad stations in Milford and West Haven, allowing convenient access to New York City via the New Haven Line. Both stations are accessible from the center of Orange in less than a 20-minute drive.

While local advocacy has sought to establish a commuter station in Orange in recent decades, the opening of the West Haven station in 2013 has helped to boost local service. An Orange station is no longer proposed by DOT due to the completion of the West Haven Station. As a result, Orange has eliminated the Transit Oriented Development (TOD) zone from its ordinance.

***CTtransit Bus Service***

CTtransit provides bus service within Orange through the New Haven Division. Four routes operate with stops in Orange, connecting the Town to nearby cities like New Haven and Milford. These routes also connect riders to major transit hubs, allowing transfers to other bus lines and Metro-North commuter rail services. While Orange does not have an extensive local bus network, CTtransit remains an important transportation option for residents, workers, and visitors needing reliable public transit. Four bus routes currently serve Orange:

- **Route 261** - Known as the Boston Post Road route, connects downtown New Haven to the CT Post Mall in Milford, passing through Orange. The route operates on weekdays, roughly from 6:30am to 6:30pm. On Saturdays, the service runs from approximately 3:00pm to 10:00pm, and on Sundays, from 7:00am to 7:00pm.

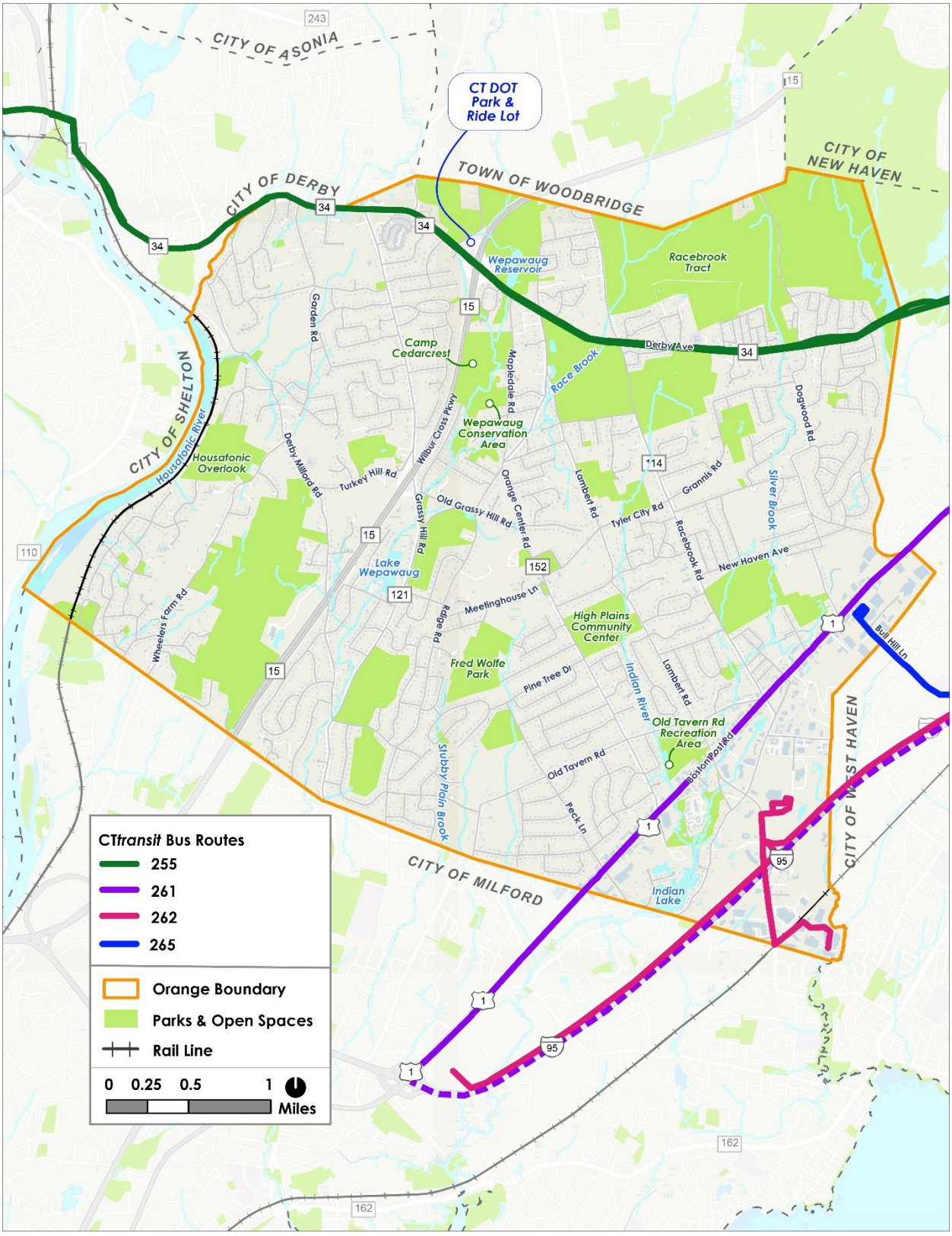
- **Route 262** – Provides limited-stop service between downtown New Haven and the CT Post Mall in Milford, with stops to Orange's businesses and services off Marsh Hill Road. The route operates hourly, seven days a week, from approximately 6:00am to 12:00am.

- **Route 255** – Connects downtown New Haven to Seymour, passing through Orange. In Orange, the route serves the Derby Shopping Center, providing residents with access to shopping and transit connections. The service operates seven days a week, with varying schedules.

- **Route 265** - Primarily operates between downtown New Haven and West Haven. While the main route does not extend into Orange, certain designated trips continue into Orange via Bull Hill Lane, offering access to shopping destinations along the Boston Post Road corridor, such as Burlington Coat Factory. Service runs seven days a week, with varying schedules.

As can be seen from Figure 5, these bus routes generally provide east-west service via Route 34, Route 1, and I-95. There are no north-south service routes in Orange, leaving most of the residential areas in the center of the Town unserved.

***Figure 5: CTtransit Bus Service in Orange (2025)***
Source: Esri, CT DOT, CTtransit, BFJ Planning



### *Journey to Work Trends*

According to the most recent U.S. Census Bureau ACS 5-year estimates (2023), residents in Orange over 16 years of age in the labor force primarily drove alone to work (86%), followed by 10% that carpool. Other modes of transportation account for a small share of the population's commutation patterns: Public transportation (1.4%); Taxi/Motorcycle (1.3%); Walk (1.3%). Note that these numbers have been adjusted to account for the roughly 14% of the resident workforce that works from home.

### *Commuter Parking / Park-and-Ride*

CT DOT maintains a free commuter parking lot in Orange on Greenway Road (at the Route34 / Wilbur Cross Parkway interchange) (shown on Figure 5). The lot is a resource for individuals who carpool as well as a park-and-ride option for users of the CTtransit Route 255 bus.

*Source: Google Streetview, 2023*

### *Greater New Haven Transit District – ADA Paratransit*

Greater New Haven Transit District (GNHTD) provides ADA paratransit service in the Greater New Haven area where CTTransit's New Haven Division operates. This service is available within a ¾ mile perimeter of the fixed route service routes discussed above. Service is provided from 5:00am to 1:30am, seven days a week, and requires that trips must begin and end within the designated service area.

### *Town of Orange Dial-A-Ride*

The Town provides a transportation service for seniors and residents with disabilities. Residents who are eligible must apply with the Town's Transportation Coordinator. Once approved, rides must be scheduled 24 to 48 hours in advance. The service operates Monday through Friday from 7:00 am until 6:00 pm.

The program transports within Orange as well as to Milford, West Haven, East Haven, New Haven, North Haven, Hamden, Derby, Shelton, and additional local areas by request on a case-by-case basis. The service is free for health aides and otherwise operates on a suggested donation basis.

## Pedestrian and Bike Infrastructure

### *Pedestrian Facilities*

As a suburban town with rural areas, Orange's development pattern has historically been auto oriented. There is a lack of formal sidewalks in Orange that connect uses. However, planned CT DOT sidewalk installation on Route 1 from the Milford city border to Lambert Road will provide significant investment in such infrastructure, allowing for safer pedestrian conditions along this key commercial corridor.

**CTDOT Complete Streets -** In 2023, the Connecticut Department of Transportation (CTDOT) introduced new design criteria requiring the inclusion of sidewalks, bike lanes, and crosswalks in all major state road projects. These standards apply to state roads and also influence local projects funded through state grants.

Although Orange does not have a Complete Streets policy, the Town's Zoning Regulations emphasize pedestrian safety, requiring that new developments include sidewalks to provide safe access from parking areas to buildings and to minimize pedestrian use of driveways and parking areas. For example, the recent development of Firelite Commons included the construction of a sidewalk along the adjacent portion of Old Tavern Road.

Orange's 2015 POCD highlighted two key sidewalk extension goals that have yet to be realized. (Refer to Figure 6). Such efforts would help promote safe pedestrian circulation within Orange. The planned sidewalk construction on Route 1 will provide an important opportunity to strategize future expansions.

- Install continuous sidewalks on both sides of Route 1. Although partial sidewalk installments are already planned, the vision for sidewalks along both sides of the roadway should continue to be pursued with CT DOT.
- Additionally, there are no formal sidewalks along Orange Center Road, but the opportunity remains to coordinate with CT DOT to connect Town Hall and the High Plains Community Center to Route 1.

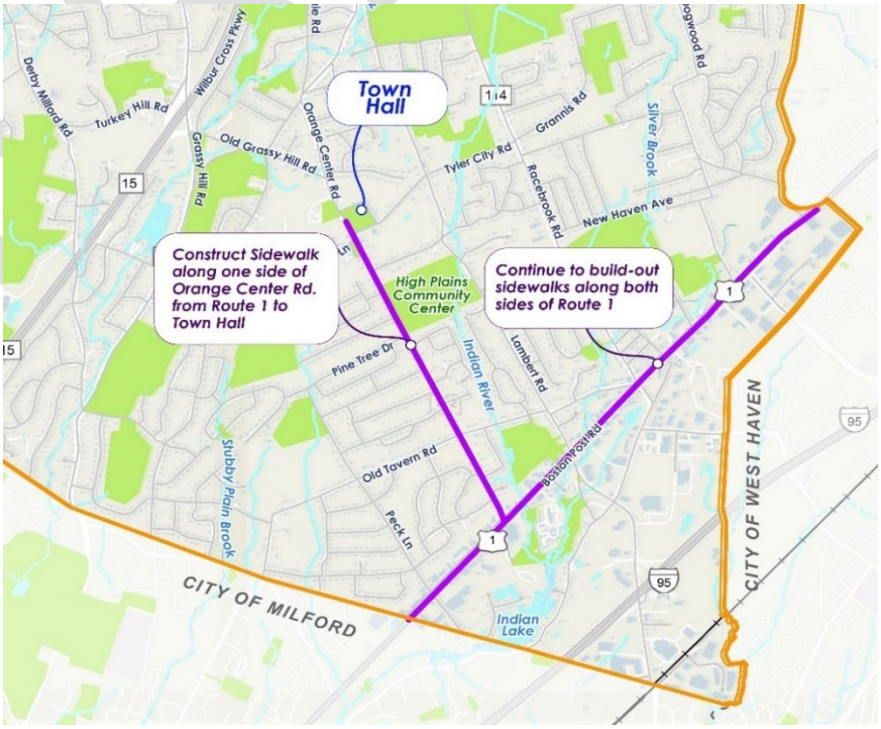



***Figure 6: Sidewalk Construction/Extension Priorities***
Source: Esri, CT DOT, BFJ Planning

### *Bicycle Facilities*

Although there are no designated bike lanes or bike route infrastructure in Orange, the

opportunity remains to better provide residents with safe biking options, as well as to coordinate with regional bike route connections.

## Recommendations

### 6.1. Continue to coordinate with CTDOT on ongoing and potential future roadway improvement studies and projects

Subsequent recommendations that suggest interventions on State roadways assume necessary partnership and coordination, as well as general ongoing town advocacy to illuminate areas where improvements are needed. Due the prevalence of CT DOT jurisdiction over Orange's most critical roadways, such coordination is paramount.

### 6.2. Adress overall roadway efficiency and safety issues.

**6.2.1** Target intersection upgrades to improve traffic safety at locations that have the highest crash rates. Intersections with the highest crash rates include:

- Racebrook Road - Derby Avenue
- Route 1 – Lambert Road / South Lambert Road
- Route 1 - Racebrook Road – Old Tavern Road
- Derby Ave. - Grassy Hill Road / Sodom Lane
- Derby Ave. - Dogburn Road
- Route 1 – Peck Lane
- Derby Ave. – Orange Center Road

It is anticipated that improvements on Route 1 will enhance the safety of this corridor. Crash data should continue to be monitored after such improvements are complete.

**6.2.2** In tandem with regional growth and development, continue to study targeted opportunities to promote roadway traffic efficiency and congestion problems.

### 6.3. Address speeding and traffic calming in residential areas.

**6.3.1** Continue to enforce speed limits through monitoring and citations.

**6.3.2** Continue to consider traffic calming in residential areas.

*For example, portable speed monitors that alert drivers when they are over the speed limit should continue to be used and added to appropriate locations.*

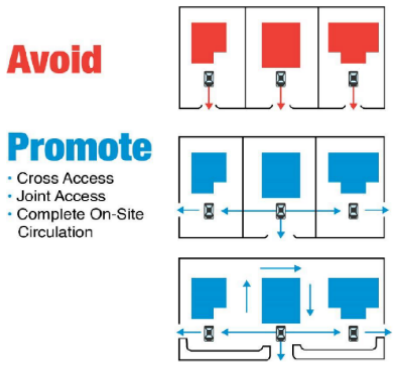
### 6.4. Ensure the vitality and traffic efficiency of Route 1 and adjacent uses.

**6.4.1** Continue to support CT DOT plans for Route 1 improvements, including the planned installation of sidewalks from the Milford border to Lambert Road.

**6.4.2** Continue to ensure access management strategies during the site plan review process for new developments on Route 1.

**Access Management** – A key strategy of access management is to connect parking areas via easements between adjacent properties in an effort to reduce the number of access driveways on commercial corridors such as Route 1.

Efficient and safe site access along Route 1 has become a growing concern. Inefficient lot layouts, excessive curb cuts/driveways, a lack of connections between parking lots, and a lack of clear signage contribute to congestion, reduced customer turnover, and frustration for drivers.




***Access Management – Driveway Consolidation Concept***

*Source: Center for Urban Transportation Research, University of Florida.*

**6.4.3** Promote better landscaping in large parking lot areas along Route 1 through the site plan and the subdivision review process.
*This will support the objective to efficiently divide and organize parking lots with landscaping and trees. Such features can promote safer parking conditions, mitigate heat island effect, and help with stormwater runoff.*

## 6.5. Continue to improve pedestrian facilities

**6.5.1** Evaluate opportunities to improve pedestrian conditions around key community facilities, including crosswalks and signage.

**6.5.2** In addition to the planned sidewalk installation on Route 1 from the Milford border to Lambert Road, advocate for sidewalk installation on both sides of the corridor, extending east to the border with West Haven.

**6.5.3** Continue to investigate the feasibility of installing pedestrian sidewalks or paths on one side of Orange Center Road, connecting Route 1 to Town Hall. It might be preferable to focus on the east side of the road as that is where some sidewalks/pathways currently exist near Town Hall.

## 6.6. Undertake a Town-wide bicycle study to assess current conditions and to identify opportunities for potential infrastructure improvements.

Although opportunities for designated bicycle infrastructure in Orange are limited, such a study could investigate opportunities for off-road recreational facilities, as well as longer-term strategies to establish safer on-road routes.

## 6.7. Continue to partner with CTtransit to ensure evolving demographic changes in Orange are met with adequate service.