# ES.1 Study Background

The I-84 Exit 3-8 Danbury project came out as a high-priority project from the findings of the Let's GO CT Plan prepared by the Connecticut Department of Transportation (CTDOT). The limits of the project are I-84 between Exits 3 and 8 approximately 6.5 miles in length. In addition, the project extends on U.S. Route 7 between Exits 7 and 9 (west portion) and from I-84 to Exit 11 (east portion) approximately 1.5 miles in length. **Figure ES-1** shows a study area map highlighting the project limits in "red".

The project, in general, has the following goals and considerations:

- Increase highway capacity
- Improve highway access, safety and operations
- Enhance mobility
- Connect City with regional destinations
- Improve multimodal connections
  - Commuter parking
  - Bicycle and pedestrian travel
  - $\circ \quad \text{Transit connections} \quad$
- Improve local and regional commerce and freight mobility

# ES.2 Summary of Findings and Deficiencies ES.2.1 I-84

This section summarizes the deficiencies for I-84 within the study area.

# **ES.2.1.1** Mainline Deficiencies

- Substandard horizontal curves near Exits 3 and 4 which lower design speeds
- Substandard shoulder widths throughout the corridor
- Substandard stopping sight distance caused by vertical curves throughout the corridor
- Substandard roadway grades for truck movements







- Substandard interchange spacing requirements i.e. between Exits 3 and 4, Exits 5 and 6, and Exits 7 and 8
- Mainline capacity deficiencies, with a significant portion of local traffic using I-84 during peak periods Exits 3 to 8 in the eastbound direction and Exits 6 to 8 in the westbound direction
- Mainline crashes attributed to roadway geometry and peak period congestion Exits 3 to 6 in the eastbound direction and Exits 3 to 4 in the westbound direction
- Several structures on I-84 mainline require replacement

# **ES.2.1.2 Interchange Deficiencies**

# ES.2.1.2.1 Exit 3 – Route 7

- Weaving operation between Exits 3 and 4 in the eastbound direction
- Left hand exit and entrance to/from I-84 and Route 7 in the westbound direction does not meet driver expectancy

#### ES.2.1.2.2 Exit 4 – Lake Avenue

- Substandard deceleration length and exit curvature for off-ramps in the eastbound and westbound direction
- Substandard acceleration length for the on-ramp in the eastbound direction
- Weaving operation between Exits 3 and 4 in the eastbound direction
- Poor traffic merge operation for the on-ramp in the eastbound direction
- High crash rates at the off-ramps in the eastbound and westbound direction rear-ends and sideswipes
- Insufficient intersection capacity at Lake Avenue/I-84 Eastbound Ramps/Segar Street, Lake Avenue/Shannon Ridge Road, and Lake Avenue/Mill Ridge Road intersections
- High crash rates at Lake Avenue/I-84 Eastbound Ramps/Segar Street intersection attributed to intersection operation.

# ES.2.1.2.3 Exit 5 - Main Street (Route 39)

- Substandard exit curvature for off-ramps in the eastbound and westbound direction
- Substandard acceleration lengths for the on-ramps in the eastbound and westbound directions
- Poor traffic diverge operation for the off-ramp in the eastbound and westbound directions



- Poor traffic merge operation for the on-ramp in the eastbound direction
- High crash rates at the off-ramps in the eastbound and westbound direction rear-ends and sideswipes
- Insufficient intersection capacity at Main Street/I-84 Ramps/Golden Hill Road, Main Street/Downs Street/North Street, Main Street/Cowperthwaite Road, Main Street/Hillside Avenue, Main Street/Water Street/I-84 Eastbound on-ramp, and I-84 Eastbound off-ramp/Farview Street/Downs Street intersections
- High crash rates at the Main Street/I-84 Ramps/Golden Hill Road and Main Street/Water Street/I-84 Eastbound on-ramp intersections attributed to intersection operation.

# ES.2.1.2.4 Exit 6 – North Street (Route 37)

- Incomplete interchange on North Street
- Substandard acceleration length for the on-ramp in the eastbound direction
- Poor traffic merge operation for the on-ramp in the eastbound direction
- High crash rates at the on-ramp in the eastbound direction rear-ends and sideswipes
- Insufficient intersection capacity at North Street/Hayestown Avenue, North Street/I-84 Westbound off-ramp, North Street/Balmforth Avenue, Tamarack Avenue/Hayestown Avenue, North Street/2<sup>nd</sup> Avenue, and North Street/Walnut Street intersections

# ES.2.1.2.5 Exit 7 – Route 7

- Weaving operation between Exits 7 and 8 in the westbound direction
- Left hand exit and entrance to/from I-84 and Route 7 in the eastbound direction does not meet driver expectancy
- High crash rate at the Route 7 exit in the westbound direction

# ES.2.1.2.6 Exit 8 – Newtown Road (SR 805)

- Substandard deceleration length for the off-ramps in the eastbound and westbound directions
- Substandard exit curvature for the off-ramp in the westbound direction
- Poor traffic diverge operation for the off-ramp in the westbound direction
- High crash rate at the off-ramp in the eastbound direction rear-ends and sideswipes
- Insufficient intersection capacity at I-84 Westbound on-ramp/Newtown Road/Mountainview Terrace and Eagle Road/Newtown Road intersections



• High crash rate at the I-84 Westbound on-ramp/Newtown Road/Mountainview Terrace intersection – rear-ends and sideswipes

# ES.2.2 Route 7

This section summarizes the needs for Route 7 within the study area.

# ES.2.2.1 Mainline Deficiencies

- Substandard horizontal curves on both sections of Route 7 i.e. west and the east section
- Substandard shoulder widths throughout the corridor
- Substandard stopping sight on Route 7 throughout the corridor
- Insufficient interchange spacing between Exits 8 and 9 and Exits 10 and 11
- Insufficient mainline capacity on Route 7 northbound at the merge with I-84 eastbound and on Route 7 southbound between White Turkey Road Extension and the merge with I-84 westbound
- Mainline crashes attributed to roadway geometry and peak period congestion Route 7 northbound at the merge with I-84 eastbound and on Route 7 southbound between White Turkey Road Extension and the merge with I-84 westbound
- Structures on Route 7 mainline within project area require replacement

# ES.2.2.2 Interchange Deficiencies

# ES.2.2.1 Exit 7 – Wooster Heights Road

- Weaving operation between Exits 7 and 8 in the northbound direction
- Poor traffic diverge operation for the off-ramp to Wooster Heights Road in the northbound direction caused by peak period congestion

# ES.2.2.2 Exit 8 – Park Avenue/Backus Avenue

- Weaving operation between Exits 8 and 9 in the northbound direction
- High crash rate at the Backus Avenue/Route 7 southbound off-ramp/Route 7 northbound on-ramp intersection

# ES.2.2.3 Exit 9 – I-84 Ramps (west side)

• Weaving operation between Exits 8 and 9 in the northbound direction

# ES.2.2.2.4 Exit 10 – Federal Road/I-84 Ramps (east side)

• Left hand entrance and exit to/from I-84 eastbound and Route 7 does not meet driver expectancy



- Substandard ramp curvature on entrance ramp (Federal Road) and exit ramp (I-84 eastbound).
- Poor traffic merge operation with Route 7 in the southbound direction caused by the lane drop and proximity to the I-84 westbound merge

# ES.2.2.5 Exit 11 – White Turkey Road Extension

• Poor traffic merge and diverge operation with Route 7 in the southbound direction caused by the queue spillback from the I-84 westbound merge

**Figures ES-2** through **ES-7** summarize the identified deficiencies along I-84 and Route 7 within the study area.

# **ES.2.3 Corridor Wide Needs**

The following is a list of corridor wide needs:

- Deficiencies in existing transit and rail service in the study area
- Lack of travel demand management (TDM) programs i.e. commuter parking, carpool, vanpool and other employer driven opportunities within the region
- Lack of pedestrian and bicycle travel linkages in the corridor specifically near I-84
- Inefficient freight travel and connectivity within the corridor





# Executive Summary •

Figure ES-3 Summary of Needs and Deficiencies – Map 2









#### Executive Summary •

Figure ES-5 Summary of Needs and Deficiencies – Map 4







#### Executive Summary •

Figure ES-7 Summary of Needs and Deficiencies – Map 6



