Phase 2

Computerized Traffic Signal System Timing Plan Evaluation - CRCOG

JUNE 2023

Connecticut Department of Transportation Partnering with

CAPITOL REGION COUNCIL OF GOVERNMENTS
Working together for a better region.

COMPUTERIZED TRAFFC SIGNAL SYSTEM EVALUATION
Prepared for Connecticut Department of Transportation
By Gannett Fleming

Table of Contents

List of Figures i
List of Tables iii
List of Acronyms iv
Glossary of Terms v
Executive Summary 1
Introduction 4
Data Collection 7
State Provided Information 7
Consultant Collected Information 7
Phase 2 Corridors Descriptions 7
Traffic Signal Optimization 42
Synchro Network Development 42
Operational Analysis 42
Crash Data 42
Traffic Signal Timing Development 43
Cycle Length 43
Splits and Offsets 43
Time of Day Schedule 44
CTDOT Review and Adjustments 44
Implementation and Field Fine-Tuning 44
Final Data Collection 44
Post Implementation Assessment 88
Corridor Performance Evaluation 89
Performance Evaluation Data 89
Performance Measures 89
User Savings Analysis 89
Summary of Performance Measures and User Savings 91
Travel Time Results 91
Corridor Performance Results 93
Study Benefit-to-Cost Comparison 94
Summary/Conclusion 95
References 96

List of Figures

Figure 1: Timing Plan Evaluation Process 2
Figure 2: Phase 2 Corridors Performance Measures Summary 2
Figure 3: CTDOT Statewide Map – CRCOG Region 4
Figure 4: CTDOT CTSS Locations – CRCOG Region 5
Figure 5: Phase 2 Corridors Performance Measures Summary 5
Figure 6: Route 218 (Travel Time Run Video) 6
Figure 7: Avon/Simsbury, Route 44, Route 202, & Route 10 Location Map 9
Figure 8: Berlin, Route 372 Location Map 12
Figure 9: Bloomfield, Route 218 Location Map 14
Figure 10: East Hartford, Route 518 Location Map 16
Figure 11: Enfield, Route 5 North Location Map 19
Figure 12: Glastonbury, Route 94 Location Map 21
Figure 13: Hartford, Route 44 Location Map 24
Figure 14: Plainville, Route 372 Location Map 27
Figure 15: Tolland, Route 195 Location Map 28
Figure 16: Vernon, Route 83 Location Map 31
Figure 17: Wethersfield, Route 99 Location Map 34
Figure 18: Windsor, Route 159 Location Map 37
Figure 19: Windsor Locks / Windsor Route 75 Location Map 40
Figure 20: Avon/Simsbury Route 44, Route 202, & Route 10 Location Map 47
Figure 21: Avon/Simsbury, Route 44, Route 202, & Route 10 Critical Volume Chart 49
Figure 22: Berlin Route 372 Location Map 50
Figure 23: Berlin, Route 372 Critical Volume Chart 52
Figure 24: Bloomfield Route 218 Location Map 53
Figure 25: Bloomfield Route 218 Critical Volume Chart 55
Figure 26: East Hartford Route 518 Location Map 56
Figure 27: East Hartford Route 518 Critical Volume Chart 57
Figure 28: Enfield Route 5 Location Map 59
Figure 29. Enfield Route 5 Critical Volume Chart 61
Figure 30. Glastonbury Route 94 Location Map 62
Figure 31. Glastonbury Route 94 Critical Volume Chart 64
Figure 32. Hartford Route 44 Location Map 66
Figure 33. Hartford Route 44 Critical Volume Chart 68
Figure 34. Plainville Route 372 Location Map 69
Figure 35. Plainville Route 372 Critical Volume Chart 70
Figure 36. Tolland Route 195 Location Map 71
Figure 37. Tolland Route 195 Critical Volume Chart 72
Figure 38. Vernon Route 83 Location Map 74
Figure 39. Vernon Route 83 Critical Volume Chart 76
Figure 40. Wethersfield Route 99 Location Map 78
Figure 41. Wethersfield, Route 99 Critical Volume Chart 80

Figure 42. Windsor Route 99 Location Map 82
Figure 43. Windsor Route 159 Critical Volume Chart 84
Figure 44. Windsor/Windsor Locks Route 75 Location Map 86
Figure 45. Windsor Locks/Windsor Route 75 Critical Volume Chart 88
Figure 46. Phase 2 Corridors Performance Measures Results Summary..... 95

List of Tables

Table 1. Avon/Simsbury Details, Route 44, Route 202, & Route 10 (W. Main St./E. Main St.) . 10
Table 2. Berlin Details, Route 372 (Farmington Avenue / Mill Street) 12
Table 3. Bloomfield Details, Route 218 (Cottage Grove Road) 15
Table 4. East Hartford Details, Route 518 (Roberts Street) 17
Table 5. Enfield Details, Route 5 North Section (Enfield Street) 20
Table 6. Glastonbury Details, Route 94 (Hebron Avenue) 22
Table 7. Hartford Details Route 44 (Albany Avenue) 25
Table 8. Plainville Details, Route 372 (New Britain Avenue) 27
Table 9. Tolland Details, Route 195 (Merrow Road) 29
Table 10. Vernon Details, Route 83 (Talcottville Road) 32
Table 11. Wethersfield Details, Route 99 (Silas Deane Highway) 35
Table 12. Windsor Details, Route 159 (Windsor Avenue) 38
Table 13. Windsor/ Windsor Locks Details, Route 75 (Ella Grasso Turnpike) 41
Table 14. Avon/Simsbury Route 44, Route 202, & Route 10 Changes to Cycle Lengths and Offsets 48
Table 15. Berlin Route 372 Changes to Cycle Lengths and Offsets 51
Table 16. Bloomfield Route 218 Changes to Cycle Lengths and Offsets 54
Table 17. Enfield Route 5 Changes to Cycle Lengths and Offsets 60
Table 18. Glastonbury Route 94 Changes to Cycle Lengths and Offsets 63
Table 19. Hartford Route 44 Changes to Cycle Lengths and Offsets 67
Table 20. Plainville Route 372 Changes to Cycle Lengths and Offsets 70
Table 21. Tolland Route 195 Changes to Cycle Lengths and Offsets 72
Table 22. Vernon Route 83 Changes to Cycle Lengths and Offsets 75
Table 23. Wethersfield Route 99 Changes to Cycle Lengths and Offsets 79
Table 24. Windsor Route 159 Changes to Cycle Lengths and Offsets 83
Table 25. Windsor Locks/Windsor Route 75 Changes to Cycle Lengths and Offsets 87
Table 26. Travel Time Comparison from “Before” to “After” Conditions 91
Table 27. Corridor Performance Results 93
Table 28. Corridor Average Travel Speed Increase 94

List of Acronyms

Acronym	Definition
@	At
a.m.	ante meridiem or “before midday”
AVE.	Avenue
CCTV	Closed Circuit Television
CRCOG	Capital Region Council of Governments
CTDOT	Connecticut Department of Transportation
CTSS	Computerized Traffic Signal System
EB	Eastbound
FHWA	Federal Highway Administration
GPS	Global Positioning System
INDOT	Indiana Department of Transportation
INT	Intersection
LOS	Level of Service
MOE	Measures of Effectiveness
MPH	Miles Per Hour
N/A	Not Available
NB	Northbound
NCHRP	National Cooperative Highway Research Program
OST	Objectives, Strategies, Tactics
p.m.	post meridiem or “after midday”
SB	Southbound
ST.	Street
TSDWIN	Time Space Diagram Windows Program
Rd.	Road
RTE.	Route
UCONN	University of Connecticut
Vxx	Version Number
WB	Westbound

Glossary of Terms[i]

Capacity
The maximum rate at which vehicles can pass through an intersection under prevailing conditions.

Congestion
An excess of vehicles on a portion of roadway at a particular time resulting in speeds that are slower — sometimes much slower — than normal or "free flow" speeds.

Coordination
The ability to synchronize multiple intersections to enhance the operation of one or more directional movements in a system.

Cycle Length
The duration of a complete sequence of phases in the absence of priority calls. In an actuated controller unit, a complete cycle is dependent on the presence of calls for all non-priority phases. Some indications may be served more than once in a cycle. Occasionally, an indication may not be part of a normal cycle (e.g., a left-turn arrow may only be displayed during railroad preemption).

Offset
The time relationship between the coordinated phase(s) based on the offset reference point and a defined master reference (i.e., master clock or sync pulse).

Operating Environment
An area with similar characteristics that would have similar signal timing objectives.

Phase Splits
The time assigned to a phase (green and the greater of the yellow change plus red clearance or the pedestrian walk plus clearance times) during coordinated operations. May be expressed in seconds or as a percentage

Time-Space Diagram
A chart that plots the location of signalized intersections along the vertical axis and the signal timing along the horizontal axis. This is a visual tool that illustrates coordination relationships between intersections.

Traffic Signal Operations
The prioritization of objectives and active collection of information to efficiently manage traffic signal infrastructure and control devices to maximize safety and throughput while minimizing delays.

User Priority
A user may be assigned a relative or absolute priority based on operating environment and locally desired outcomes. These priorities may vary by movement.

Executive Summary

This document is meant to report the "before" and "after" results of the timing plan evaluation for the CTSS completed in Phase 2 of the evaluation project. The Connecticut Department of Transportation (CTDOT) proposed the project to include approximately forty (40) corridors in the north central portion of the State of Connecticut known as Capital Region Council of Governments (CRCOG) crcog.org. See Figures 3 and 4 for CRCOG location maps. These corridors were analyzed and refined to improve traffic flow and the safety of roadway users and pedestrians. Below is a list of thirteen (13) corridors out of the approximately forty (40) included in Phase 2 of the project:

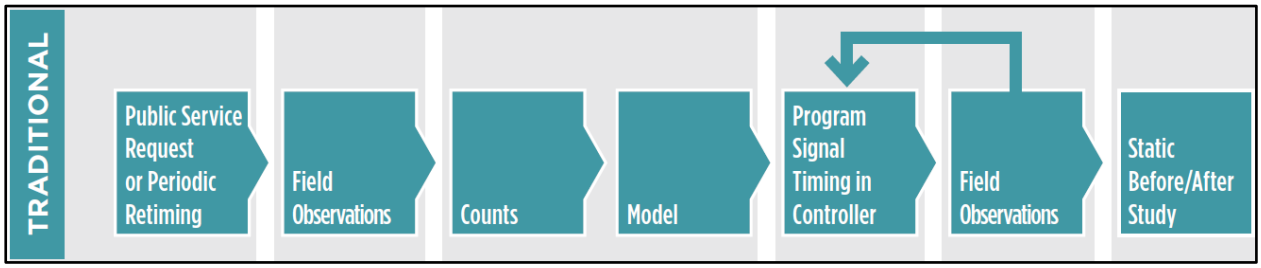
- Avon/Simsbury - Route 44, Route 202, & Route 10 (West Main Street/East Main Street) from Hoffman Auto Park to Nod Road
- Berlin - Route 372 (Farmington Avenue) from New Britain Road to Webster Square Road
- Bloomfield - Route 218 (Cottage Grove Road) from Prospect Street to Granby Street
- East Hartford - Route 518 (Roberts Street) from Silver Lane to I-84 Westbound Ramp
- Enfield North Section - Route 5 (Enfield Street) from Frew Terrace to Bright Meadow Boulevard
- Glastonbury - Route 94 (Hebron Avenue) from Route 2 Eastbound off Ramp to Eastern Boulevard
- Hartford - Route 44 (Albany Avenue) from Prospect Avenue to Belden Street
- Plainville - Route 372 (New Britain Avenue) from Hooker Street to Crooked Street
- Tolland - Route 195 (Merrow Road) from Goose Lane to I-84 Westbound Ramp
- Vernon - Route 83 (Talcottville Road) from I-84 HOV Ramp to Dobson Road
- Wethersfield - Route 99 (Silas Deane Highway) Maple Street to Jordan Lane
- Windsor - Route 159 (Windsor Avenue/Broad Street) from I-91 Southbound Ramps to Poquonock Avenue (Route 75) at Mack Street
- Windsor/Windsor Locks - Route 75 (Ella Grasso Turnpike) from Route 20 Eastbound Ramp to King Spring Road

The purpose of the project was to prepare and implement traffic signal coordination timing plans along the study corridors and to measure the resulting changes in traffic signal operations. These timing plans were developed based on a data collection effort, field observations, operational / safety review, FHWA guidance and recommendations, and detailed traffic signal timing analysis which included utilizing a computerized software model (Such as Synchro/SimTraffic 11[ii] and Tru-Traffic[iii]).

Each corridor was evaluated from 6 a.m. to 6 p.m. Monday through Friday to improve CTSS operations by following the step-by-step signal system timing plan evaluation process as shown in Figure 1 below. CTDOT Bureau of Highway Operations - Traffic Management Unit updated the timing plans from 6 p.m. to 10 p.m. Monday through Friday and Saturday/Sundays. The added weekday evening, Saturday, and Sunday hours timing plans by CTDOT did not include evaluation measures.

The signalized intersections coordination timings were adjusted based on operating environment, volume demand during congestion and uncongested conditions, signal phasing, and proximity of intersections. Cycle lengths were balanced to move motor vehicles through the closely spaced signalized intersections while limiting wait times for side streets.

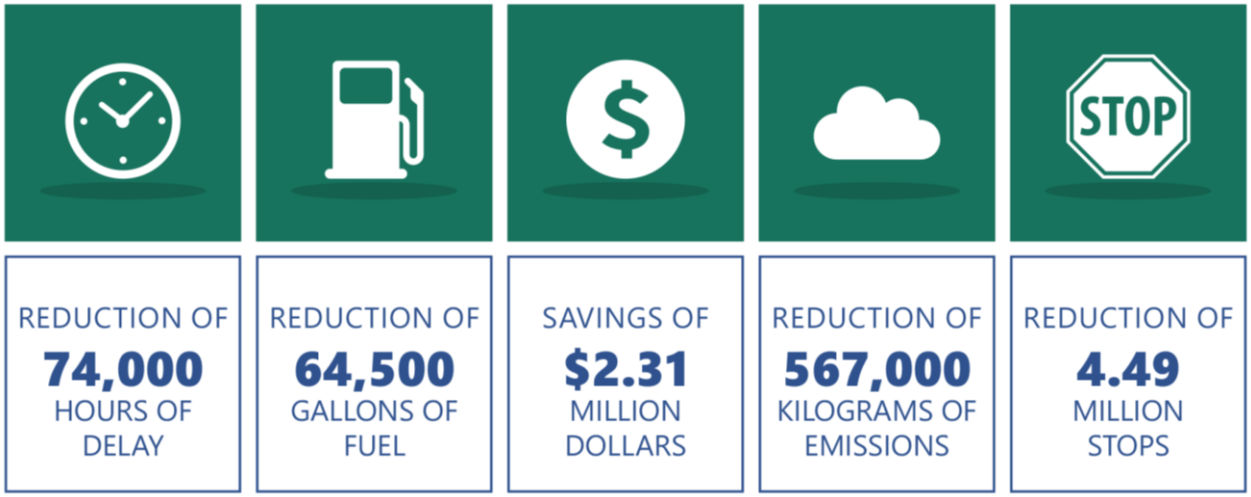
Figure 1: Timing Plan Evaluation Process



Source: NCHRP 954.[iv]

The new traffic signal timing plans were implemented by the CTDOT Bureau of Engineering and Construction - Division of Traffic Engineering's Traffic Signal Lab and Bureau of Highway Operations - Traffic Management Unit. The timing plans were fine-tuned based on field observations to achieve the best results possible. To confirm and quantify these results, performance measures were documented in the form of travel time studies, which occurred both before and after the signal timing implementation and field fine-tuning tasks. Based on the "Before" and "After" data of the corridors studied in Phase 2, we saw reduction in the following: delays, fuel consumption, road user costs, emissions, and number of stops. This resulted in reducing travel times and improving travel speed. See results of the Benefit Cost calculations provided below for Phase 2 corridors in Figure 2.

Figure 2: Phase 2 Corridors Performance Measures Summary



It is determined that significant cost savings were achieved in all thirteen (13) study corridors. On average, travel speeds were increased from an average of 24.7 mph to 26.7 mph, an increase of 8%. The number of stops were reduced by 4.49 million per year and travel times were reduced by an average of 8%. Phase 2 reductions to delay and fuel are estimated to save Connecticut motorists over 74,000 hours of delay and $2.31 million in user (time and fuel) costs per year.

A benefit-to-cost analysis was completed for each phase study area to understand the return benefit based on the State's investment. The annual benefit of Phase 2 is estimated $2,310,000 for a 4-year life expectancy. The Consultant's cost of Phase 2 is $400,000 or $100,000 per year for 4 years. The benefit –to-cost ratio for Phase 2 is calculated to be 23:1.

This shows a significant return on investment through delay and fuel savings to Connecticut motorists. The reduction to stops and emissions, provide a benefit to the air quality in Connecticut and is expected to provide added safety benefits by reducing crashes. Moreover, these savings are only inclusive for the portion of the day for which travel time data was collected.

Introduction

Timing plan evaluation of CTSS is a cost-effective method of improving traffic flow, reducing congestion, improving mobility and safety for all users. Federal Highway Administration (FHWA) guidance indicates that traffic signal systems need to be retimed every three (3) to five (5) years. The needs are based on changes in land use, population, demographics, and travel patterns. CTDOT's mission and goals emphasize a commitment to improving safety and mobility for all transportation users. This document identifies the results of the timing plan evaluation for approximately forty (40) corridors within the limits of the CRCOG area. This will help improve mobility and safety for all CTSS users and achieve CTDOT's mission and goals.

Phase 2 report documents the results of the thirteen (13) corridors out of the approximately forty (40) studied in the CRCOG area. Figure 4 below shows the approximate CTDOT's CTSS locations.

Figure 3: CTDOT Statewide Map – CRCOG Region

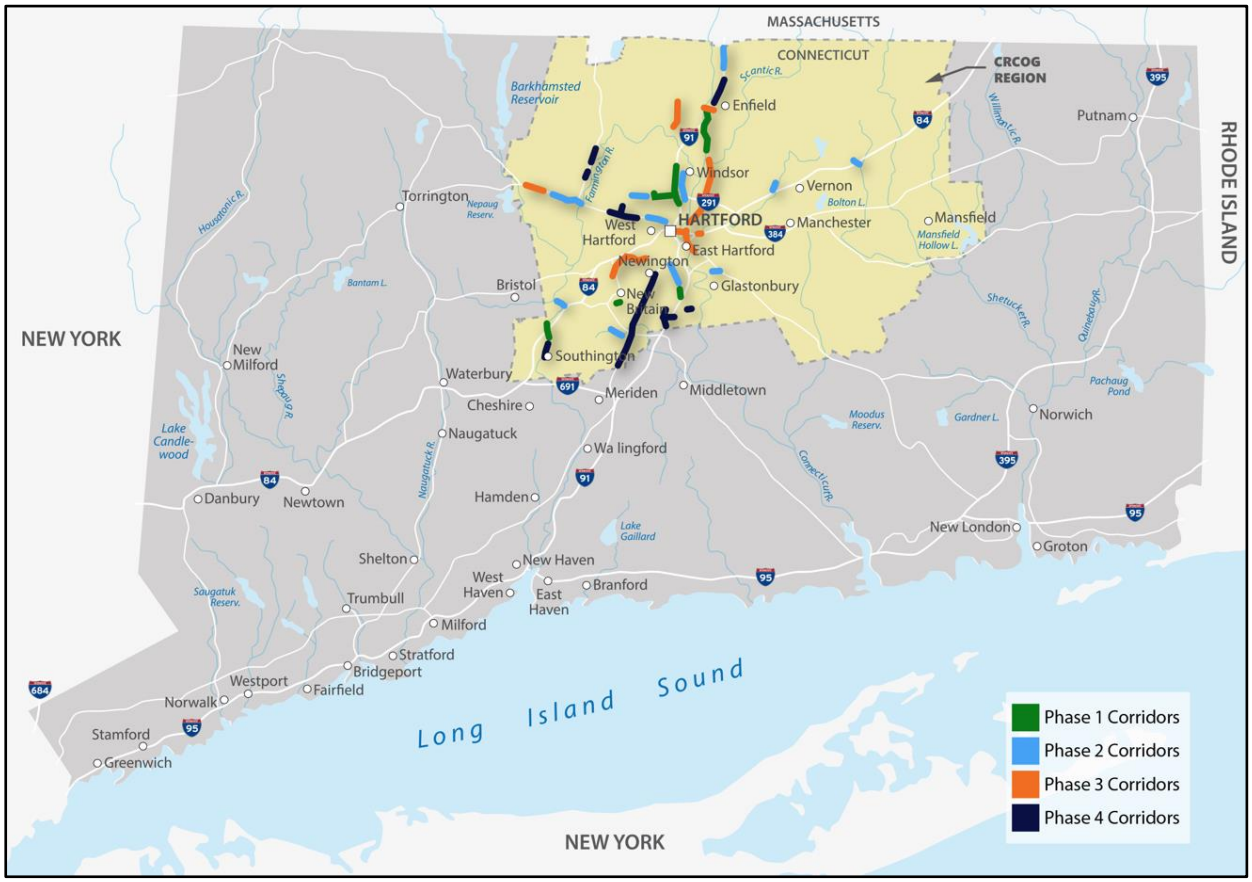
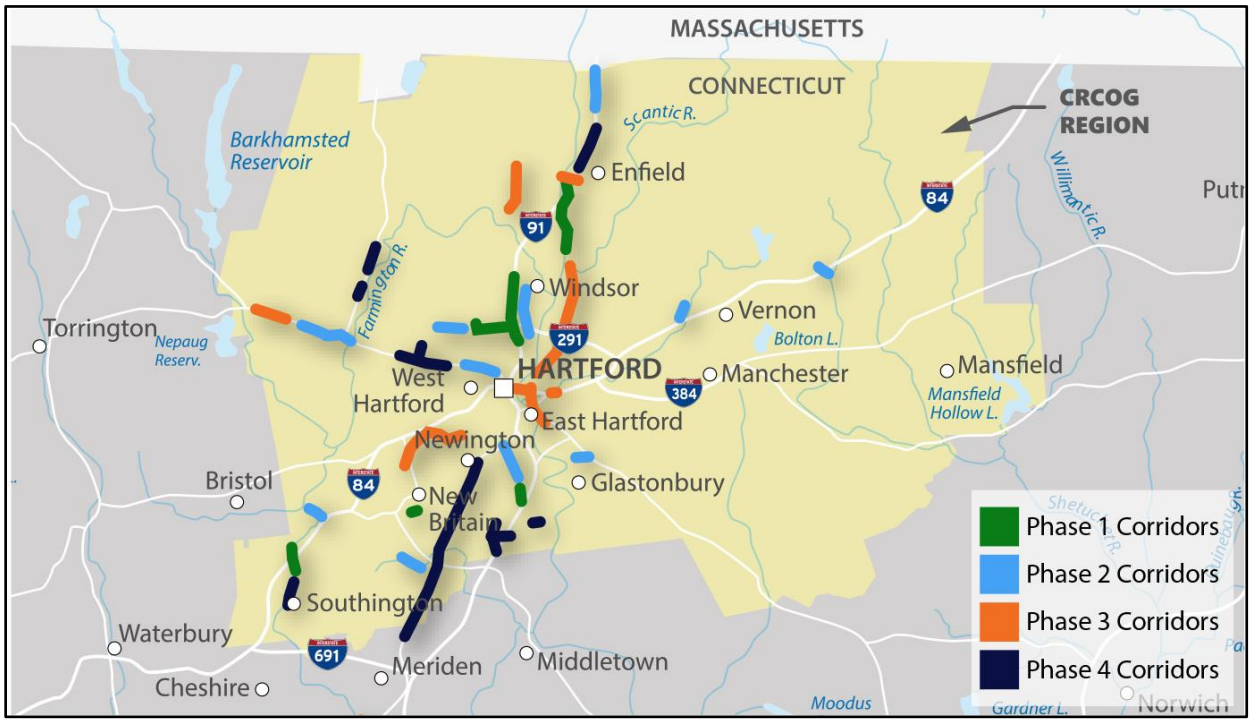
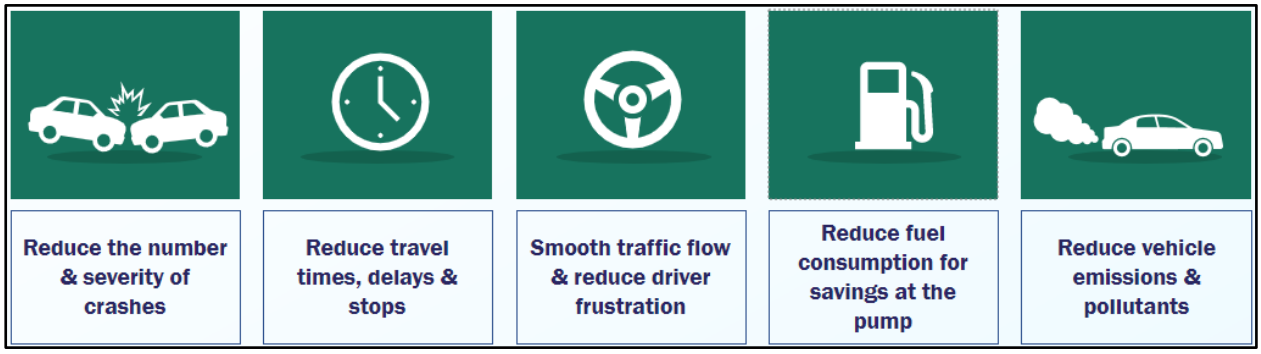


Figure 4: CTDOT CTSS Locations – CRCOG Region



CTDOT Green Light effort includes meeting key objectives and strategies shown below in Figure 5 that contribute to supporting CTDOT's mission and goals. The tactics are described in the timing plan development process below.

Figure 5: Phase 2 Corridors Performance Measures Summary



CTDOT and its Consultant team worked together to review the context of the corridors, perform traffic counts, travel time runs and perform analysis to optimize each corridor using Synchro V11, SimTraffic, Tru-Traffic and field observations. Upon completion of the data collection tasks and optimization, new timing plans were implemented. CTDOT and the Consultant team then performed "after" travel time runs to quantify the benefits of the timing changes using the performance measures established by the project. The following is a list of the corridors, location and system numbers included in Phase 2. A detailed list of intersections within each corridor is provided in Appendix A.

- Avon/Simsbury - Route 44, Route 202, & Route 10 (West Main Street/East Main Street) from Hoffman Auto Park to Nod Road
- Berlin - Route 372 (Farmington Avenue) from New Britain Road to Webster Square Road
- Bloomfield - Route 218 (Cottage Grove Road) from Prospect Street to Granby Street
- East Hartford - Route 518 (Roberts Street) from Silver Lane to I-84 Westbound Ramp
- Enfield North Section - Route 5 (Enfield Street) from Frew Terrace to Bright Meadow Boulevard
- Glastonbury - Route 94 (Hebron Avenue) from Route 2 Eastbound off Ramp to Eastern Boulevard
- Hartford - Route 44 (Albany Avenue) from Prospect Avenue to Belden Street
- Plainville - Route 372 (New Britain Avenue) from Hooker Street to Crooked Street
- Tolland - Route 195 (Merrow Road) from Goose Lane to I-84 Westbound Ramp
- Vernon - Route 83 (Talcottville Road) from I-84 HOV Ramp to Dobson Road
- Wethersfield - Route 99 (Silas Deane Highway) Maple Street to Jordan Lane
- Windsor - Route 159 (Windsor Avenue/Broad Street) from I-91 Southbound Ramps to Poquonock Avenue (Route 75) at Mack Street
- Windsor/Windsor Locks - Route 75 (Ella Grasso Turnpike) from Route 20 Eastbound Ramp to King Spring Road

The timing adjustments for the CRCOG area included travel time runs to calculate travel time measurement. Travel time runs include driving a vehicle though the study limits during weekday peak morning and afternoon hours to gather speed, stops, delay, and travel time measurements for both directions of travel. To learn more about the concept of how travel time runs are taken, watch the side-by-side video on the CTDOT Green Light website (CTDOT Green Light Main Page). The video demonstrates the before and after travel time runs for corridor Route 218 (Cottage Grove Road/Putnam Highway). See Appendix B for before and after travel times.

Figure 6: Route 218 (Travel Time Run Video)

Data Collection

Data collection and information review efforts were dual-purposed. First, it yielded the corridor characteristics, operating environment, and technical traffic signal information to perform calculations and support the development of new timing plans. Second, it provided the means to compare traffic signal operations from updated conditions to baseline conditions. See data sources used below:

State Provided Information

CTDOT provided the following:

- GRIDSMART or Miovision traffic volumes where available
- CTDOT Planning Unit volume counts
- Speed profiles from Google Maps
- Existing traffic signal plans
- Existing timing plans coversheets
- Existing time space diagrams
- Context of the corridors
- Travel time runs for assigned corridors

Consultant Collected Information

The Consultant team collected/created the following for each corridor

- Collected turning movement counts by classification from 6 am to 6 pm Monday – Friday for specific intersections
- Collected crash data
- Collected distance between intersections
- Created travel time run data for assigned corridors
- Collected timing plan coversheets for assigned corridors
- Collected time space diagrams for assigned corridors
- Collected existing and created optimized Synchro V11 models for assigned corridors
- Collected field observations of traffic operations

Phase 2 Corridors Descriptions

The characteristic of each corridor was provided through CTDOT data sources, desktop reviews, and field observations as well as detailed discussion with CTDOT staff regarding the context of each intersection and corridor. Each corridor is described within this section including a map of locations and detailed technical table.

Avon/Simsbury, Route 44, Route 202, & Route 10 (West Main Street/East Main Street)

Route 44, Route 202, & Route 10 (West Main Street/East Main Street) corridor is an east/west principal corridor through the towns of Avon and Simsbury and is primary commuter route. The arterial functional classifications for the project can be found on CTDOT's website at CTDOT Functional Classification. The corridor includes fourteen (14) signalized intersections beginning at Hoffman Auto Park Driveway (Int. 128-226) and ending at Nod Road (Int. 004-201). Figure 7 below shows the locations of signalized intersections studied in the corridor. This corridor is 2.9 miles long, has two travel lanes in each direction with no median, does not have sidewalks through most of the corridor, and no bike lanes. The average two-way peak hour volumes are approximately 2,250, 1,800, and 2,500 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 35 mph.

The corridor users are predominantly motor vehicles. Pedestrian crosswalks/indications are provided at Old Farms Road (Int. 004-202), Dale Road/Farmington Valley Mall (Int. 004-206), CVS/Avon Market Place (Int. 004-227), and the under-corridor crossing (Farmington Canal Heritage Trail) at Darling Drive (Int. 004-211). There are low pedestrian crossings for this corridor. There are bus stops located along the corridor from Hoffman Auto to the Walmart Shopping Center (Int. 004-205) intersections. There is a weekday peak hour Avon-Canton Express bus through the corridor.

The corridor's functional use varies from time of day, day of week, and several subsystems of intersections for coordination. The corridor serves as a commuter route during the weekday mornings and again later in the afternoon. The vast number of commercial properties and driveways combined with the adjacent residential neighborhoods contribute to the motorist activity. Table 1 below shows further details of each signalized intersection throughout this corridor.

The corridor is divided into three Subsystems A, B, and C to meet the user needs and movement priorities (See Table 1 below). Each of the subsystems have common operating environments including roadway functionality, geographic surroundings, traffic signal phasing, motor vehicle volumes, buses, and pedestrian activity. Subsystem A prioritizes coordination to manage congestion between the intersections and improve flow. During the morning peak, Dale Road/Farmington Valley Mall is coordinated with the signals in Subsystem A, however, once the morning peak hours pass, the signal is in coordination with the Subsystem B signals. Subsystem B is an uncongested corridor that meets the users need for two-way progression during peak hours and the commercial operational environment. Subsystem C experiences congestion during peak hours, closely spaced intersections, and two-way progression for non-peak hours to improve flow. Late evening/night is uncongested with lower volume that is better suited for equitable green to reduce side street wait times by not providing preferential time for arterial coordination. In optimizing the traffic signal system timings, on West Main Street/East Main Street achieved better traffic flow in both directions that improved timing for local operational movements that meet all the user needs.

Figure 7: Avon/Simsbury, Route 44, Route 202, & Route 10 Location Map

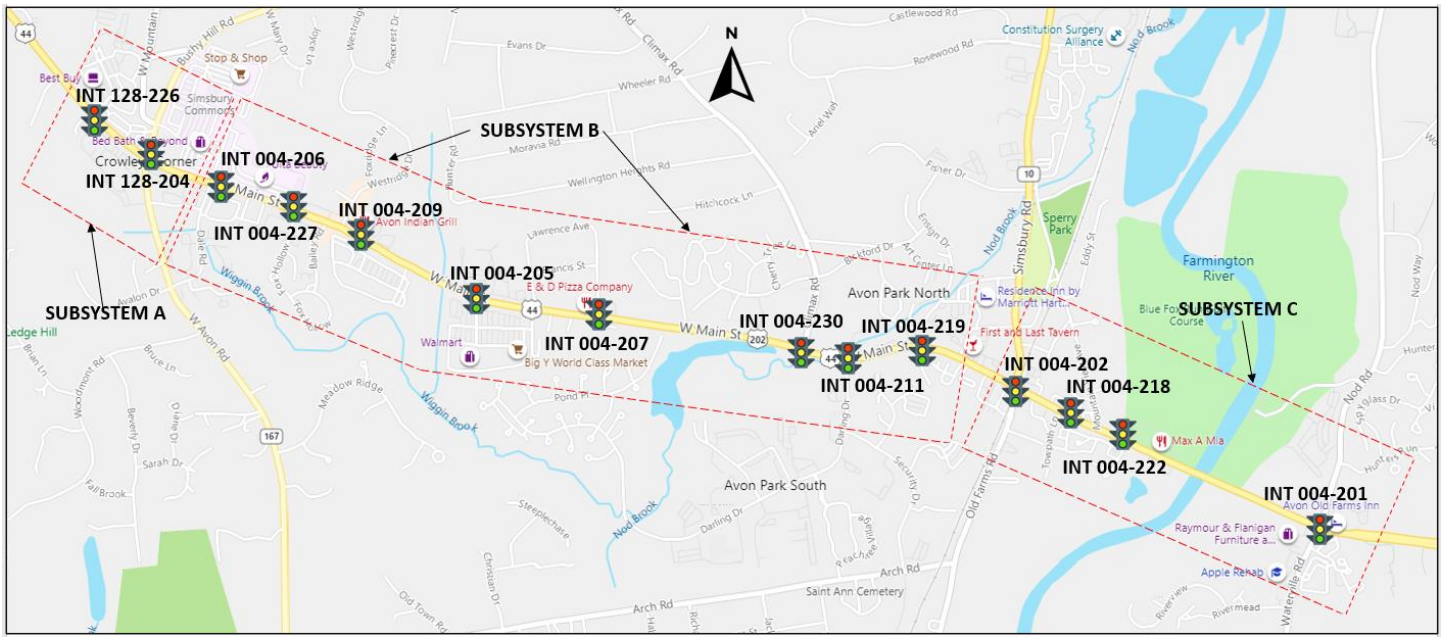


Table 1. Avon/Simsbury Details, Route 44, Route 202, & Route 10 (W. Main St./E. Main St.)

Avon/Simsbury Route 44, Route 202, & Route 10						
Intersection #	Subsystem	Location	Detection	Artery Detection	Field Communications	Controller
128-226	A	RTE 44 & 202 AT HOFFMAN AUTO	L	NONE	Copper Aerial	Naztec V41
128-204	A	RTE 44 & 202 AT RTE 167 (BUSHYHILL RD)	V, L	L	Copper Aerial	Naztec V41
004-206	B[1]	RTE 44 & 202 AT FARM VALLEY MALL	V, L	L	Copper Aerial	Naztec V41
004-227	B	RTE 44 & 202 AT CVS & FOX HOLLOW	V	NONE	Copper Aerial	Naztec V41
004-209	B	RTE 44 & 202 AT NOD BROOK MALL	V	NONE	Copper Aerial	Naztec V41
004-205	B	RTE 44 & 202 AT SHOP CNTR	L	NONE	Copper Aerial	Naztec V41
004-207	B	RTE 44 & 202 AT LAWRENCE AVENUE	V	NONE	Copper Aerial	Naztec V41
004-230	B	RTE 44 & 202 AT CLIMAX ROAD	V	NONE	Copper Aerial	Naztec V41
004-211	B	RTE 44 & 202 AT DARLING DRIVE	V	NONE	Copper Aerial	Naztec V41
004-219	B	RTE 44 & 202 AT ENSIGN DRIVE	V	NONE	Copper Aerial	Naztec V41
004-202	C	RTE 44 & 202 & RTE 10 AT OLD FARMS ROAD	V, L	L	Copper Aerial	Naztec V41
004-218	C	RTE 44 & 10 AT OLD AVON VILLAGE	V	NONE	Copper Aerial	Naztec V41
004-222	C	RTE 44 & 10 AT RIVERPARK	V	NONE	Copper Aerial	Naztec V41
004-201	C	RTE 44 & 10 AT NOD ROAD	L, M	L	Copper Aerial	Naztec V41
L = Loop, V = Video (Non recording), M = Microwave						

[1]Farmington Valley Mall is coordinated with Subsystem A during morning peak

Berlin, Route 372 (Farmington Avenue/Mill Street)

Route 372 (Farmington Avenue/Mill Street) corridor is an east/west minor corridor through the town of Berlin. It includes six (6) signalized intersections beginning at Route 71 (New Britain Road) (Int. 007-212) and ending at Webster Square Road (Int. 007-226). Figure 8 below shows the locations of each of the signals in the corridor. This corridor is 1.2 miles long, has one travel lane in each direction with no median, sidewalk exists along the westbound side of the corridor and in some areas of the eastbound side, and no bike lanes. The average two-way peak hour volumes are approximately 850, 950, and 1,200 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 40 mph. Route 372 is considered a diversion route for Route 9 when the highway experiences significant delays and queues.

The corridor users are predominantly motor vehicles. There are pedestrian crosswalks/indications provided at each of the traffic signals except at Massirio Drive (Int. 007-240). The intersections with pedestrian facilities provided operate as side street green where pedestrians cross the road with the side street traffic. A typical pedestrian head for side street green is green, yellow, and red indications. The pedestrian activity is considered intermittent for this corridor. The Berlin Train Station is located at Depot Road (Int. 007-247) and provides transportation to train users through central Connecticut and Massachusetts as well as connecting train routes to major east coast metropolitan areas. There are several bus stops located along the corridor with intermittent schedules.

The corridor's functional use varies from time of day, day of week. All the traffic signals are grouped as one coordinated system. The corridor serves as a commuter route during the weekday mornings and again later in the afternoon. The vast number of commercial properties and driveways combined with the adjacent residential dwellings and neighborhoods contribute to the motorist activity. Table 2 below shows further details of each signalized intersection throughout this corridor.

The corridor is uncongested with lower volume during non-peak hours that is better suited for equitable green to reduce wait times for side streets by not providing preferential time for arterial coordination. In optimizing the traffic signal system timings, Route 372 Berlin achieved better traffic flow in both directions with improved timing for local operational movements that meet all the user needs.

Figure 8: Berlin, Route 372 Location Map

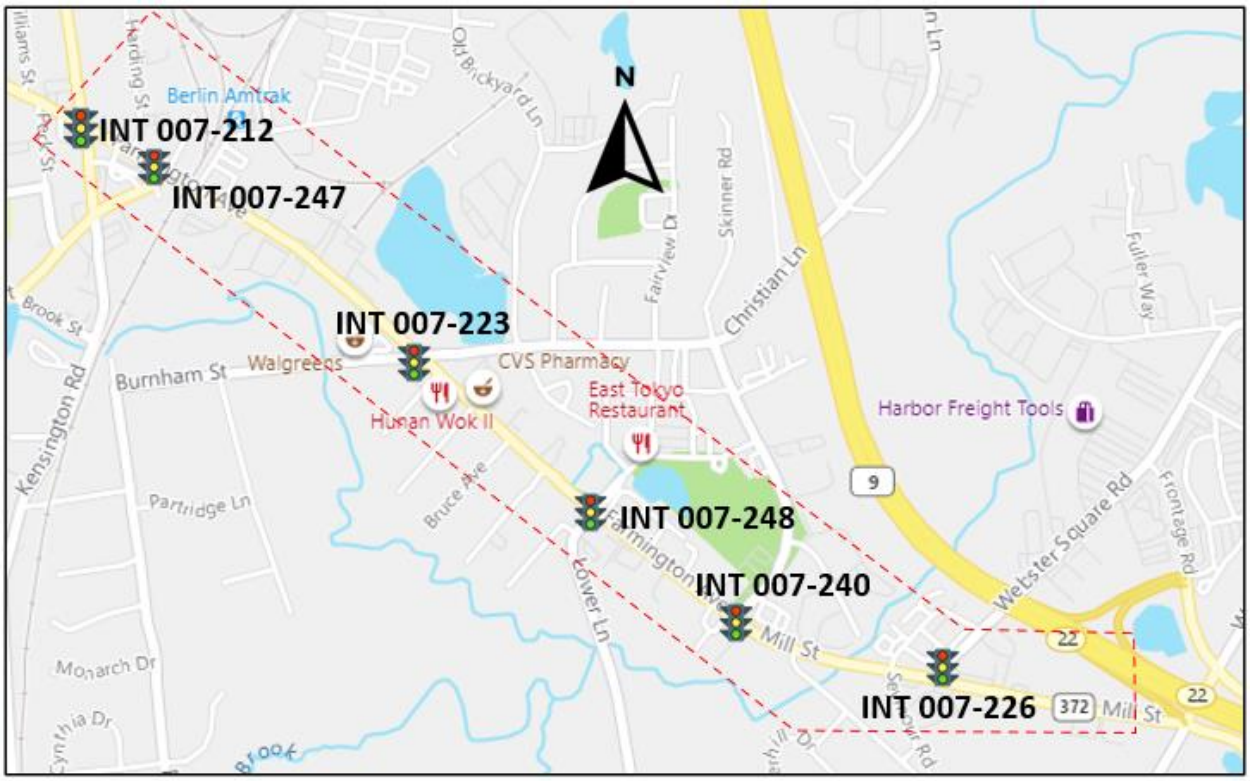


Table 2. Berlin Details, Route 372 (Farmington Avenue / Mill Street)

Berlin Route 372						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
007-212	A	RTE 372 AT ROUTE 71	L	NONE	Copper Aerial	Cubic V85
007-247	A	RTE 372 AT MAIN & DEPOT RD	L, M	NONE	Copper Aerial	Cubic V85
007-223	A	RTE 372 AT PORTERS PASS	L	L	Copper Aerial	Cubic V85
007-248	A	RTE 372 AT LOWER LANE	L	NONE	Copper Aerial	Cubic V85
007-240	A	RTE 372 AT MASSIRIO DRIVE	L	NONE	Copper Aerial	Cubic V85
007-226	A	RTE 372 AT WEBSTER SQUARE ROAD	L, V	NONE	Copper Aerial	Cubic V85
L = Loop, V = Video (Non-recording), M = Microwave						

Bloomfield, Route 218 (Cottage Grove Road)

Route 218 (Cottage Grove Road) corridor is an east/west principal corridor through the town of Bloomfield and is a significant commuter route. It includes eight (8) signalized intersections beginning at Cigna Way (Int. 011-224) and ending at Granby Street (Int. 011-233). See Figure 9 below for location map of the eight signalized intersections in this corridor. Cigna Way and Route 189 (Int. 011-218) are connected to the central systems to observe real time traffic operation and provide an efficient way to identify problems as they occur. Cigna Way and Route 189 are not coordinated with the signals to the east to better meet the user needs for all movements. The coordination corridor from Prospect Street (Int. 011-238) to Granby Street is approximately 1.5 miles long, has two travel lanes in each direction with a grass median, does not have sidewalks through most of the corridor, and no bike lanes. The average two-way peak hour volumes are approximately 1,950, 1,450, and 1,850 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 40 mph.

The corridor users are predominantly motor vehicles. All intersections have pedestrian facilities that operate as side street green where pedestrians cross the road with the side street traffic. A typical pedestrian head for side street green is green, yellow, and red indications. The pedestrian activity is considered intermittent for this corridor. There are several bus stops located along the corridor with intermittent schedules.

The corridor's functional use varies from time of day, day of week. The corridor is congested with moderate to heavy volumes and vehicle queues during peak hours. Off peak hours include periods that are suited for two-way progression to meet the commercial operational environment in the vicinity of Copaco Shopping Center. Late evening/night is uncongested with lower volume that is better suited for equitable green to reduce wait times on side streets by not providing preferential time for arterial coordination. The corridor serves key destination points to the west including Cigna, University of Hartford, and Bishops Corner in West Hartford. Table 3 below shows further details of each signalized intersection throughout this corridor. In optimizing the traffic signal system timings, Route 218 Bloomfield achieved better traffic flow in both directions with improved timing for local operational movements that meet all the user needs.

Figure 9: Bloomfield, Route 218 Location Map

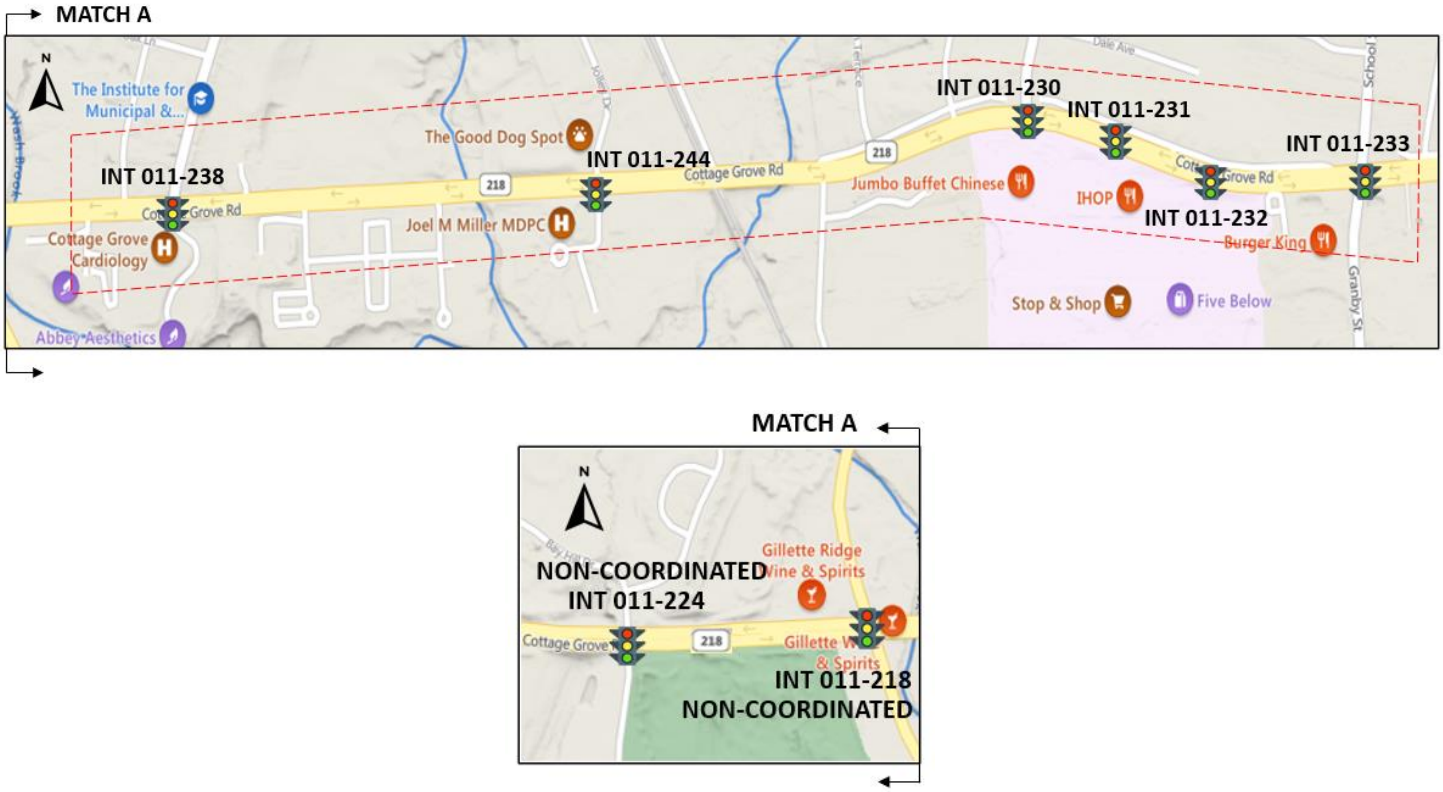


Table 3. Bloomfield Details, Route 218 (Cottage Grove Road)

Bloomfield Route 218						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
011-224	NONE	RTE 218 AT CIGNA	V, L	L	Radio	Cubic V85
011-218	NONE	RTE 218 AT ROUTE 189	V	V	Radio	Cubic V85
011-238	A	RTE 218 AT PROSPECT STREET	V	NONE	Copper Aerial	Cubic V85
011-244	A	RTE 218 AT NORTHWESTERN DRIVE	V	NONE	Copper Aerial	Cubic V85
011-230	A	RTE 218 AT TYLER STREET	V	NONE	Copper Aerial/Underground	Cubic V85
011-231	A	RTE 218 AT COPACO MAIN ENTRANCE	V	NONE	Copper Underground	Cubic V85
011-232	A	RTE 218 AT COPACO EAST ENTRANCE	V	NONE	Copper Underground	Cubic V85
011-233	A	RTE 218 AT GRANBY STREET	V	NONE	Copper Underground	Cubic V85
L=Loops, V=Video (Non-recording)						

East Hartford, Route 518 (Roberts Street)

Route 518 (Roberts Street) corridor is a north/south principal corridor in the town of East Hartford. It includes three (3) signalized intersections beginning at I-84 westbound ramps (Int. 042-235) and ending at Rentschler Field (Int. 042-222). See Figure 10 below for location map. Roberts Street is 0.5 miles long, has two travel lanes in each direction with no median, does not have sidewalks, no bike lanes, and no bus stops on Roberts Street. The intersection of Roberts Street and Rentschler Field includes sidewalks, pedestrian crosswalks, pedestrian walk and don't walk indications, and bus stops. The average two-way peak hour volumes are approximately 950, 850, and 1,300 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 35 mph. Route 518 is considered a diversion route for I-84 when the highway experiences significant delays and queues.

The primary sources of traffic on this corridor originates from I-84, Pratt & Whitney, Rentschler Field, and Cabela's Sporting Goods. Table 4 below shows further details of each signalized intersection throughout this corridor. The corridor is uncongested that is best suited for two-way progression during peak hours between the I-84 Ramps. All the traffic signals operate non-coordinated all hours of the day to meet the user needs.

Figure 10: East Hartford, Route 518 Location Map

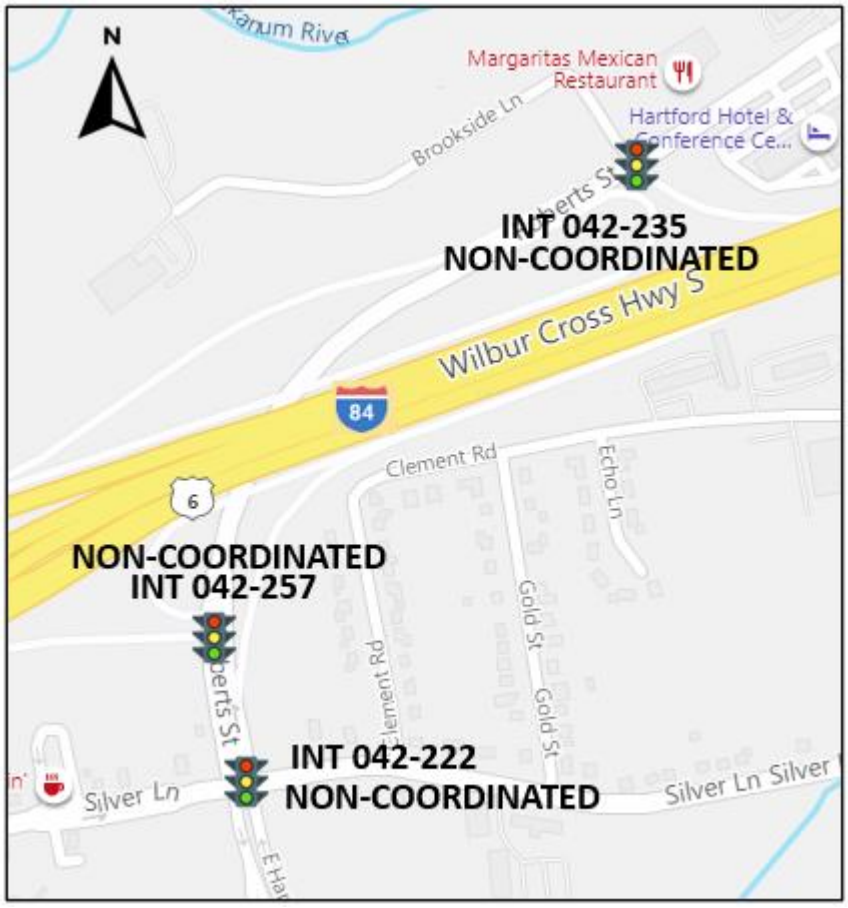


Table 4. East Hartford Details, Route 518 (Roberts Street)

East Hartford Route 518						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
042-222	NONE	RTE 518 @ RENTSCHLERS & SILVER LANE	V	NONE	Copper Underground	Naztec V61
042-257	NONE	RTE 518 @ I-84 EB RAMPS	V	V	Copper Underground	Naztec V61
042-235	NONE	RTE 518 @ I-84 WB RAMPS	V	NONE	Copper Underground	Naztec V61
V = Video (Non recording)						

Enfield, Route 5 North Section (Enfield Street)

Route 5 (Enfield Street) corridor is a north/south principal corridor through the town of Enfield. It includes ten (10) signalized intersections beginning at Frew Terrace (Int. 048-204) and ending at I-91 NB ramps (Int. 048-226). See Figure 11 below for location map. This corridor is 2.3 miles long, has two travel lanes in each direction with no median, sidewalks exist through most of the corridor on the southbound side, and no bike lanes. The average two-way peak hour volumes are approximately 800, 700, and 1,050 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 35 mph. Route 5 is considered a diversion route for I-91 when the highway experiences significant delays and queues.

The corridor's functional use varies from time of day, day of week. The corridor serves as a local commuter route during the weekday mornings and again later in the afternoon. The corridor is a mix use area of mostly small businesses and residential neighborhoods. The I-91 North and South on/off ramps (Int. 048-247) along with the limited access highway section of Route 190 provide connectivity to other areas of Enfield and the State.

The corridor users are predominantly motor vehicles. There are pedestrian crosswalks with mix of walk/don't walk indications and red, yellow, green indications provided along the corridor. The pedestrian activity is considered intermittent for this corridor except for the intersection of Route 220 and N. Main Street (Int. 048-206) where a moderate amount of pedestrian activity occurs. There are several bus stops located along the corridor with intermittent schedules.

The corridor is divided with two subsystems to meet the user needs. Table 5 below shows further details of each signalized intersection throughout this corridor. Each of the subsystems have common operating environments including roadway functionality, geographic surroundings, traffic signal phasing, motor vehicle volumes, buses, and pedestrian activity. Subsystem A has three signalized intersections that serve Route 5 at Route 190 (Int. 048-203 & 048-204) and Route 5 at High Street (Int. 048-205). The intersections are in proximity with similar phasing and volume where traffic flow and reduced wait times meet the user needs and movement priorities. However, progression is provided during peak hours for users traveling through in both intersections. Subsystem B from High Street to Brainard Road (Int. 048-209) is an uncongested corridor that meets the user needs for two-way progression during peak hours. The traffic signal at Route 5 and Route 220 (Int. 048-206) along with the two traffic signals on Route 5 at I-91 NB ramps and I-91 SB ramps (Int. 048-247 & 048-226) near the Massachusetts State line are non-coordinated with other signals in the corridor. The intersections are uncongested where the turning movement priorities are more important than progression between the intersections. All the subsystems late evening/night are uncongested with lower volume that is better suited for equitable green to reduce side street wait times by not providing preferential time for arterial coordination. In optimizing the traffic signal system timings, Route 5 Enfield achieved better traffic flow in both directions that improved timing for local operational movements to meet all the user needs.

Figure 11: Enfield, Route 5 North Location Map

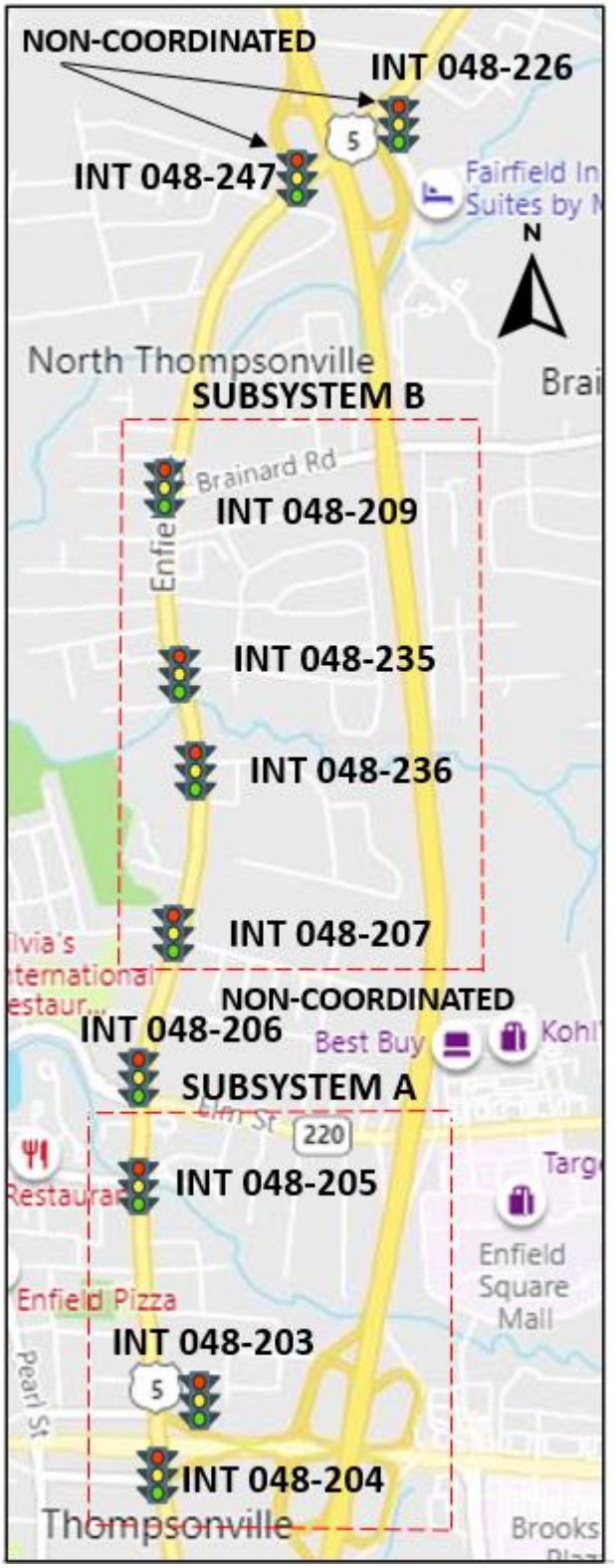


Table 5. Enfield Details, Route 5 North Section (Enfield Street)

Enfield Route 5 North Section						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
048-204	A	RTE 5 AT FREW TERRACE	L	NONE	Copper Aerial	Naztec V41
048-203	A	RTE 5 AT FRANKLIN STREET	V	NONE	Copper Aerial	Naztec V41
048-205	A	RTE 5 AT HIGH STREET	V	V	Copper Aerial	Naztec V41
048-206	NONE	RTE 5 AT RTE 220 (ELM STREET)	V	V	Copper Aerial	Naztec V41
048-207	B	RTE 5 AT ALDEN & BELMONT AVENUE	V	V	Copper Aerial	Naztec V41
048-236	B	RTE 5 AT PARKER STREET	V	NONE	Copper Aerial	Naztec V41
048-235	B	RTE 5 AT MONTANO ROAD	V	NONE	Copper Aerial	Naztec V41
048-209	B	RTE 5 AT BRAINARD & SUNSET DRIVE	V	V	Copper Aerial	Naztec V41
048-247	NONE	RTE 5 AT I-91 SB RAMPS	V	NONE	Copper Aerial	Naztec V41
048-226	NONE	RTE 5 AT I-91 NB RAMPS	V	NONE	Copper Aerial	Naztec V41
L = Loop, V = Video (Non-recording)						

Glastonbury, Route 94 (Hebron Avenue)

Route 94 (Hebron Avenue) corridor is an east/west principal corridor through the town of Glastonbury. It includes five (5) signalized intersections broken into two Subsystems A and B. Subsystem A begins at the Route 2 EB Off Ramp (Int. 053-211) and spans to Route 2 EB On Ramp (Int. 053-225). The Western Boulevard (Int. 053-210) intersection will remain non-coordinated. Subsystem B begins at Oakwood Drive (Int. 053-220) and spans to Eastern Boulevard (Int. 053-213). See Figure 12 below for location map. Each of the subsystems have common operating environments including roadway functionality, geographic surroundings, traffic signal phasing, motor vehicle volumes, buses, and pedestrian activity. This corridor is 0.8 miles long, has two travel lanes in each direction with no median, no sidewalks, and no bike lanes. The average two-way peak hour volumes are approximately 1,600, 1,300, and 1,850 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limits are 35 mph west of Western Boulevard and 45 mph east of Western Boulevard. Route 94 is considered a diversion route for Route 2 when the highway experiences significant delays and queues.

The corridor's functional use varies from time of day, day of week. Table 6 below shows further details of each signalized intersection throughout this corridor. The corridor serves as a commuter route during the weekday mornings and again later in the afternoon. Both the subsystems late evening/night are uncongested with lower volume that is better suited for equitable green to reduce side street wait times by not providing preferential time for arterial coordination.

The corridor users are predominantly motor vehicles. There are no pedestrian facilities throughout the corridor. There are a few bus stops located in the vicinity of Eastern Boulevard with intermittent schedules. Travel to and through the corridor are equally as important to the user needs depending on the time of day and day of week. In optimizing the traffic signal system timings, Route 94 Glastonbury achieved better traffic flow in both directions that improved timing for local operational movements to meet all the user needs.

Figure 12: Glastonbury, Route 94 Location Map

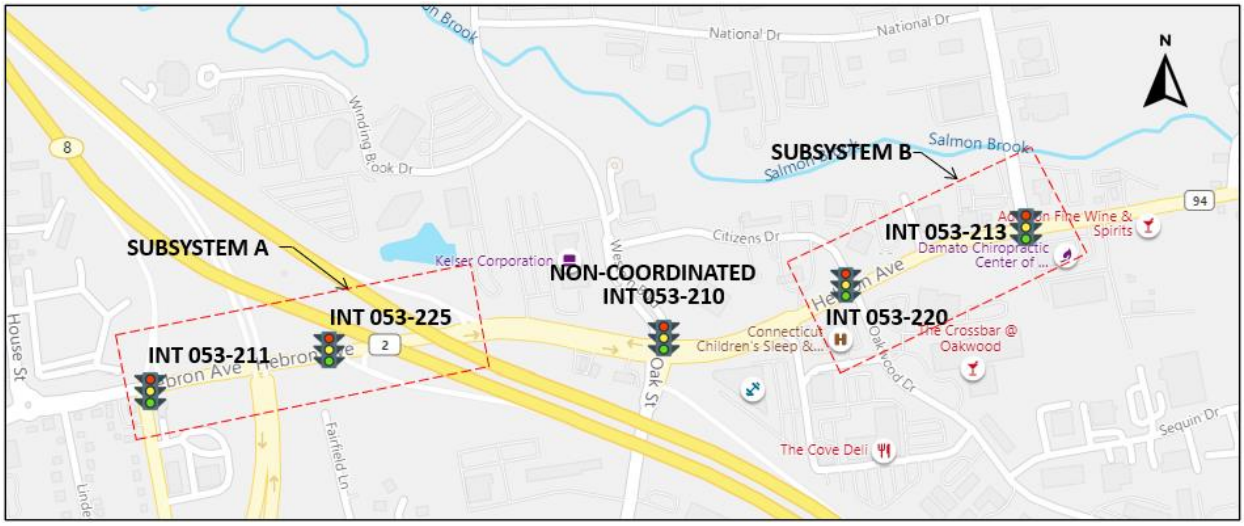


Table 6. Glastonbury Details, Route 94 (Hebron Avenue)

Glastonbury Route 94						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
053-211	A	RTE 94 AT RT 2 EB OFF RAMP	V	NONE	Copper Underground	Cubic V85
053-225	A	RTE 94 AT RT 2 EB ON RAMP	L	NONE	Copper Underground	Cubic V85
053-210	NONE	RTE 94 AT WESTERN BOULEVARD	L	L	Copper Underground	Cubic V85
053-220	B	RTE 94 AT OAKWOOD DRIVE	L	NONE	Copper Underground	Cubic V85
053-213	B	RTE 94 AT EASTERN BOULEVARD	L	NONE	Copper Underground	Cubic V85
L = Loop, V = Video (Non-recording)						

Hartford, Route 44 (Albany Avenue)

Route 44 (Albany Avenue) corridor is an east/west corridor through the northwest portion of Hartford. The corridor includes eighteen (18) signalized intersections beginning at Prospect Avenue (Int. 063-246) at the West Hartford town line heading east ending at Belden Street (Int. 063-215). See Figure 13 below for location map. This corridor is approximately 2.0 miles long. The corridor is separated into two distinct geographic areas at the Hartford to Windsor rail line. West of the rail line, the corridor serves as residential/commuter with two through lanes in each direction. East of the rail line, known as Upper Albany, the corridor transitions from two through lanes in each direction to one through lane in each direction at the signalized intersection of Homestead Avenue/Westbourne Parkway (Int. 063-205). The Upper Albany corridor was reconstructed between 2019 and 2021. The reconstruction included the limits between east of Homestead/Westbourne intersection to Garden Street (Int. 063-211). The reconstruction included traffic signal equipment upgrades, illumination upgrades, vehicle turn lanes, reconstruction of sidewalk and pedestrian crossing safety and ADA improvements, shared vehicle through lane/bike lane designation, bus stop, and on-street parking designation. The Upper Albany area experiences significant pedestrian and public transportation users. The average two-way peak hour volumes are approximately 675, 750, and 900 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 30 mph. Table 7 below shows further details of each signalized intersection throughout this corridor.

The corridor users include pedestrians, bicycles, bus, and motor vehicles. Pedestrian walk/don't walk indications are provided at all intersections except Belden Street, Mark Twain Drive (Int. 063-204), and Prospect Avenue. These locations operate as side street green where pedestrians cross the road with the side street traffic. The pedestrian activity is considered intermittent from Prospect Avenue through Mark Twain Drive. Pedestrian activity is considered heavy from Homestead/Westbourne to Belden Street. There are numerous bus stops located along the entire corridor with heavy schedules and considerable number of users in the Upper Albany area.

The corridor is divided into three Subsystems A, B, and C for coordination timing. Table 7 below shows further details of each signalized intersection throughout this corridor. Each of the subsystems have common operating environments including roadway functionality, geographic surroundings, traffic signal phasing, motor vehicle volumes, buses, and pedestrian activity. Subsystem A is from east of Prospect Avenue to Homestead/Westbourne. Homestead/Westbourne is included with the traffic signals to the west due to similarities in traffic patterns and user needs. Subsystem B includes the reconstruction limits from Homestead/Westbourne to Garden Street due to the similarities mainly with traffic signal phasing, pedestrian activity, bus routes, and environmental accommodations. Subsystem C intersections were not included in the reconstruction effort since the traffic signal phasing and timing needs are different than Subsystem B.

In optimizing the Route 44 Hartford traffic signal timing plans, the objective was to reduce queues on Route 44 for closely spaced intersections to lower occurrences of queue spillback to bottle neck intersections in Subsystem A and B, improve timing using intersection throughput for approaches with excess demand for Subsystems A and B, and good traffic flow in both directions with improved timing for local operational movements during uncongested time periods for all subsystems. All the subsystems late evening/night are uncongested with lower volume that is better suited for equitable green to reduce side street wait times by not providing preferential time for arterial coordination.

Figure 13: Hartford, Route 44 Location Map

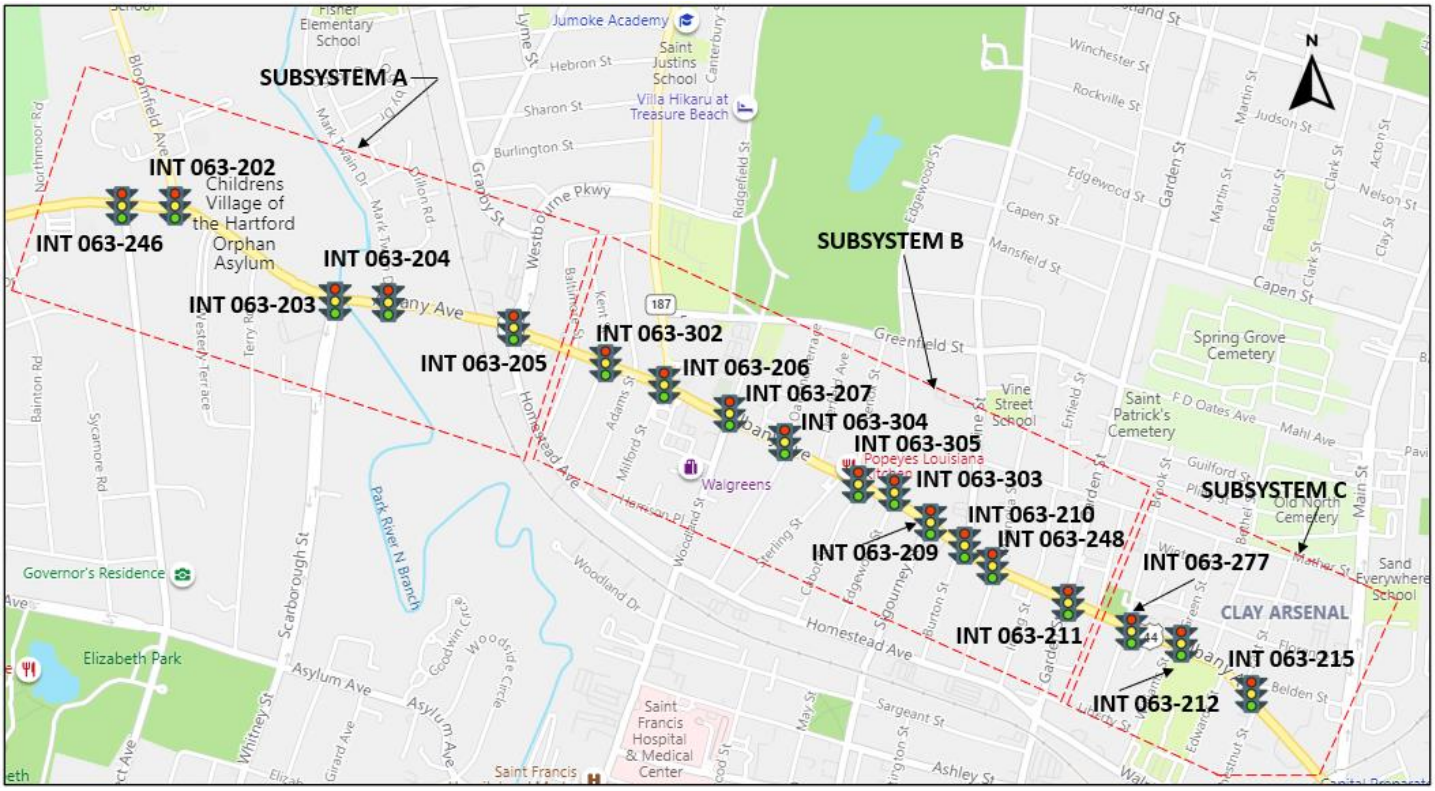


Table 7. Hartford Details Route 44 (Albany Avenue)

Hartford Route 44 Albany Avenue						
Intersection #	Subsystem	Location	Detection	Artery Detection	Field Communications	Controller
063-246	A	ROUTE 44 AT PROSPECT AVENUE	L	NONE	Copper Underground	Naztec V61
063-202	A	ROUTE 44 AT ROUTE 189	V, L	L	Copper Underground	Naztec V61
063-203	A	ROUTE 44 AT SCARBOROUGH ST	V	NONE	Copper Underground	Naztec V61
063-204	A	ROUTE 44 AT MARK TWAIN DR	V	NONE	Copper Underground	Naztec V61
063-205	A	ROUTE 44 AT HOMESTEAD AVE	V	NONE	Copper Underground	Naztec V61
063-302	B	ROUTE 44 AT KENT STREET	V	NONE	Copper Underground	Naztec V61
063-206	B	ROUTE 44 AT ROUTE 187	V	NONE	Copper Underground	Naztec V61
063-207	B	ROUTE 44 AT WOODLAND ST	V	NONE	Copper Underground	Naztec V61
063-304	B	ROUTE 44 AT OAKLAND TERRACE	V	NONE	Copper Underground	Naztec V61
063-305	B	ROUTE 44 AT LENOX & STERLING	V	NONE	Copper Underground	Naztec V61
063-303	B	ROUTE 44 AT EDGEWOOD ST	V	NONE	Copper Underground	Naztec V61
063-209	B	ROUTE 44 AT SIGOURNEY ST	V	NONE	Copper Underground	Naztec V61
063-210	B	ROUTE 44 AT BURTON & VINE ST	V	NONE	Copper Underground	Naztec V61
063-248	B	ROUTE 44 AT MAGNOLIA ST	V	NONE	Copper Underground	Naztec V61
063-211	B	ROUTE 44 AT GARDEN STREET	V	NONE	Copper Underground	Naztec V61
063-212	C	ROUTE 44 AT BROOK STREET	L	NONE	Copper Underground	Naztec V61
063-277	C	ROUTE 44 AT WILLIAMS & GREEN STREET	L	NONE	Copper Underground	Naztec V61
063-215	C	ROUTE 44 AT BELDEN STREET	L	NONE	Copper Underground	Naztec V61
L = Loops, V = Video (Non-recording)						

Plainville, Route 372 (New Britain Avenue)

Route 372 (New Britain Avenue) corridor is an east/west principal corridor through the town of Plainville and is one of the major commuter routes within the town. It includes five (5) signalized intersections beginning at Hooker Street (Int. 109-217) and ending at Crooked Street (Int. 109-224). See Figure 14 below for location map. This corridor is 1.5 miles long, has two travel lanes in each direction with no median, sidewalks exist on the westbound side of the road through most of the corridor, and no bike lanes. The average two-way peak hour volumes are approximately 1,050, 1,300, and 1,600 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limits are 35 mph west of Cooke St./Route 72 ramps (Int. 109-220) and 40 mph east of the Route 72 ramps. Route 372 is considered a diversion route for I-84 and Route 72 when the highways experience significant delays and queues.

The corridor's functional use varies from time of day, day of week. The five signalized intersections are broken into two subsystems. Each of the subsystems have common operating environments including roadway functionality, geographic surroundings, traffic signal phasing, motor vehicle volumes, buses, and pedestrian activity. Subsystem A begins at the Crooked Street and spans to Metacomet Road (Int. 109-209). The Route 72 Westbound Ramps will remain non-coordinated. Subsystem B is the intersection at Hooker Street. It is anticipated Hooker Street will be coordinated with Route 10 and Route 372 intersections in the future. The corridor serves as a major commuter route during the weekday mornings and again later in the afternoon and as a significant commercial area in the evenings and weekends. Table 8 below shows further details of each signalized intersection throughout this corridor.

The corridor users are predominantly motor vehicles. There is pedestrian walk/ don't walk indications at Cooke Street/Route 72 Ramps and Metacomet Road. The pedestrian activity is considered low for this corridor except for the Crooked Street and Route 72 intersection that experiences moderate pedestrian activity. There are transit bus stops located along the entire corridor. All the subsystems late evening/night are uncongested with lower volume that is better suited for equitable green to reduce side street wait times by not providing preferential time for arterial coordination. In optimizing the traffic signal system timings, Route 372 Plainville achieved better traffic flow in both directions that improved timing for local operational movements to meet all the user needs.

Figure 14: Plainville, Route 372 Location Map

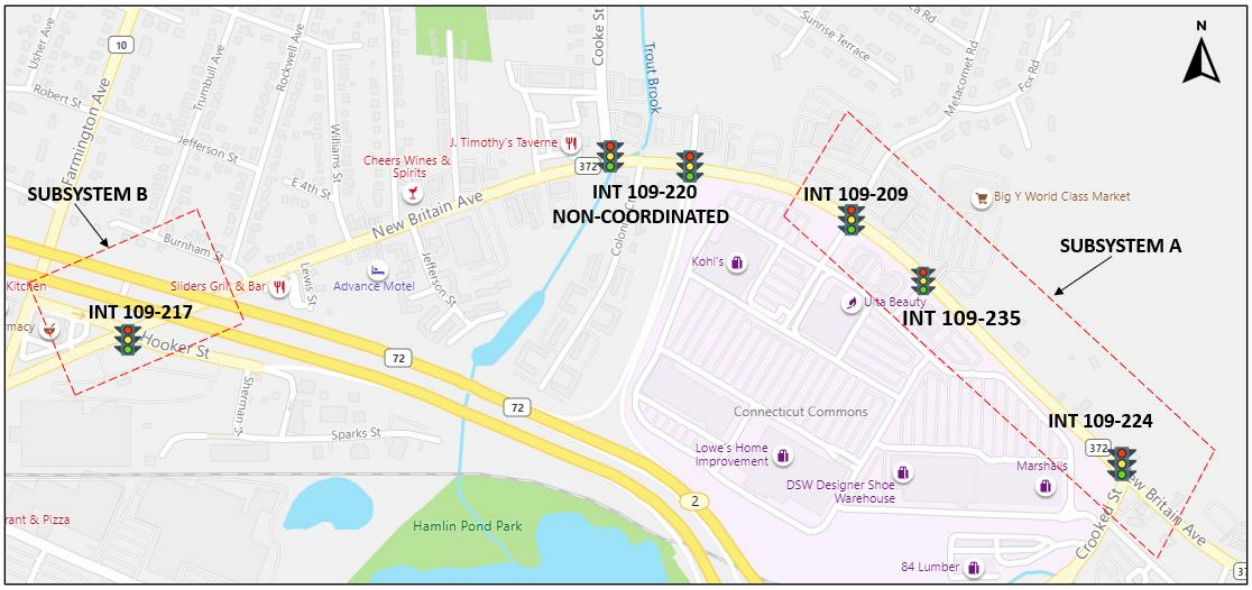


Table 8. Plainville Details, Route 372 (New Britain Avenue)

Plainville Route 372						
Intersection #	Subsystem	Location	Detection	Artery Detection	Communications	Controller
109-217	B	RTE 372 AT HOOKER ST.	L	L	Copper Underground	Naztec V41
109-220	NONE	RTE 372 AT COOKE ST.	L	NONE	Copper Aerial/Underground	Naztec V41
109-209	A	RTE 372 AT METACOMET	L	NONE	Copper Aerial	Naztec V41
109-235	A	RTE 372 AT BIG "Y"	L	NONE	Copper Aerial	Naztec V41
109-224	A	RTE 372 AT CROOKED ST.	L	NONE	Copper Aerial	Naztec V41
L = Loop						

Tolland, Route 195 (Merrow Road)

Route 195 (Merrow Road) corridor is a north/south principal corridor through the town of Tolland. It includes four (4) signalized intersections beginning at I-84 WB ramps (Int. 142-204) and ending at Goose Lane (Int. 142-205). See Figure 15 below for location map. This corridor is 0.6 miles long, has two travel lanes in each direction with a median between Fieldstone Commons (Int. 142-207) and Goose Lane, sidewalk exists on the southbound side of the corridor, no bike lanes, and no bus stops. Average two-way peak hour volumes are approximately 1,725, 1,175, and 2,350 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 35 mph. Route 195 is considered a diversion route for I-84 when the highway experiences significant delays and queues.

The primary source of traffic on this corridor originates from I-84. It also provides access to numerous commercial retail establishments between the I-84 Eastbound Ramps (Int. 142-201) and Goose Lane. Table 9 below shows further details of each signalized intersection throughout this corridor.

The corridor users are predominantly motor vehicles. There is a walk/ don't walk pedestrian crossing at Goose Lane to cross Route 195. The pedestrian activity is considered low for this corridor. The corridor experiences significant volume variations by the special events at the University of Connecticut, Storrs Campus. The subsystem late evening/night is uncongested with lower volume that is better suited for equitable green to reduce side street wait times by not providing preferential time for arterial coordination. In optimizing the traffic signal system timings, Route 195 Tolland achieved better traffic flow in both directions that improved timing for local operational movements to meet all the user needs.

Figure 15: Tolland, Route 195 Location Map

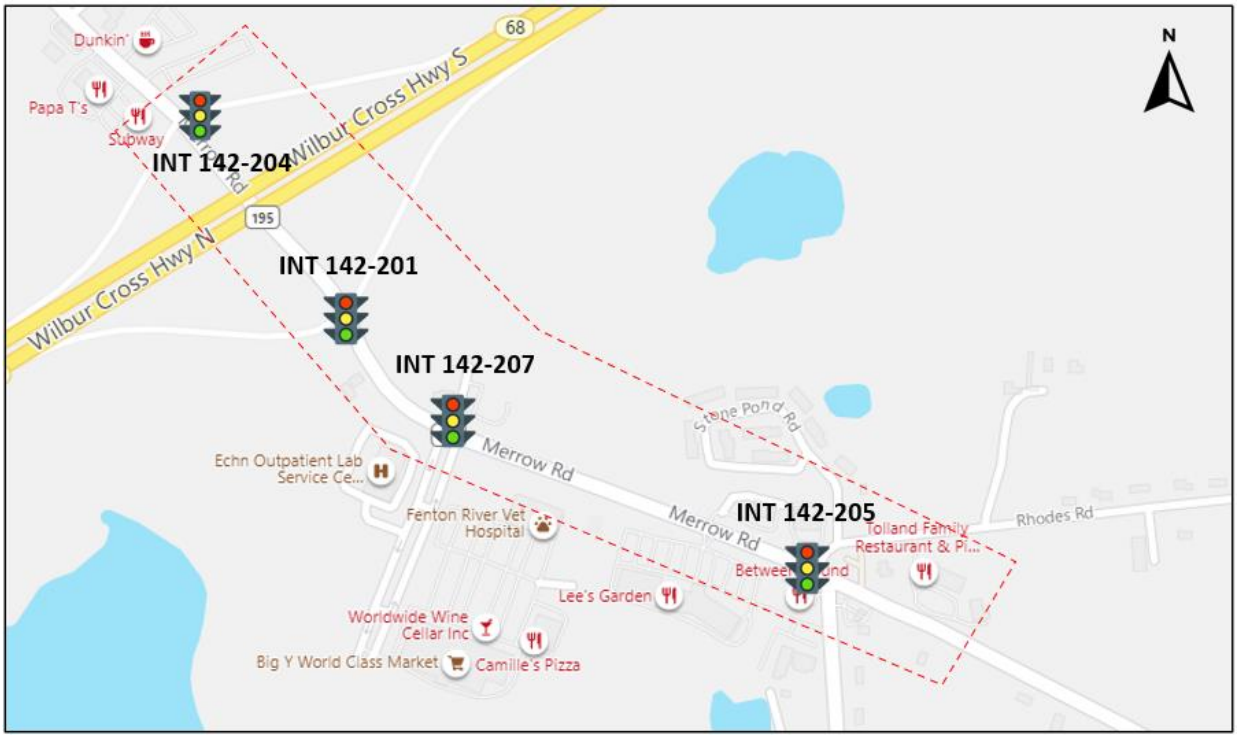


Table 9. Tolland Details, Route 195 (Merrow Road)

Tolland Route 195						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
142-204	A	RTE 195 AT I-84 WB RAMPS	V	V	Copper Underground	Naztec V41
142-201	A	RTE 195 AT I-84 EB RAMPS	V	V	Copper Underground	Naztec V41
142-207	A	RTE 195 AT FIELD STONE	V	V	Copper Underground	Naztec V41
142-205	A*	RTE 195 AT GOOSE LANE	V	V	Copper Underground	Naztec V41
L = Loop, V=Video (Non-recording)						

*Goose Lane operates non-coordinated all times except afternoon peak Monday Through Friday.

Vernon, Route 83 (Talcottville Road)

Route 83 (Talcottville Road) corridor is a north/south principal corridor through the town of Vernon. It includes seven (7) signalized intersections beginning at Dobson Road (Int. 146-209) and ending at I-84 HOV Off Ramp (Int. 146-225). See Figure 16 below for location map. This corridor is 0.7 miles long, has two travel lanes in each direction with no median, sidewalks are present through most of the southbound side of the corridor, no bike lanes, and a bus stop located on the northbound side south of Kelly Road (Int. 146-228). The average two-way peak hour volumes are approximately 1,475, 1,875, and 1,950 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 35 mph. Route 83 is considered a diversion route for I-84 when the highway experiences significant delays and queues.

The corridor's functional use varies from time of day, day of week. I-84 Exits 64 & 65 combined with the dense commercial development increases the need to travel to the area than through the area. However, travel to and through the corridor are equally as important to the user needs depending on the time of day and day or week. Table 10 below shows further details of each signalized intersection throughout this corridor. The corridor users are predominantly motor vehicles. There are walk/don't walk indications at Green Circle Road (Int. 146-203), Pitkin Road (Int. 146-220), and Dobson Road. The subsystem late evening/night is uncongested with lower volume that is better suited for equitable green to reduce side street wait times by not providing preferential time for arterial coordination. In optimizing the traffic signal system timings, Route 83 Vernon achieved better traffic flow in both directions that improved timing for local operational movements to meet all the user needs.

Figure 16: Vernon, Route 83 Location Map

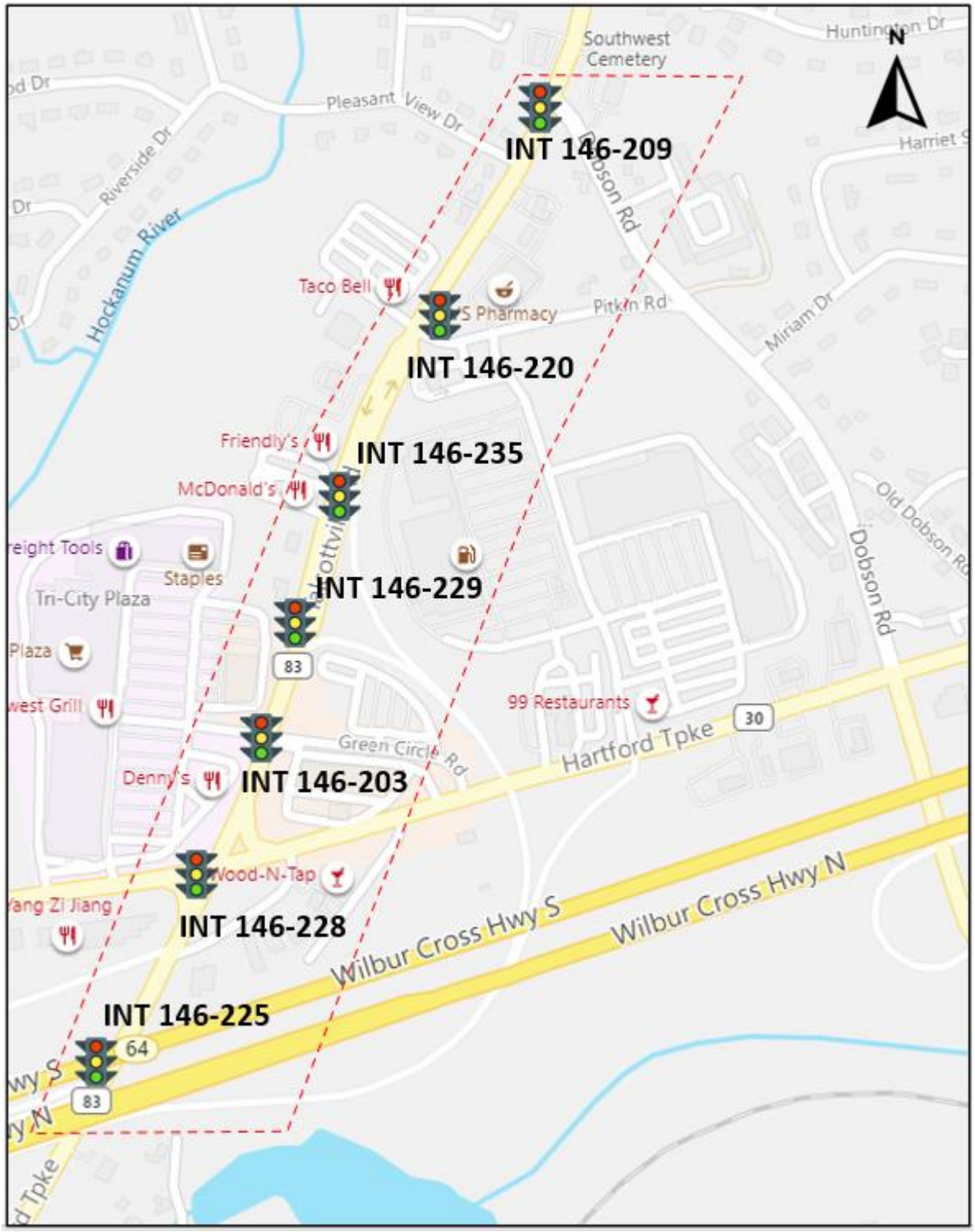


Table 10. Vernon Details, Route 83 (Talcottville Road)

Vernon Route 83						
Intersection #	Subsystem	Location	Detection	Artery Detection	Field Communications	Controller
146-209	A	RTE 83 AT DOBSON ROAD	L	NONE	Copper Underground	Naztec V41
146-220	A	RTE 83 AT PITKIN ROAD	L, V	NONE	Copper	Naztec V41
146-235	A	RTE 83 AT I-84 EB OFF RAMP NORTH JUNCTION	L,	NONE	Copper Underground	Naztec V41
146-229	A	RTE 83 AT I-84 EB OFF RAMP SOUTH JUNCTION	L	NONE	Copper Underground	Naztec V41
146-203	A	RTE 83 AT GREEN CIRCLE DRIVE	V	NONE	Copper Underground	Naztec V41
146-228	A	RTE 83 AT KELLY ROAD	L	L	Copper Underground	Naztec V41
146-225	A	RTE 83 AT HOV RAMP	V	NONE	Copper Underground	Naztec V41
L = Loop, V = Video (Non-recording)						

Wethersfield, Route 99 (Silas Deane Highway)

Route 99 (Silas Deane Highway) corridor is a north/south minor corridor through Wethersfield. It includes eight (8) signalized intersections beginning at Route 3 (Int. 159-203) and ending at Route 314 (Int. 159-219). See Figure 17 below for location map. This corridor is 3.2 miles long, has two travel lanes in each direction with no median, sidewalks exist on both sides of the corridor, and no bike lanes. The average two-way (Northbound and Southbound) peak hour volumes are approximately 2,150, 1,500, and 2,150 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 35 mph. Route 99 is considered a diversion route for I-91 when the highway experiences significant delays and queues.

The corridor users are predominantly motor vehicles. There are pedestrian crosswalks/indications (walk/don't walk) provided at each intersection. The pedestrian activity is considered moderate for this corridor. The pedestrian activity at the Route 3, Route 314, and Route 175 (Int. 159-222) can be heavy. There are bus stops located along the corridor with low to moderate schedules. Table 11 below shows further details of each signalized intersection throughout this corridor.

The corridor is divided into two Subsystems A and B for coordination timing. Each of the subsystems have common operating environments including roadway functionality, geographic surroundings, traffic signal phasing, motor vehicle volumes, and bus and pedestrian activity. Subsystem A is from Cumberland Avenue (Int. 159-243) to Beaver Road (Int. 159-221). Route 314 is not coordinated due to the heavy pedestrian activity combined with the heavier motor vehicle volume from Route 314 Eastbound. The user activity prevents coordinating Route 314 with the intersections to the south and meet all user needs. Subsystem B includes Route 3 and Route 175. The corridor is uncongested with lower volume during non-peak and evening hours that is better suited for equitable green to reduce wait times for side streets by not providing preferential time for arterial coordination. In optimizing the traffic signal system timings, Route 99 in Wethersfield achieved better traffic flow in both directions that improved timing for local operational movements to meet all the user needs.

Figure 17: Wethersfield, Route 99 Location Map

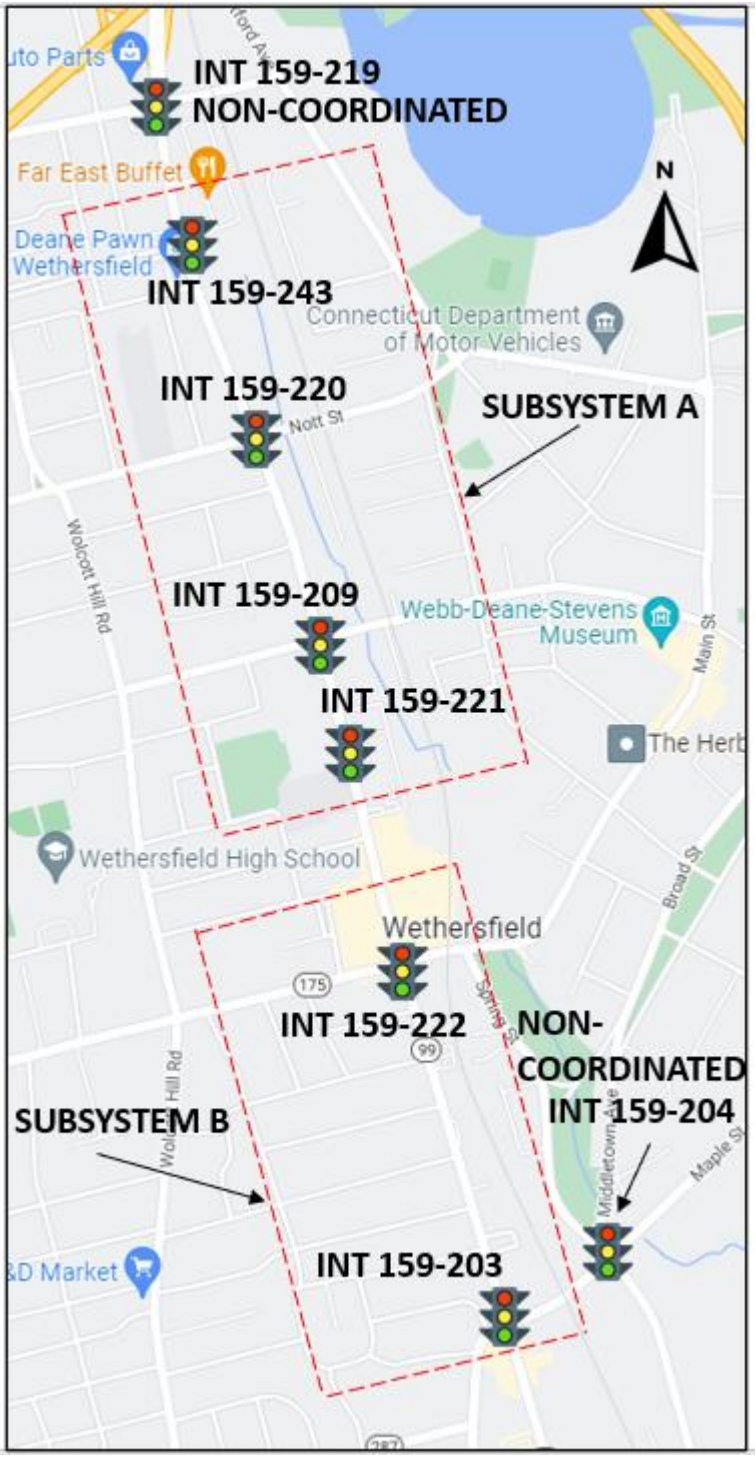


Table 11. Wethersfield Details, Route 99 (Silas Deane Highway)

Wethersfield Route 99						
Intersection #	Subsystem	Location	Detection	Artery Detection	Field Communications	Controller
159-219	NONE	RTE 99 AT RTE. 314 (JORDAN)	V	V	Copper Aerial	Naztec V61
159-243	A	RTE 99 AT CUMBERLAND AVE	V	NONE	Copper Aerial	Naztec V61
159-220	A	RTE 99 AT S.R. 422 (NOTT ST.)	V	NONE	Copper Aerial	Naztec V61
159-209	A	RTE 99 AT CHURCH STREET	L	NONE	Copper Aerial	Naztec V61
159-221	A	RTE 99 AT BEAVER ROAD	L	NONE	Copper Aerial	Naztec V61
159-222	B	RTE 99 AT RTE 175 (WELLS RD)	L	NONE	Copper Aerial	Cubic V85
159-203	B	RTE 99 AT RTE 3 (MAPLE ST)	L, V	V	Copper Aerial	Naztec V61
159-204	NONE	RTE 3 AT MIDDLETOWN RD	L	L	Copper Aerial	Cubic V85
L = Loop, V = Video (Non-recording)						

Windsor, Route 159 (Windsor Avenue)

Route 159 (Windsor Avenue) corridor is a north/south minor corridor through the town of Windsor. It includes sixteen (16) signalized intersections broken into two Subsystems A and B. Each of the subsystems have common operating environments including roadway functionality, geographic surroundings, traffic signal phasing, motor vehicle volumes, buses, and pedestrian activity. Subsystem A begins at I-91 SB ramps (Int. 164-229) and spans eight (8) signalized intersections to Shopping Center North driveway (Int. 164-222). Subsystem B begins at Rood Avenue (Int. 164-223) and spans seven (7) signalized intersections to Mack Street (Int. 164-244). Route 218 at Deerfield Road (Int. 164-227) is not coordinated to meet user needs. See Figure 18 below for location map and Table 12 for details of each signalized intersection throughout this corridor. The corridor is approximately 4.0 miles long. Subsystem A corridor travel lane configuration changes from four lane divided corridor with median at the I-91 SB Ramp to two lane divided corridor with median at Meadow Road (Int. 164-214). Subsystem A returns to a four-lane divided corridor with median starting at intersection of Route 159 and E. Wolcott Avenue (Int. 164-219). Subsystem B is a four-lane divided corridor with median from Rood Avenue to Maple Avenue (Int. 164-211). From Maple Avenue to Route 75 (Int. 164-234) the corridor does not have a median but continues to operate as four lanes. Sidewalks are present throughout the corridor with no designated bike lanes. There is a significant amount of bus stops and bus routes along the corridor. The average two-way peak hour volumes are approximately 1,400, 700, and 1,400 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limits are 30 mph north of Remington Road and 35 mph south of Remington Road. Route 159 is considered a diversion route for I-91 when the highway experiences significant delays and queues.

The corridor's functional use varies throughout the corridor limits. South of the Route 218 intersection (Int. 164-220) to the I-91 Southbound Ramps is more residential with a few small businesses except for the Meadow Road area that includes a large shopping plaza. The area from Route 218 north to the Windsor Shops North Drive has significant commercial businesses. The corridor's functional use from the Windsor Shop North Drive to Batchelder Road (Int. 164-233) is residential. Batchelder Road north to Route 305 (Int. 164-255) in the center of Windsor has significant commercial activity.

The corridor users are equally significant with the pedestrian, bus, and motor vehicles. There are pedestrian crosswalks/indications (walk/don't walk) provided at 10 of the 16 intersections. The pedestrian activity is considered moderate in this corridor with many pedestrian crossings in the center of Windsor. The corridor is uncongested with lower volume during non-peak and evening hours that is better suited for equitable green to reduce wait times for side streets by not providing preferential time for arterial coordination. In optimizing the traffic signal system timings on Route 159 in Windsor achieved better traffic flow in both directions that improved timing for local operational movements to meet all the user needs.

Figure 18: Windsor, Route 159 Location Map

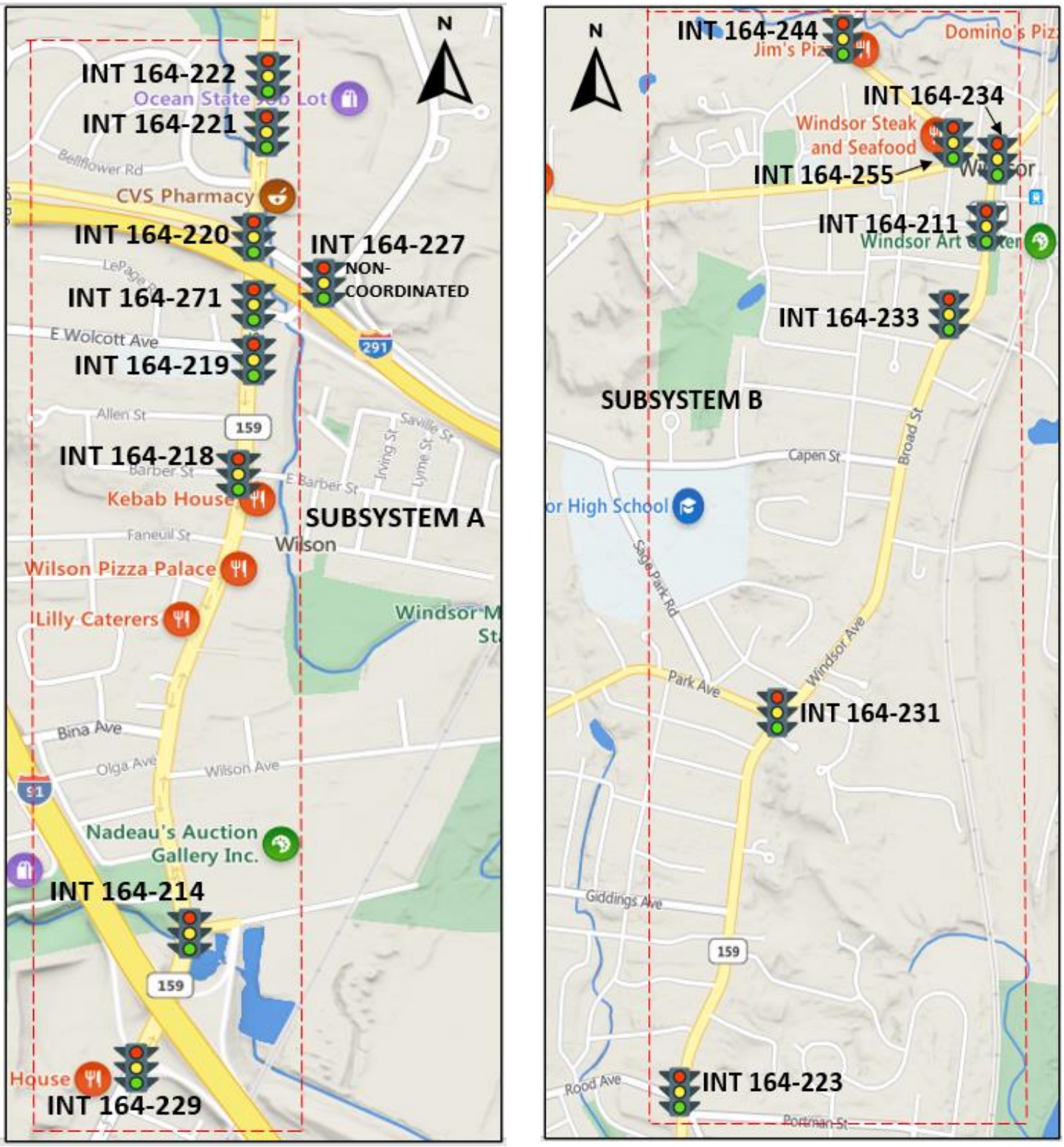


Table 12. Windsor Details, Route 159 (Windsor Avenue)

Windsor Route 159						
Intersection #	Subsystem	Location	Detection	Artery Detection	Field Communications	Controller
164-229	A	RTE 159 AT I-91 SB RAMPS	L	NONE	Copper Underground	Naztec V41
164-214	A	RTE 159 AT MEADOW RD	L	NONE	Copper Aerial/Underground	Naztec V41
164-218	A	RTE 159 AT BARBER STREET	L	NONE	Copper Aerial	Naztec V41
164-219	A	RTE 159 AT E. WOLCOTT	L	NONE	Copper Aerial	Naztec V41
164-271	A	RTE 159 AT DEERFIELD RD	L	NONE	Copper Aerial/Underground	Naztec V41
164-220	A	RTE 159 AT RTE 218	L	L	Copper Underground	Naztec V41
164-221	A	RTE 159 AT SHOP CNTR S.	L	NONE	Copper Aerial/Underground	Naztec V41
164-222	A	RTE 159 AT SHOP CNTR N.	L	NONE	Copper Aerial	Naztec V41
164-223	B	RTE 159 AT ROOD AVENUE	L	L	Copper Aerial	Naztec V41
164-231	B	RTE 159 AT RTE 178	L	L	Copper Aerial	Naztec V41
164-233	B	RTE 159 AT BATCHELDER	L	NONE	Copper Aerial	Naztec V41
164-211	B	RTE 159 AT MAPLE AVE	L	NONE	Copper Aerial/Underground	Naztec V41
164-234	B	RTE 159 AT RTE 75	L	NONE	Copper Underground	Naztec V41
164-255	B	RTE 75 AT RTE 305	V	NONE	Copper Underground	Naztec V41
164-244	B	RTE 75 AT MACK STREET	L, M	NONE	Copper Underground	Naztec V41
164-227	NONE	RTE 218 AT DEERFIELD RD	L	NONE	Copper Underground	Naztec V41
L = Loop, V = Video (Non-recording), M = MICROWAVE						

Windsor Locks/Windsor, Route 75 (Ella Grasso Turnpike)

Route 75 (Ella Grasso Turnpike) corridor is a north/south principal corridor through the towns of Windsor and Windsor Locks. It includes nine (9) signalized intersections broken into two Subsystems A and B. Each of the subsystems have common operating environments including roadway functionality, geographic surroundings, traffic signal phasing, motor vehicle volumes, buses, and pedestrian activity. Subsystem A includes Route 20 Eastbound Ramps (Int. 164-205) and Route 20 Westbound Ramps (Int. 165-201). Subsystem B begins at Halfway House Road (Int. 165-204) and spans seven (7) signalized intersections to King Spring Road (Int. 165-225). See Figure 19 below for location map and Table 13 below shows further details of each signalized intersection throughout this corridor. This corridor is 2.2 miles long, has two travel lanes in each direction with no median, sidewalks are present through most of the corridor, no bike lanes, and numerous bus stops along the corridor. There is low pedestrian activity with Schoephoester Road (Int. 165-202). Schoephoester Road has walk/don't walk indications. The remaining intersections have red, yellow, green pedestrian indications. The average two-way peak hour volumes are approximately 1,050, 1,500, and 1,650 vehicles for a.m., midday, and p.m. peak hours, respectively. The posted speed limit is 40 mph. Route 75 is considered a diversion route for I-91 and Route 20 when the highway experiences significant delays and queues.

The corridor is dominated by heavy industrial/commercial activity centered around servicing Bradley International Airport area. Route 20 links I-91 to the Airport and areas to the west. There is significant truck traffic throughout the corridor. The corridor is uncongested with lower volume during non-peak and late evening hours that is better suited for equitable green to reduce wait times for side streets by not providing preferential time for arterial coordination. In optimizing the traffic signal system timings, Route 75 in Windsor/Windsor Locks achieved better traffic flow in both directions that improved timing for local operational movements to meet all the user needs.

Figure 19: Windsor Locks / Windsor Route 75 Location Map

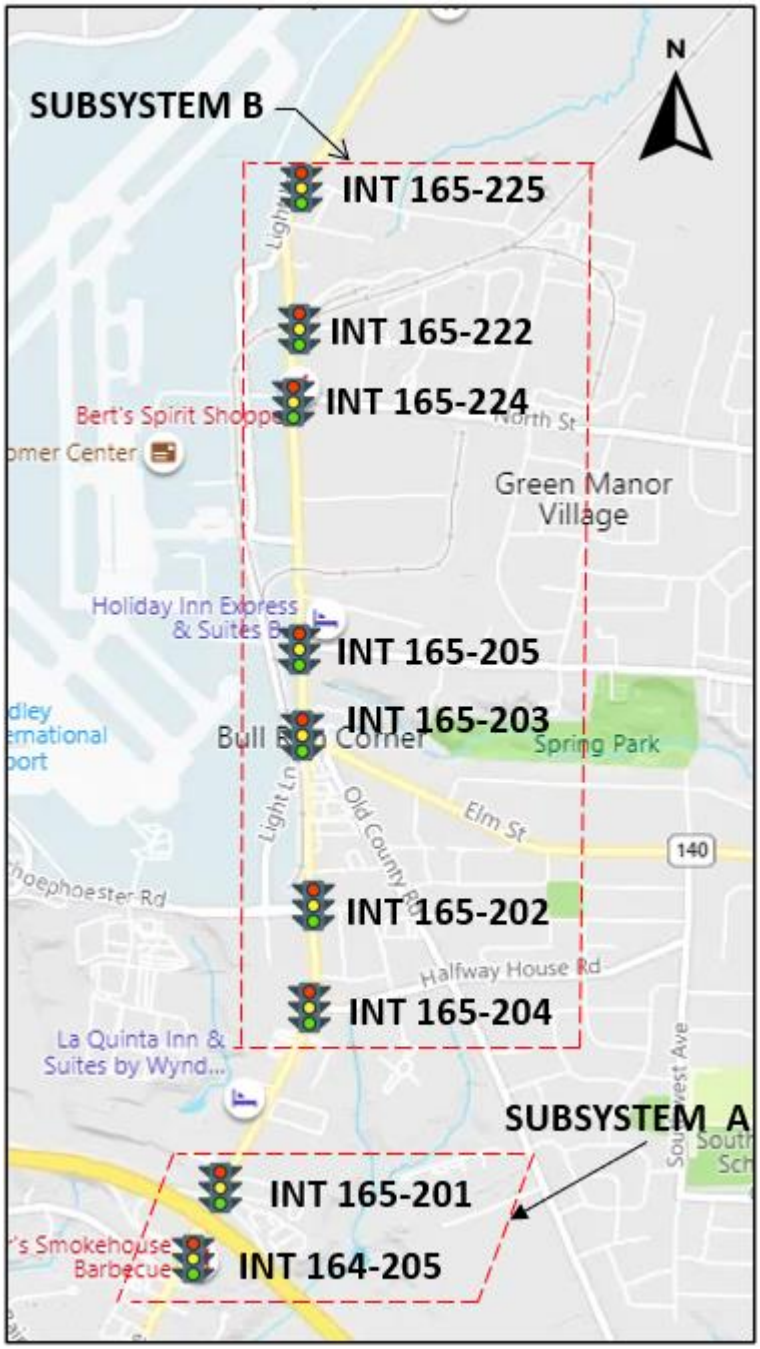


Table 13. Windsor/ Windsor Locks Details, Route 75 (Ella Grasso Turnpike)

Windsor/ Windsor Locks Route 75						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Communications**	**Controller**
164-205	A	RTE 75 AT RTE 20 EB RAMPS	V	NONE	Copper Aerial/Underground	Cubic V85
165-201	A	RTE 75 AT RTE 20 WB RAMPS	V	NONE	Copper Aerial/Underground	Cubic V85
165-204	B	RTE 75 AT HALFWAY HOUSE ROAD	V	NONE	Copper Underground	Cubic V85
165-202	B	RTE 75 AT SCHOEPHOESTER ROAD	V	V	Copper Underground	Cubic V85
165-203	B	RTE 75 AT RTE 140 (ELM ST)	V	NONE	Copper Underground	Cubic V85
165-205	B	RTE 75 AT SPRING STREET	L	NONE	Copper Underground	Cubic V85
165-224	B	RTE 75 AT NORTH STREET	L	NONE	Copper Underground	Cubic V85
165-222	B	RTE 75 AT FRM CT NAT GUARD	NONE	NONE	Copper Aerial/Underground	Cubic V85
165-225	B	RTE 75 AT KING SPRING ROAD	L, V	NONE	Copper Aerial	Cubic V85
L = Loop, V = Video (Non-recording)						

Traffic Signal Optimization

Synchro Network Development

A base network was created for each corridor by using a computer-based software (Synchro V11/SimTraffic). Existing intersection geometry, posted speed limits, traffic volumes (Appendix C), and signal timings were used in the creation of these models. The models were then calibrated using the "before" travel time run data from Tru-Traffic and SimTraffic to make sure that Synchro/SimTraffic V11 was reflecting existing conditions as closely as possible.

Operational Analysis

Building upon the base networks developed and calibrated as described in the previous section, an analysis was performed to optimize cycle lengths and phase splits. The operational analysis focused on improving mobility in the corridor based on the objectives and strategies established for each corridor. Context discussions were held to identify characteristics of each corridor to be considered in the analysis. For example, in some corridors, the user needs, and priorities are to improve traffic flow for uncongested conditions. In other corridors, the user needs, and priorities are to manage queues for congested conditions. Most corridors included user needs and priorities to address both uncongested and congested conditions for various hours of day and day of week time periods.

The operational analysis imbeds NCHRP Report 812 *Signal Timing Manual 2nd Ed.*[v] Guidance to include an outcome-based approach utilizing traffic signal system timing objectives and performance measures that ensures all the user needs and priorities are met. The outcome-based approach to signal timing allows the analyst to develop signal timing based on the operating environment, users, user priorities by movement, and local operational objectives. Performance measures are then used to assess how well the objectives are being met. Once the objectives and performance measures are established, timing strategies and timing values can be chosen. The final steps of the process involve implementation and observation (i.e., determining if the timing strategies and values are working), as well as sustaining operations that meet the operational objectives through monitoring and maintenance.

Crash Data

Crash data was downloaded from the UCONN Connecticut Crash Data Repository Website[vi] ctcrash.uconn.edu for each corridor studied in Phase 2 of the project. The crash data period is from 1/1/2017 to 12/31/2019. The data was reviewed for crash patterns that may be reduced or be eliminated by changes to signal coordination timings. For example, rear-end and same direction side swipe type crashes are related to quality of traffic flow and queue management. If these types of conditions were identified, then the crash data was used in developing the timing plans and are noted in the corridor descriptions if applicable. Detailed crash reports for each corridor can be found in Appendix D. It is planned that the crash data provided in Appendix D will be used in a comparative analysis three to five years from the date of timing plan implementation. The comparison of future crash data with the crash data in Appendix D can be used to determine if any crashes related to timing plan changes have been reduced or corrected.

Traffic Signal Timing Development

Development of traffic signal timings were completed through a multi-step process which included the calculation of each intersection's coordination timing parameters (cycle lengths, splits, and offsets) from Monday through Friday during 6 a.m. to 6 p.m. Timings were then refined in the field based on observations and/or complaints. The following sections detail how these calculations were developed and modified for each corridor.

Cycle Length

An optimal cycle length provides sufficient green time to effectively serve all movements at an intersection while providing efficient flow of traffic through a corridor from one intersection into the next. Longer cycle lengths can typically accommodate higher mainline volumes, however, they may cause greater delays for the minor approaches to the intersections. Short cycle lengths can help to reduce the delay for minor approaches but will cause disruption to the flow of traffic. An optimal cycle length balances these two considerations of delay and flow. Additionally, it is important to consider how the selection of a cycle length at an intersection affects operations at adjacent intersections. System-wide coordination can be accomplished by using a similar cycle length throughout the system or grouping of intersections into Subsystems. The optimal cycle length is the merging of the following factors:

- System-wide coordination
- Intersection vehicular demand (user through and turning movements priorities)
- Minimum cycle length
- Pedestrian and bicycle user phase activation and volumes
- Overall intersection delay and level of service (LOS)
- Intersection approach/movement delays
- Flow of traffic

A critical movement analysis was performed following the guidance from NCHRP *Signal Timing Manual 2nd Ed*[vii]. Using the peak hour volumes, lane configuration and existing phasing at the intersections, the critical volume was calculated by time of day for each intersection to identify a system cycle length by time of day. Exhibit 5-30 of the NCHRP *Signal Timing Manual 2nd Ed*[viii] recommends cycle length and effective green time per cycle is based on a maximum peak hour volume.

Cycle lengths were evaluated against the items listed above, with consideration given to the performance of existing cycle lengths. Up to five cycle lengths were considered for a 24-hour period including the existing cycle length, the cycle length identified through the critical movement analysis and cycle lengths within 5 to 10 second increments of the existing and critical cycle lengths. Resulting MOEs such as travel time and delay were evaluated in the selection of the cycle length to be implemented.

Splits and Offsets

Splits were calculated based on the minimum and maximum green times plus the clearances (total time of red and yellow) from the traffic signal plans. The existing splits were considered in optimizing green times in Synchro V11. Offsets were initially calculated by using the Tru-Traffic and SimTraffic programs.

Time of Day Schedule

A schedule was developed to operate the proposed timing plans based on patterns for Monday through Friday 6 a.m. to 10 p.m. Traffic volumes throughout the day were used as the basis for developing the time-of-day schedule. The spikes in the a.m., midday, and p.m. periods of the traffic volumes guided the core hours of operation. The graphical representation of volumes developed in the critical movement analysis were used to identify variations in volumes by time of day and develop the time-of-day schedule for a corridor. The time of day, day of week schedules include coordinating with the programmed hours of flash and determination of time periods for non-coordinated operation. The flash and non-coordination operation aid in meeting the needs of the users for uncongested time periods to reduced wait times for green, improved flow, and provide users' equitable green time. The time-of-day schedules were selected to minimize transition time between changes in cycle lengths.

CTDOT Review and Adjustments

Upon completion of the proposed traffic signal timing changes, CTDOT performed a review of the timing plans using pertinent operational objectives and performance measures as well as various technical and engineering tools. CTDOT's review included data collection with field reviews before implementation. CTDOT recognizes the importance of visual observations to gain an understanding of the arterial functionality and the surrounding environment (Context of the corridor). Combining field observations with technology such as data from the controllers, 360-degree video detectors and CCTV, the CTDOT engineers evaluated the timing plans and adjusted as appropriate. Additionally, prior to implementing new timing plans, the engineers use a visual software tool called TSDWIN[ix] to analyze coordination strategies to refine the time space diagrams and confirm the proposed offsets.

Implementation and Field Fine-Tuning

Recommended changes to the existing timing plans were developed by the Consultant and submitted to CTDOT for review. Upon discussion and completion of the recommended changes, new optimized signal timings were downloaded through the remote system communications from central control or implemented by the Traffic Signal Lab. The new timing plans were observed through split monitoring, field observations, and travel time data collection by CTDOT staff after implementation. Fine tuning continued in the weeks following the initial implementation in a corridor to address operational deficiencies that were noted during monitoring of the new timing's operations and address citizen's complaints.

Fine-tuning mainly included adjusting splits and offsets. Movements found needing more split time were addressed based on the tradeoff between improving the movement operations and the impact to the overall coordination along the corridor. Offsets were adjusted along the corridor to improve progression based on the field observations and travel time runs. Any revision made during the fine-tuning process was recorded and revised on the excel coversheets.

Final Data Collection

Upon completion of the field fine tuning, the Consultant collected travel time data using Tru-Traffic and the travel time runs. The travel time runs are used to calculate travel time measurement. Travel time runs include driving a vehicle though the study limits during weekday peak morning and afternoon hours to gather speed, stops, delay, and travel time measurements for both directions of travel. To learn more about the concept of how travel time runs are taken, watch the side-by-side video on the CTDOT Green Light website (CTDOT Green Light Main Page). The video demonstrates the

before and after travel time runs for corridor Route 218 (Cottage Grove Road/Putnam Highway). Delay and travel time collected for each corridor "after" field fine tuning was compared to the "before" travel runs performed prior to optimization to determine operational improvements for the timing evaluation.

Changes by Corridors in Phase 2:

This section describes the signal timing changes implemented for each corridor by comparing the "before" evaluation timing plans to the "after" evaluation timing plans.

CTDOT used equitable distribution of time for the hours 10 p.m. to 6 a.m. and minimum cycle lengths to reduce wait times. Coordination between intersections is provided where intersection proximity, or other user needs could be addressed by the coordination. Otherwise, the intersections are programmed non-coordinated or flashing operation for late night early morning time periods as needed.

Each corridor has tables to show the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections.

Each traffic signal in a system or Subsystem may be required to operate differently after 10 p.m. Therefore, the cycle lengths are listed as "variable" to represent the several types of operation. For example, some signals may remain coordinated while other signals operate flash or non-coordinated.

Avon/Simsbury, Route 44, Route 202, & Route 10

Route 44, Route 202, & Route 10 in Avon/Simsbury directional motorist peaks are typically eastbound in the a.m. and westbound in the p.m. Weekday off-peak and weekends are more balanced flow in both directions. The corridor volumes rise steadily during the day and peaking during the 5:00-6:00 p.m. hour mark. The coordination timing improvements consisted of selecting the engineer's analysis of the most efficient timings including the optimal cycle length, phase split and offsets, reviewing and updating the breakdown of subsystems, decreasing the overall number of patterns throughout the day, and reviewing the daily schedules for start and end times.

Route 44 intersections remained as three Subsystems (A, B, and C) to increase the opportunities for coordination. The intersections at Old Farms Road (Int. 004-202) and Nod Road (Int. 004-201), under Subsystem C, were added to the coordination during a.m. and p.m. hours to improve flow in the subsystem. The two intersections remain non-coordinated during off peak hours to best accommodate the motor vehicle movement priorities. The non-coordinated operation is better suited as the need for traffic flow is diminished with reduced Route 44 volumes. The balance of traffic flow and movement priorities remained the same for the Hoffman Auto (Int. 128-226) and Route 167 (Int. 128-204) subsystem. Midday cycle lengths were lowered for the Farmington Valley Mall (Int. 004-206) to Ensign Drive (Int. 004-219) under Subsystem B to reduce motorists wait times for green. The intersections from Old Farms Road to Nod Road in Subsystem C warranted a cycle length increase for midday hours due to midday volumes. The hours of coordination were expanded for each of a.m., midday, and p.m. cycle lengths based on traffic volumes throughout the day. These changes improved operations and increased coordination throughout the day. The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as "variable" for the intersections that run "non-coordinated."

Figure 20: Avon/Simsbury Route 44, Route 202, & Route 10 Location Map

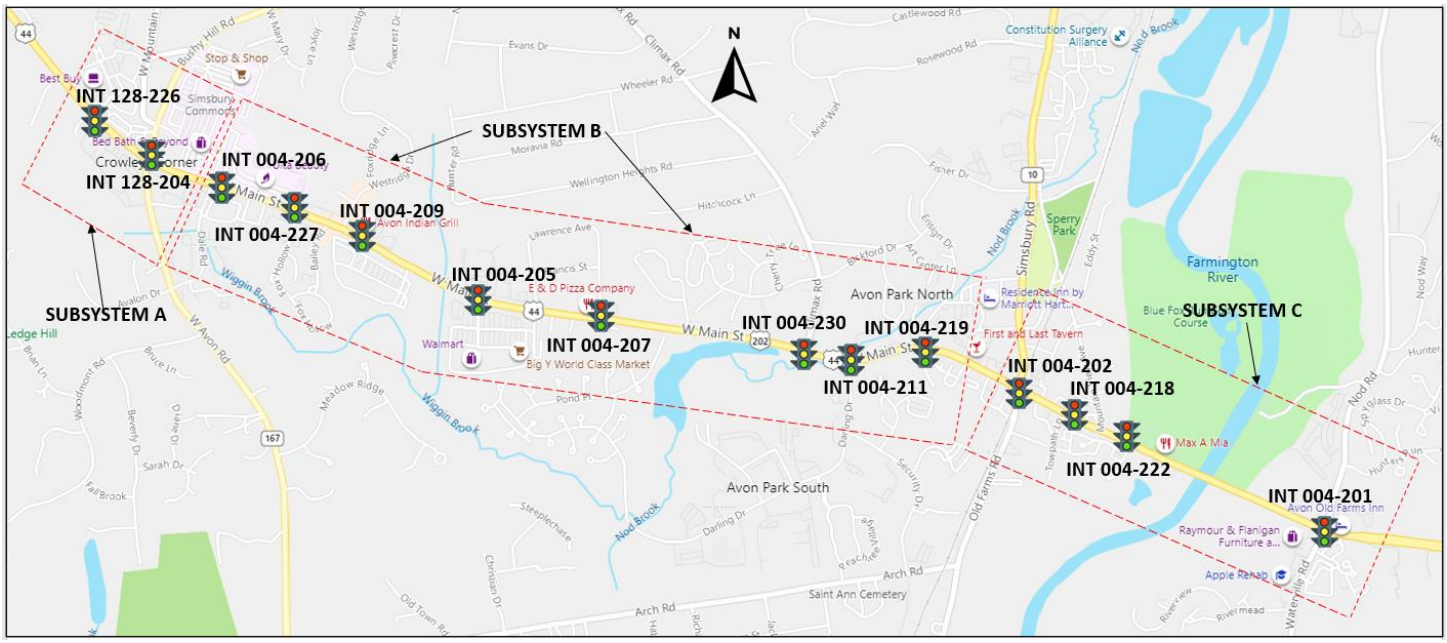


Table 14. Avon/Simsbury Route 44, Route 202, & Route 10 Changes to Cycle Lengths and Offsets

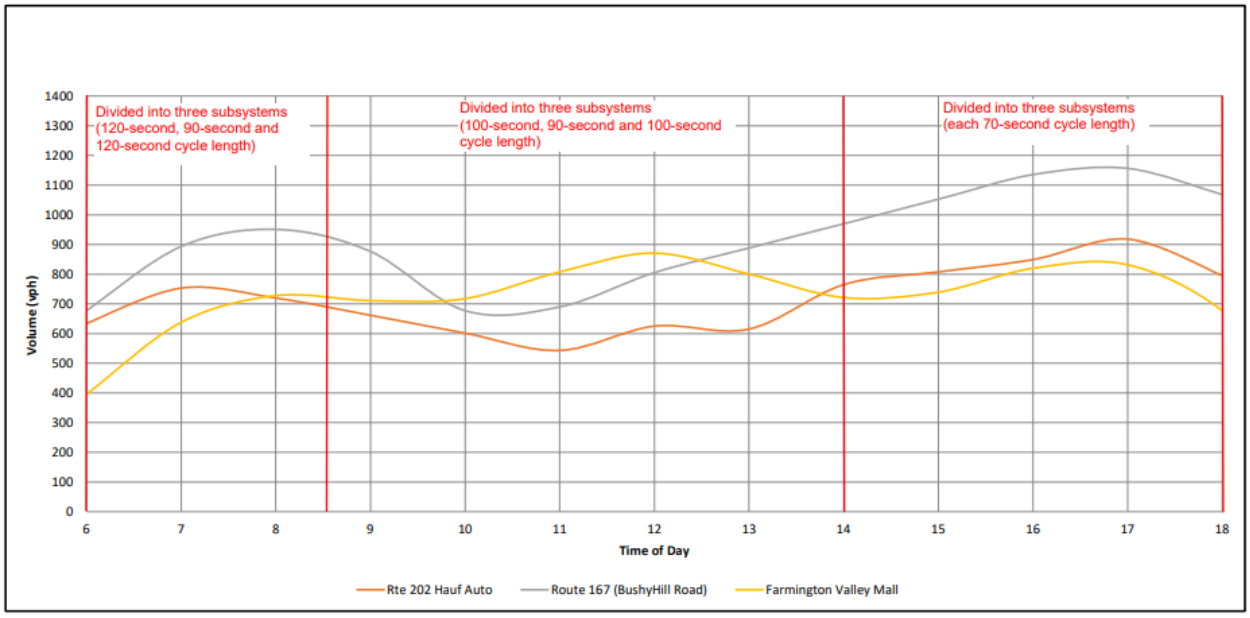
Monday – Friday 6 a.m. – 10 p.m.

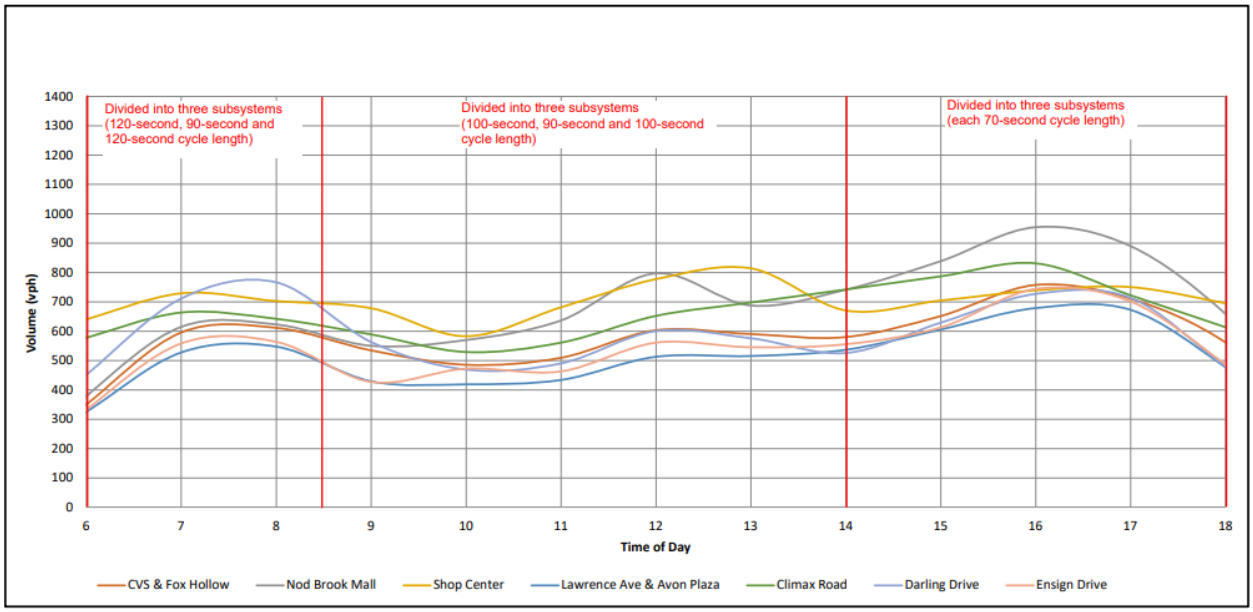
Before Evaluation Timings (Cycle - Offset)							
Intersection		Time of Day					
No.	Description	6	7 8 9	10 11 12 13 14	15 16 17 18	19 20 21	22
128-226	Hoffman Auto	60	120 - 27	120 - 78	120 - 35	60 - 16	Variable
128-204	Rte 167 (Bushyhill Rd)	60	120 - 05	120 - 57	120 - 07	60 - 00	
004-206	Dale Rd & Mall Dr	60	120 - 20	100 - 46	120 - 112	60 - 36	
004-227	CVS & Fox Hollow	60	90 - 15	100 - 43	100 - 83	60 - 01	
004-209	Nod Brook Mall	60	90 - 30	100 - 26	100 - 79	60 - 16	
004-205	Shopping Center	60	90 - 38	100 - 49	100 - 50	60 - 43	
004-207	Lawrence Ave	60	90 - 85	100 - 66	100 - 45	60 - 15	
004-230	Climax Road	60	90 - 48	100 - 14	100 - 97	60 - 12	
004-211	Darling Drive	60	90 - 85	100 - 11	100 - 86	60 - 11	
004-219	Ensign Drive	60	90 - 50	100 - 11	100 - 53	60 - 11	
004-202	Old Farms Road	Variable					
004-218	Old Avon Village	60	120 - 54	80 - 00	120 - 73	60 - 12	Variable
004-222	Riverpark	60	120 - 54	80 - 00	120 - 73	60 - 12	
004-201	Nod Road	Variable					

After Evaluation Timings (Cycle - Offset)							
Intersection		Time of Day					
No.	Description	6	7 8 9	10 11 12 13 14	15 16 17 18	19 20 21	22
128-226	Hoffman Auto	120 - 00		100 - 78	120 - 35	Variable	
128-204	Rte 167 (Bushyhill Rd)	120 - 00		100 - 57	120 - 07	Variable	
004-206	Dale Rd & Mall Dr	120 - 00		90 - 00	100 - 00	70 - 14	Variable
004-227	CVS & Fox Hollow	90 - 30		90 - 00	100 - 00	70 - 00	
004-209	Nod Brook Mall	90 - 30		90 - 00	100 - 00	70 - 00	
004-205	Shopping Center	90 - 57		90 - 51	100 - 45	70 - 39	
004-207	Lawrence Ave	90 - 16		90 - 66	100 - 36	70 - 08	
004-230	Climax Road	90 - 56		90 - 00	100 - 00	70 - 00	
004-211	Darling Drive	90 - 56		90 - 00	100 - 00	70 - 00	
004-219	Ensign Drive	90 - 86		90 - 00	100 - 00	70 - 00	
004-202	Old Farms Road	120 - 75		Variable	120 - 97	Variable	
004-218	Old Avon Village	120 - 112		100 - 00	120 - 112	70 - 12	Variable
004-222	Riverpark	120 - 112		100 - 00	120 - 112	70 - 12	
004-201	Nod Road	120 - 31		Variable	120 - 31	Variable	

Note: Offsets are omitted in Before Evaluation for 60 second cycle from 6 am to 6:30 am due to space limitations.

Figure 21: Avon/Simsbury, Route 44, Route 202, & Route 10 Critical Volume Chart

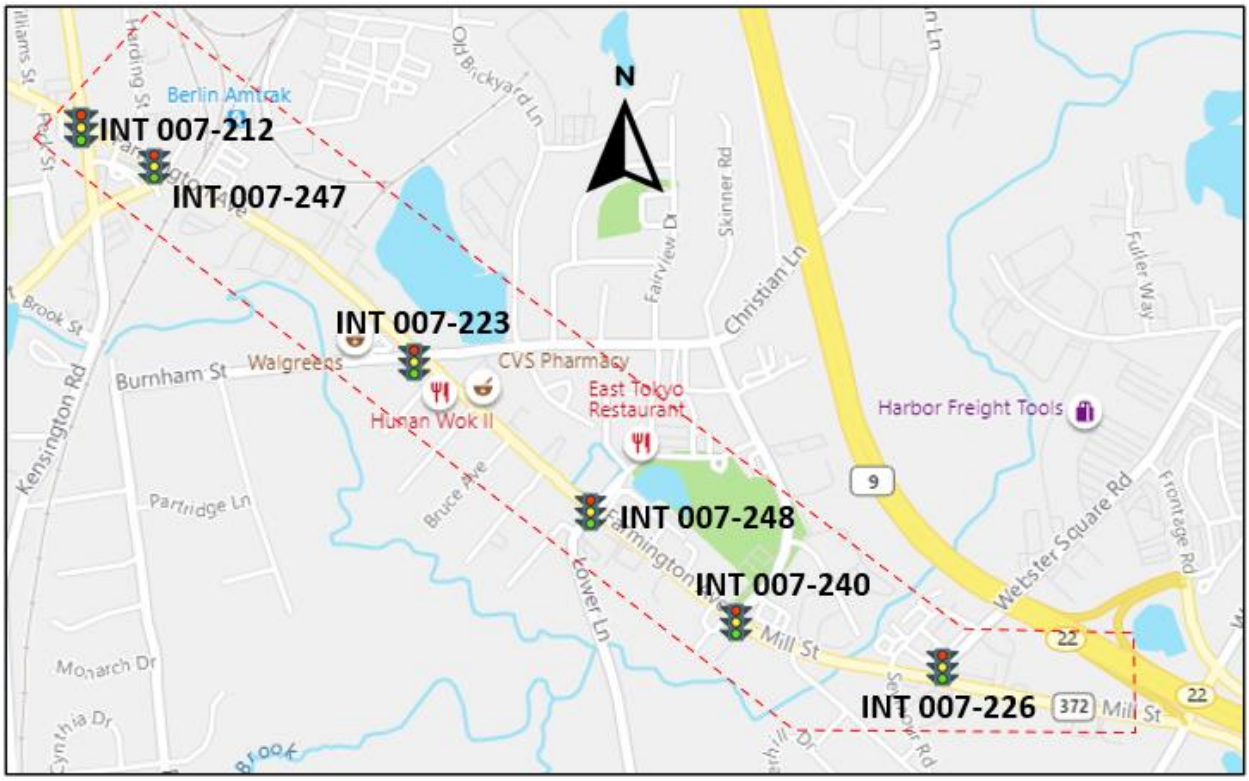




Berlin, Route 372

Route 372 in Berlin has seen an increase in traffic volumes in recent years. Generally, the changes implemented to improve traffic flow include an increase in cycle lengths to increase overall capacity and a reduction in the number of patterns throughout the day. To improve traffic flow on Route 372 for both directions, the increase in cycle length was combined with adding the coordination timing to Porters Pass. The p.m. traffic volumes were found to be more significant than the a.m. or midday and were accommodated by increasing the cycle length during the p.m. The a.m. peak and midday 6:00 a.m. - 2:30 p.m. time periods were combined and best accommodated by an 80 second cycle length. These changes improved operations and increased coordination throughout the day. The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections.

Figure 22: Berlin Route 372 Location Map



.

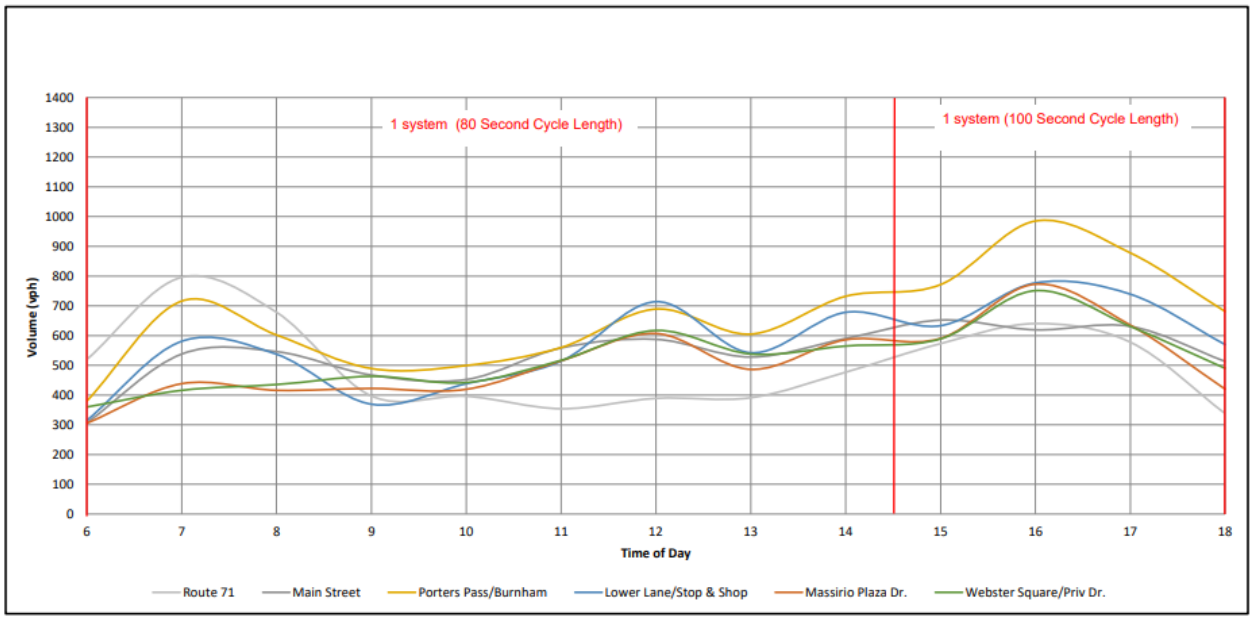
Table 15. Berlin Route 372 Changes to Cycle Lengths and Offsets
Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation Timings (Cycle - Offset)																			
Intersection		Time of Day																	
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
007-212	Route 71	60	90 - 58		70 - 58							90 - 68		70 - 58		60 - 58		Variable	
007-247	Main & Depot	60	90 - 58		70 - 58							90 - 58		70 - 58		60 - 58			
007-223	Porters Pass	Variable																	
007-248	Lower Lane	60	90 - 31		70 - 25							90 - 24		70 - 25		60 - 50			
007-240	Massirio Drive	60	90 - 69		70 - 45							90 - 85		70 - 45		60 - 29			
007-226	Webster Square Rd	60	90 - 65		70 - 13							90 - 65		70 - 13		60 - 06			

After Evaluation Timings (Cycle - Offset)																			
Intersection		Time of Day																	
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
007-212	Route 71	80 - 44									100 - 72				70 - 58			Variable	
007-247	Main & Depot	80 - 38									100 - 58				70 - 58				
007-223	Porters Pass	80 - 78									100 - 00				70 - 00				
007-248	Lower Lane	80 - 32									100 - 60				70 - 25				
007-240	Massirio Drive	80 - 36									100 - 56				70 - 45				
007-226	Webster Square Rd	80 - 23									100 - 39				70 - 13				

Note: Offsets are omitted in Before Evaluation for 60 second cycle from 6 am to 7 am due to space limitations.

Figure 23: Berlin, Route 372 Critical Volume Chart



Bloomfield, Route 218

Route 218 in Bloomfield has an increase in traffic volumes in recent years. Generally, the changes implemented to improve traffic flow include an increase in cycle lengths to increase overall capacity and a reduction in the number of patterns throughout the day. To increase Route 218 traffic flow for both directions, the increase in cycle length was combined with simultaneous green lights for the Copaco Shopping Center between Tyler Street (Int. 011-230) and Copaco East Entrance (Int. 011-232). The midday traffic volumes were found to be lower after the a.m. peak with a midday increase during the noon hour then a steady increase of volume starting from 2:00 p.m. through 6:00 p.m. These volumes were accommodated by changing the cycle lengths accordingly. The a.m. peak period and p.m. peak period volumes were found to be best accommodated by longer cycle lengths to improve traffic flow. These changes improved operations and increased coordination throughout the day. The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections.

Figure 24: Bloomfield Route 218 Location Map

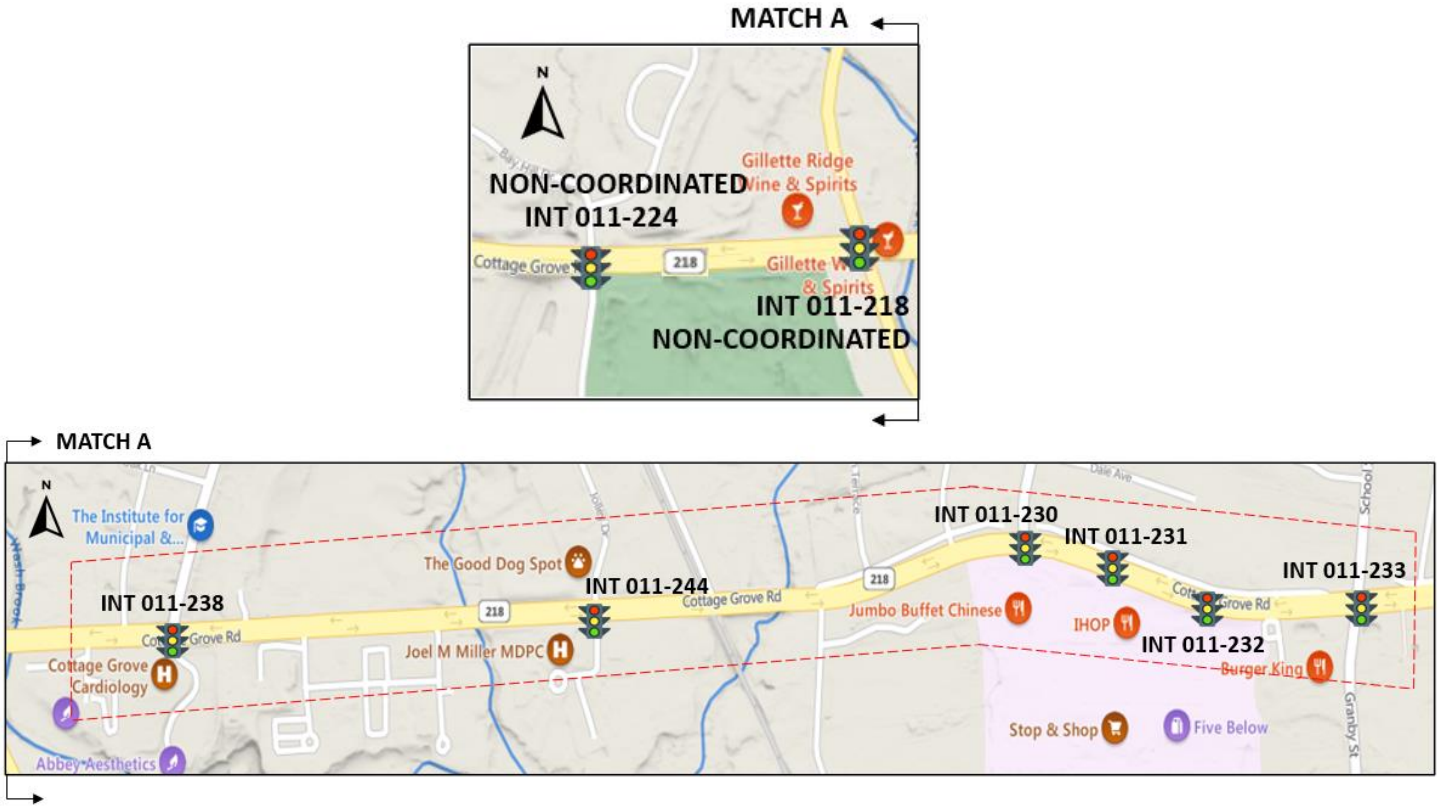


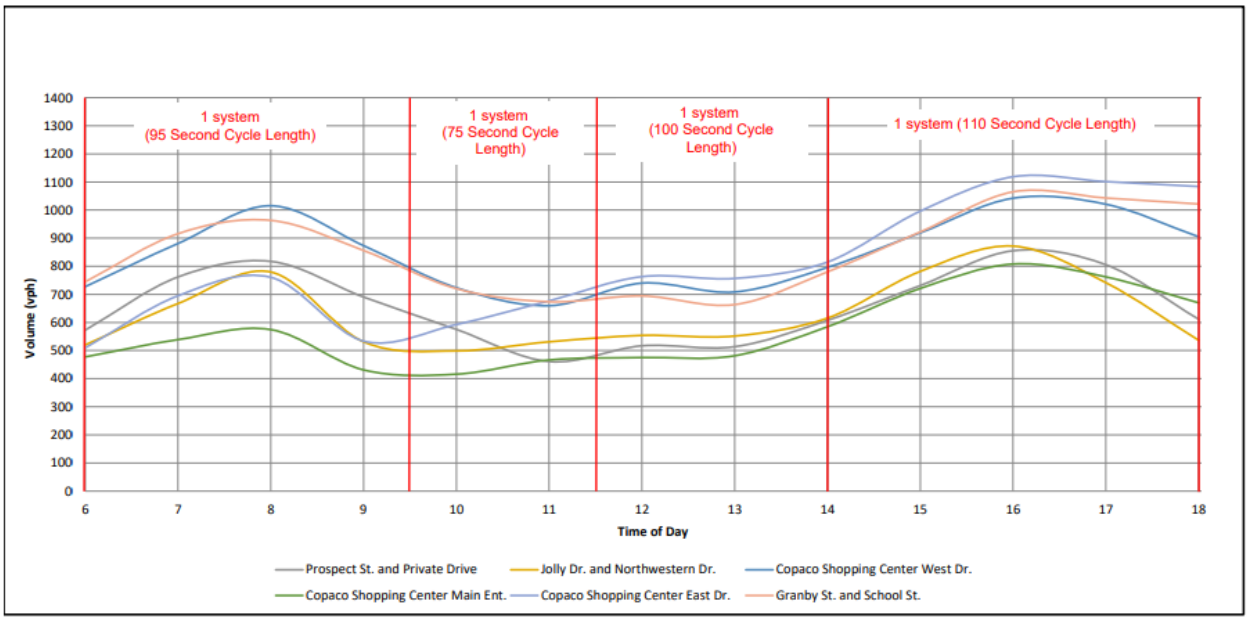
Table 16. Bloomfield Route 218 Changes to Cycle Lengths and Offsets
Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation Timings (Cycle - Offset)																			
Intersection		Time of Day																	
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
011-224	Cigna	Variable																	
011-218	Route 189	Variable																	
011-238	Prospect Street	65	85 - 80			75-30						95 - 70			75-30		65-62	Variable	
011-244	Northwestern Dr.	65	85 - 35			75-06						95 - 17			75-06		65-38		
011-230	Tyler Street	65	85 - 63			75-36						95 - 58			75-36		65-00		
011-231	Copaco Main Ent	65	85 - 67			75-36						95 - 68			75-36		65-00		
011-232	Copaco East Ent	65	85 - 67			75-36						95 - 65			75-36		65-00		
011-233	Granby Street	65	85 - 41			75-11						95 - 76			75-11		65-10		

After Evaluation Timings (Cycle - Offset)																			
Intersection		Time of Day																	
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
011-224	Cigna	Variable																	
011-218	Route 189	Variable																	
011-238	Prospect Street	95 - 92				75 - 07		100 - 00			110 - 19				75 - 00			Variable	
011-244	Northwestern Dr.	95 - 44				75 - 43		100 - 43			110 - 63				75 - 00				
011-230	Tyler Street	95 - 00				75 - 00		100 - 00			110 - 00				75 - 00				
011-231	Copaco Main Ent	95 - 00				75 - 00		100 - 00			110 - 00				75 - 00				
011-232	Copaco East Ent	95 - 00				75 - 00		100 - 00			110 - 00				75 - 00				
011-233	Granby Street	95 - 60				75 - 51		100 - 81			110 - 15				75 - 00				

Note: Offsets are omitted in Before Evaluation for 65 second cycle from 6 am to 6:30 am due to space limitations.

Figure 25: Bloomfield Route 218 Critical Volume Chart



East Hartford, Route 518

Route 518 in East Hartford has seen significant reduction of volumes during the a.m. peak in the past few years. The volume reduction is attributed to the impact of teleworking by employees from the major employers in the area. COVID-19 changed the workplace needs leading to a temporary reduction in vehicles, with additional benefits including less gas consumption, and less air pollution. This system primary benefit was to provide coordination for motorists traveling from the I-84 Westbound off ramp (Int. 042-235) to Rentschler Field (Int. 042-222) during the a.m. peak, Monday through Friday. The remaining hours of the day and weekends did not warrant the need for coordination due to the low volumes on Route 518. The reduction of volume in the a.m. peak resulted in removing the coordination during the a.m. peak. The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m.

Figure 26: East Hartford Route 518 Location Map

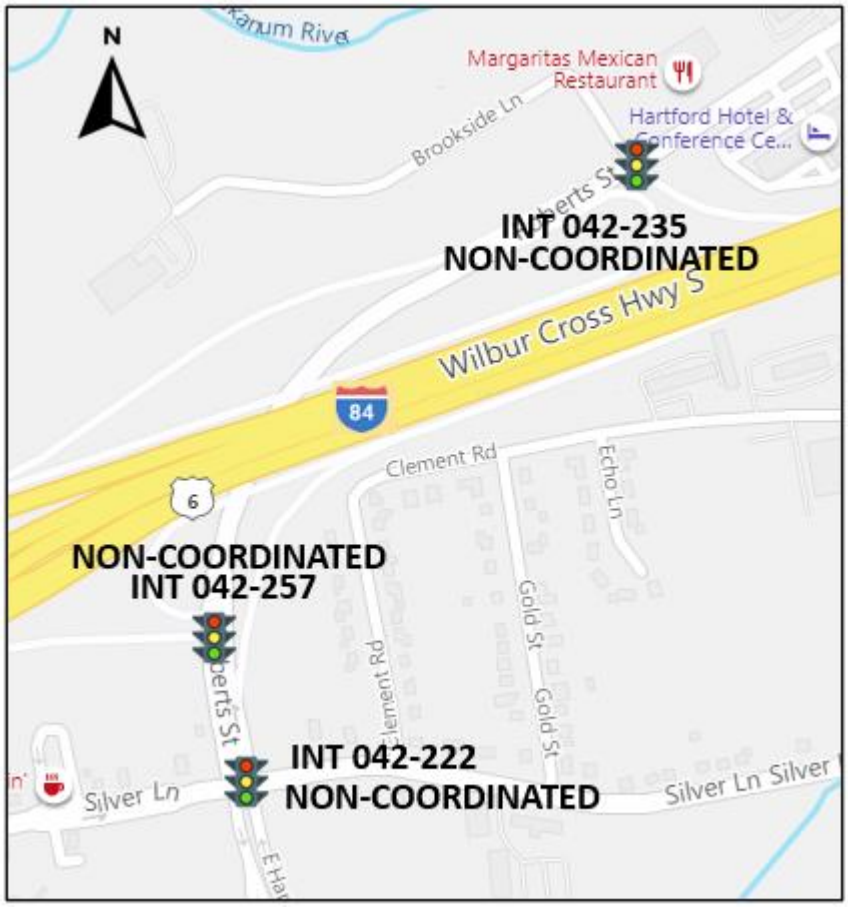
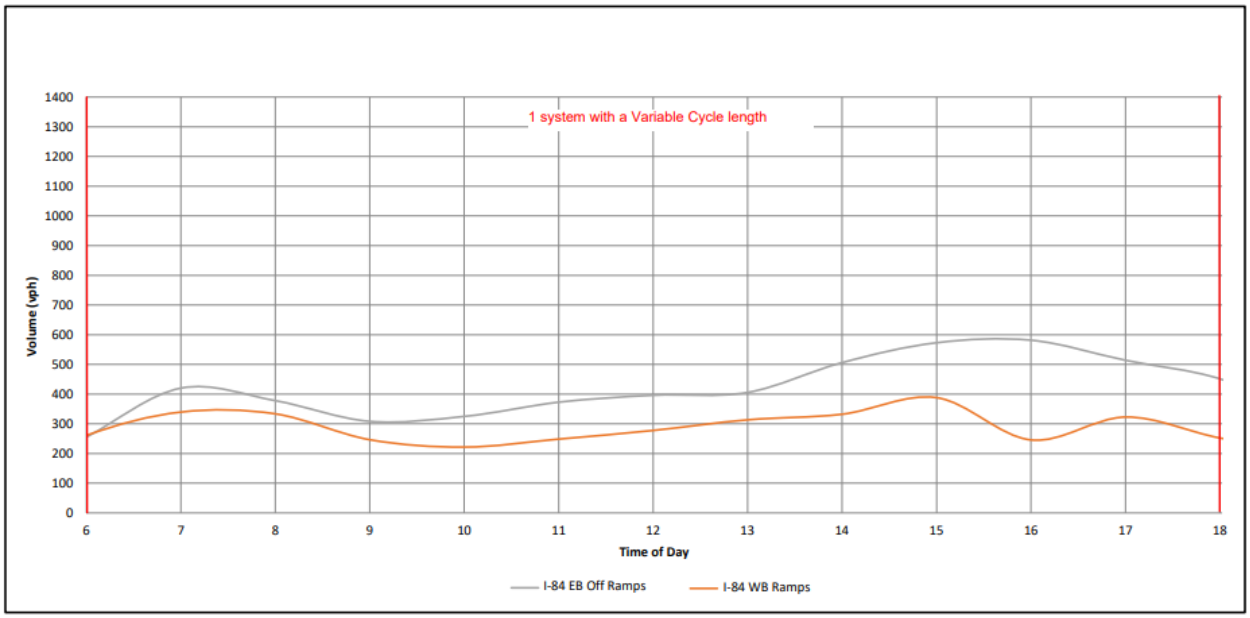


Table 17. East Hartford Route 518 Changes to Cycle Lengths and Offsets
Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation Timings (Cycle - Offset)			
Intersection		Time of Day	
No.	Description	6 7 8	9 10 11 12 13 14 15 16 17 18 19 20 21 22
042-222	Rentschlers Field	80 - 00	Variable
042-257	Roberts @ I-84 EB Ramps	80 - 17	Variable
042-235	Roberts @ I-84 WB Ramps	80 - 00	Variable

After Evaluation Timings (Cycle - Offset)		
Intersection		Time of Day
No.	Description	6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
042-222	Rentschlers Field	Variable
042-257	Roberts @ I-84 EB Ramps	Variable
042-235	Roberts @ I-84 WB Ramps	Variable

Figure 27: East Hartford Route 518 Critical Volume Chart



Enfield, Route 5

Route 5 is a north/south minor corridor in Enfield and provides access to Route 190 and I-91. The two intersections at I-91 Exit 49 (Int. 048-226 & Int. 048-247) will remain non-coordinated to best accommodate the high volume of ramp traffic and number of turning movements. Route 5 at Route 220 (Int. 048-206) will remain non-coordinated to better meet the needs of the motorist and heavy pedestrian activity. To improve Route 5 flow for both directions, the increase in cycle length was combined with revising the splits and offsets. The a.m. peak period (6:00-9:00) volumes were found to be best accommodated by 80 second cycle length. The minor drop in volumes after a.m. peak did not warrant an additional cycle and change in timing. The midday and p.m. traffic volumes were found to be more significant than the a.m. and were accommodated by a increasing the cycle length to 90 seconds. These changes improved operations and increased coordination throughout the day. The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as “variable” for the intersections that run “non-coordinated.”

Figure 28: Enfield Route 5 Location Map

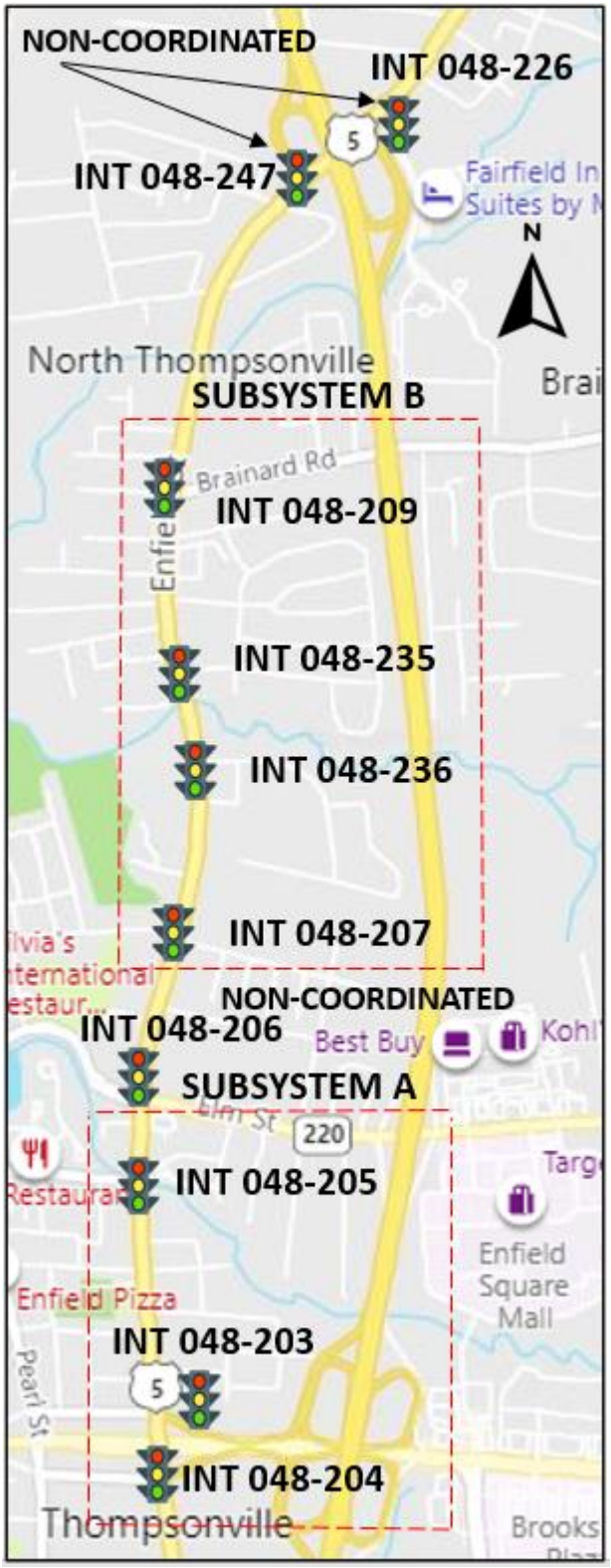


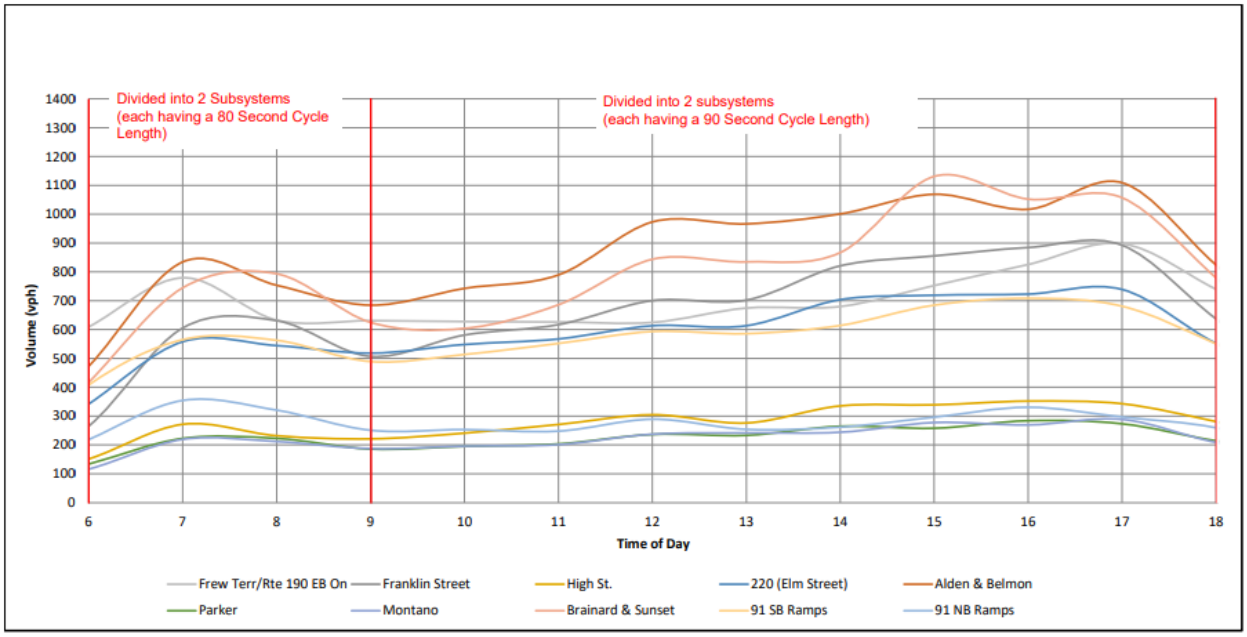
Table 17. Enfield Route 5 Changes to Cycle Lengths and Offsets
Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation Timings (Cycle - Offset)																				
Intersection		Time of Day																		
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
048-204	Frew Terrace	60	65 - 00			70 - 65						75 - 75				60 - 00			Variable	
048-203	Franklin Street	60	65 - 31			70 - 02						75 - 73				60 - 00				
048-205	High Street	60	65 - 00			70 - 29						75 - 36				60 - 00				
048-206	Route 220 (Elm St)	Variable																		
048-207	Alden & Belmont	60	65 - 30			70 - 25						75 - 27				60 - 27			Variable	
048-236	Parker Street	60	65 - 50			70 - 55						75 - 70				60 - 58				
048-235	Montano Road	60	65 - 59			70 - 52						75 - 62				60 - 32				
048-209	Brainard & Sunset	60	65 - 23			70 - 27						75 - 31				60 - 03				
048-247	I-91 SB Ramps	Variable																		
048-226	I-91 NB Ramps	Variable																		

After Evaluation Timings (Cycle - Offset)																				
Intersection		Time of Day																		
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
048-204	Frew Terrace	80 - 00			90 - 00											60-00			Variable	
048-203	Franklin Street	80 - 00			90 - 00											60-00				
048-205	High Street	80 - 35			90 - 35											60-33				
048-206	Route 220 (Elm St)	Variable																		
048-207	Alden & Belmont	80 - 75			90 - 75											60-34			Variable	
048-236	Parker Street	80 - 23			90 - 62											60-09				
048-235	Montano Road	80 - 24			90 - 12											60-12				
048-209	Brainard & Sunset	80 - 41			90 - 40											60-40				
048-247	I-91 SB Ramps	Variable																		
048-226	I-91 NB Ramps	Variable																		

Note: Offsets are omitted in Before Evaluation for 60 second cycle from 6 am to 6:30 am due to space limitations.

Figure 29. Enfield Route 5 Critical Volume Chart



Glastonbury, Route 94

Route 94 is a four lane minor corridor, oriented east/west in Glastonbury. The changes implemented for Subsystems A and B improved traffic flow by increasing green time for Route 94 through movements and corresponding cycle lengths. Western Boulevard (Int. 053-210) will remain non-coordinated to better meet the needs of the motorist movement priorities over traffic flow between adjacent intersections. Western Boulevard traffic signal phasing and the Route 2 Westbound off-ramp limit the ability to coordinate this intersection to intersections to the east and west. To improve Route 94 flow for both directions, the increase in cycle length was combined with reducing the number of cycles. The a.m. and p.m. volumes are essentially the same except for the directional peak. The midday volume drop was accommodated by reducing the cycle length by 10 seconds. These changes improved operations and increased coordination throughout the day. The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as "variable" for the intersections that run "non-coordinated."

Figure 30. Glastonbury Route 94 Location Map

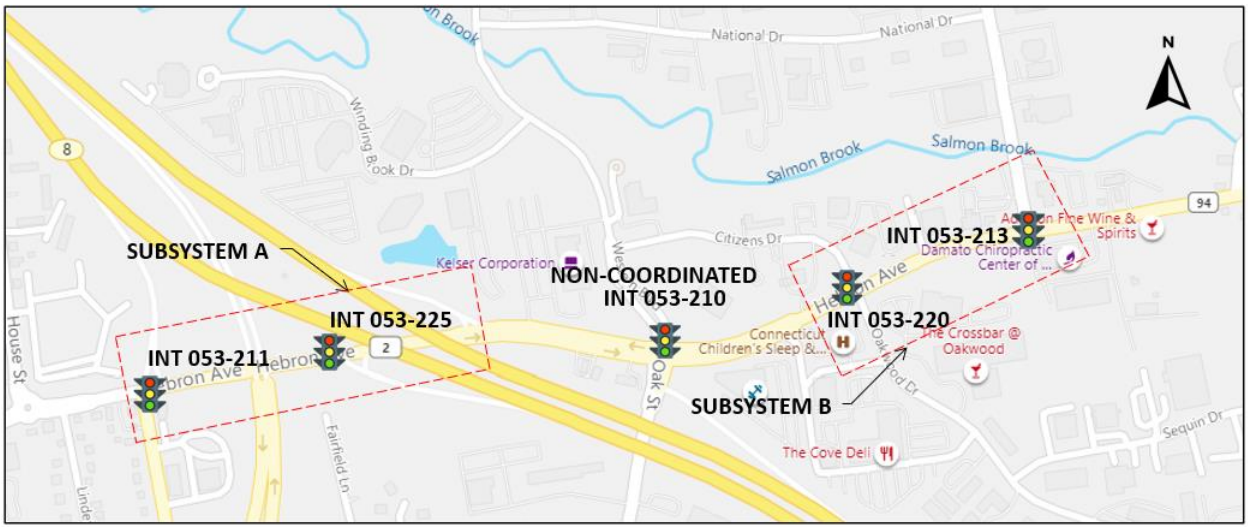


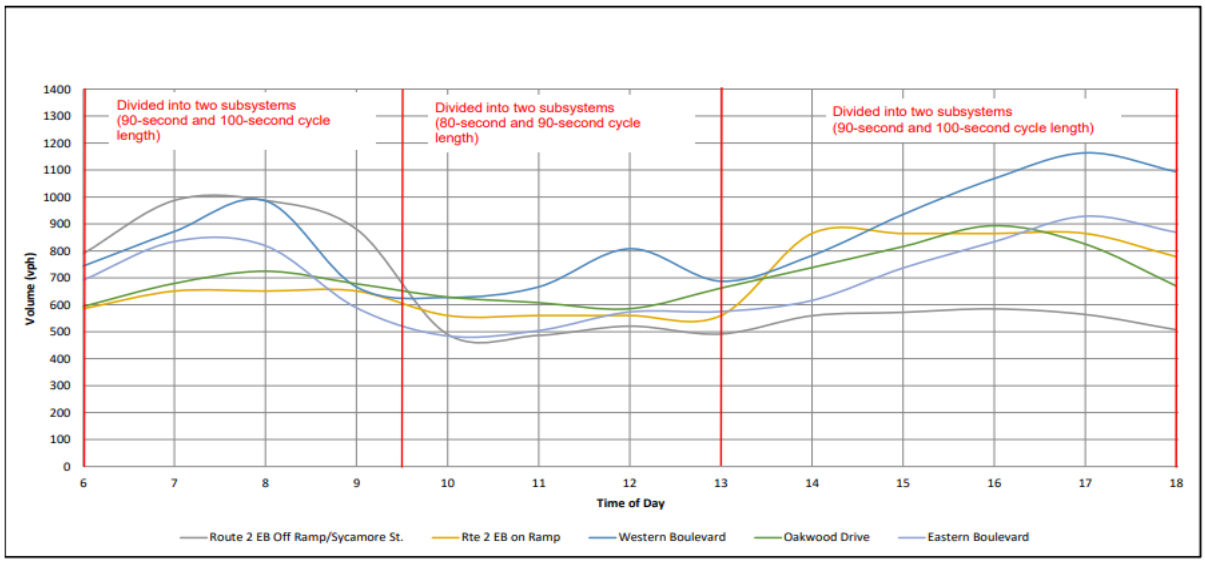
Table 18. Glastonbury Route 94 Changes to Cycle Lengths and Offsets
Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation Timings (Cycle - Offset)																					
Intersection		Time of Day																			
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
053-211	Rt 2 EB Off Ramp	65	80 - 12			65 - 06			85 - 01			90 - 12			85	Variable					
053-225	Rt 2 EB On Ramp	65	80 - 28			65 - 17			85 - 16			90 - 29			85 - 16			Var.			
053-210	Western Blvd	Variable																			
053-220	Oakwood Drive	60	80 - 60			60 - 46			70 - 49			75 - 55			70 - 49			60	Variable		
053-213	Eastern Blvd	60	80 - 64			60 - 47			70 - 44			75 - 55			70 - 44			60	Variable		

After Evaluation Timings (Cycle - Offset)																					
Intersection		Time of Day																			
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
053-211	Rt 2 EB Off Ramp	90 - 00				80 - 00			90 - 00						60 - 00			Variable			
053-225	Rt 2 EB On Ramp	90 - 16				80 - 09			90 - 18						60 - 13						
053-210	Western Blvd	Variable																			
053-220	Oakwood Drive	100 - 00				90 - 00			100 - 00						70 - 05						
053-213	Eastern Blvd	100 - 89				90 - 80			100 - 94						70 - 03						

Note: Offsets are omitted in Before Evaluation for 60 and 65 second cycles from 6 am to 6:30 am due to space limitations.

Figure 31. Glastonbury Route 94 Critical Volume Chart



Hartford, Route 44

The user needs and priorities for Route 44 in Hartford are complex and vary significantly by subsystem. Accordingly, the timing analysis and resulting cycle, splits, and offsets are equally complex. The user needs and priorities of Subsystem A are based on predominantly motor vehicles with a mix of commuters traveling through the subsystem with intermittent pedestrian and bus activity. The user needs in Subsystem A are more important to travel through the area than travel to the area. Subsystems B and C are significantly different from Subsystem A where the user needs and priorities are more important to travel to the area than through the area centering around the local businesses, parking, heavy pedestrian crossings, and heavy busing.

Subsystem A operational requirements limit the engineers' analysis to change coordination timing. The first operational need is to mitigate bottle neck issues between Prospect Avenue (Int. 063-246) and Route 189 (Int. 063-202). The northbound volume on Prospect Avenue to Route 189 northbound movement requires specific offset relationship to avoid the bottle neck issue during school hours. The bottle neck occurs due to traffic destinations from West Hartford to both the University of Hartford and local secondary schools. The subsystem changes included consideration for good flow on Route 44 between the two intersections due to intersection proximity and the vertical curve limiting Route 44 sightline.

Additional movement priorities for Subsystem A include a.m., and p.m. peak flow from Route 189 (Int. 063-202) southbound to east on Route 44 toward Scarborough Street (Int. 063-203), Homestead Avenue & Westbourne Parkway (Int. 063-205), and points further east on Route 44. Traffic volume from Scarborough Street and Homestead Avenue & Westbourne Parkway return westbound on Route 44 to North on Route 189 and west on Route 44. Midday movement priorities include four local schools (2 schools at Route 189, 2 schools at Mark Twain Drive, drop off and pick up hours are between 8:00 – 8:30 a.m. & 3:00 – 3:30 p.m.).

CTDOT implemented coordination timing changes for Subsystem A prior to Project 171-421 to address the user needs and movement priorities. CTDOT requested no changes be made to Subsystem A except for minor phase split adjustments to accommodate the buses and parent drop off and pick up.

Subsystems B and C share the same operating environment with significant pedestrian, bus, parking, and motor vehicle activity. The amount of pedestrian phase time and heavy frequency consume a significant amount of the cycle time. The 100 second cycle created operational issues with motor vehicle queue spillback through adjacent intersections. All intersections are programmed with the same offset relationship to assist with bottleneck intersections. CTDOT selected a 130 second cycle to ensure all the user needs are met and maintain safe intersection operation and flow.

These changes improved operations and increased coordination throughout the day. The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as "variable" for the intersections that run "non-coordinated."

Figure 32. Hartford Route 44 Location Map

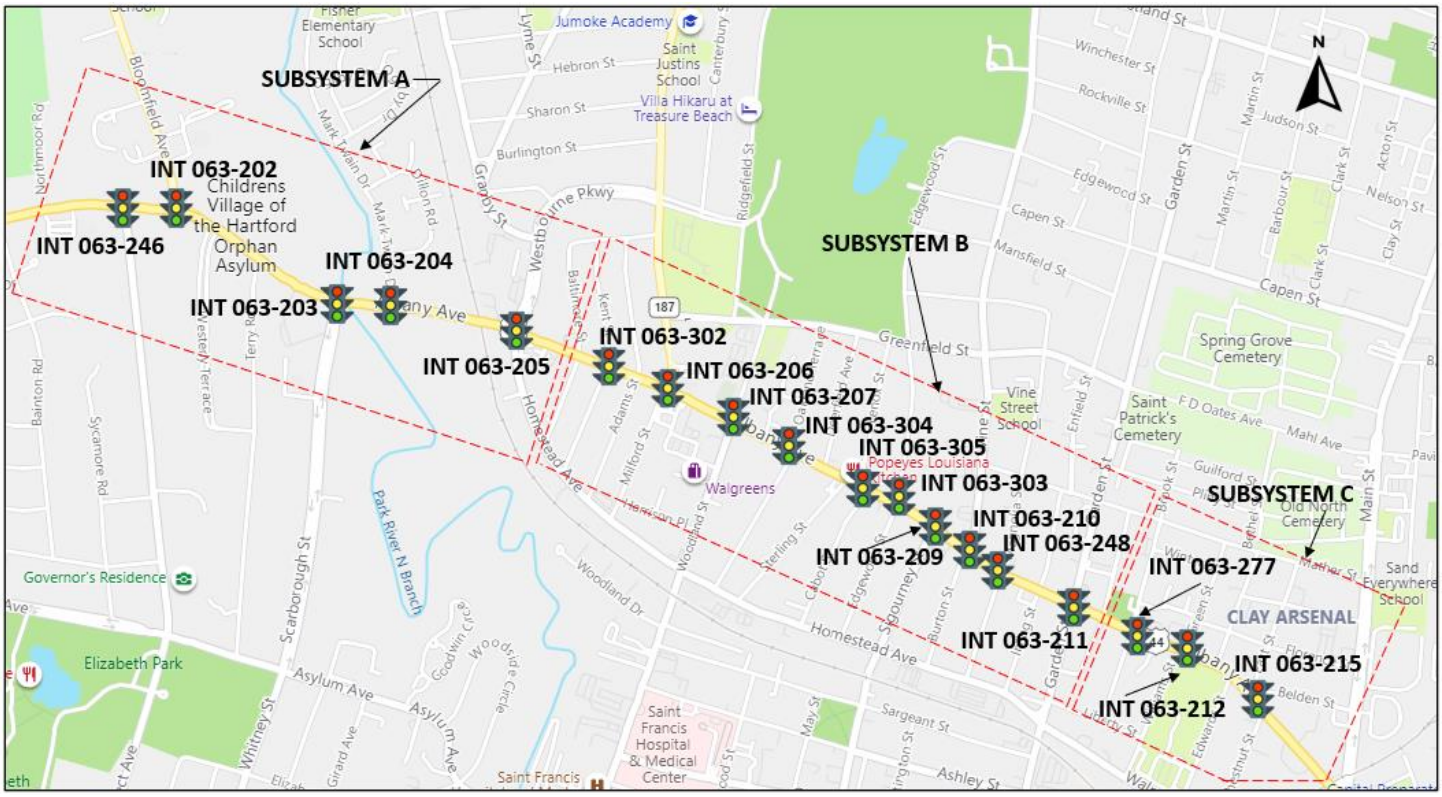


Table 19. Hartford Route 44 Changes to Cycle Lengths and Offsets

Monday – Friday 6 a.m. – 10 p.m.

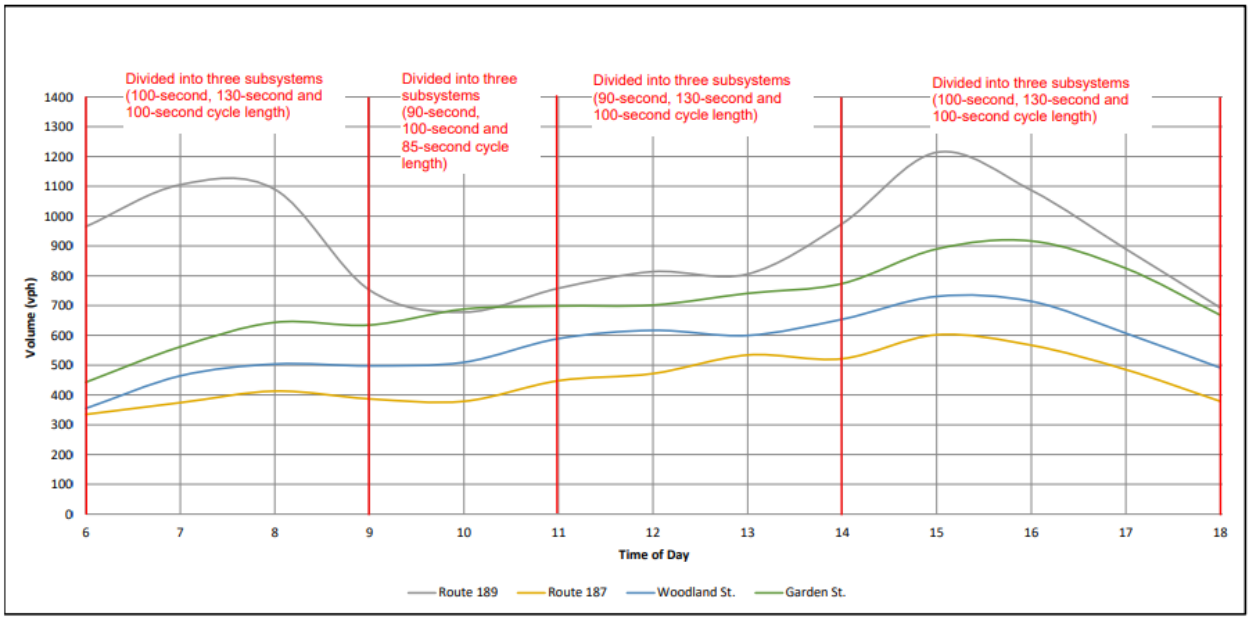
Before Evaluation
Timings (Cycle - Offset)

Intersection No.	Intersection Description	Time of Day 6–7	7–8	8–9	9–10	10–11	11–12	12–13	13–14	14–15	15–16	16–17	17–18	18–19	19–20	20–21	21–22	
063-246	Prospect Avenue	100 - 22			90 - 17					100 - 22					90 - 17			Variable
063-202	Route 189	100 - 51			90 - 40					100 - 51					90 - 40			
063-203	Scarborough Street	100 - 00			90 - 00					100 - 00					90 - 00			
063-204	Mark Twain Drive	100 - 22			90 - 17					100 - 22					90 - 17			
063-205	Westbourne Parkway	100 - 66			90 - 66					100 - 66					90 - 66			
063-302	Kent Street	100 - 73			90 - 00					100 - 73					90 - 00			
063-206	Route 187	130 - 09													90 - 00			
063-207	Woodland Street	130 - 19													90 - 09			
063-304	Oakland Terrace	130 - 00													90 - 00			
063-305	Lenox & Sterling	130 - 00													90 - 00			
063-303	Edgewood Street	130 - 00													90 - 00			
063-209	Sigourney Street	130 - 00													90 - 00			
063-210	Burton & Vine Street	130 - 00													90 - 00			
063-248	Magnolia Street	130 - 00													90 - 00			
063-211	Garden Street	130 - 00													90 - 00			
063-212	Brook Street	130 - 00													90 - 00			
063-277	Williams & Green	130 - 00													90 - 00			
063-215	Belden Street	130 - 00													90 - 00			

Intersection No.	Intersection Description	Time of Day 6–7	7–8	8–9	9–10	10–11	11–12	12–13	13–14	14–15	15–16	16–17	17–18	18–19	19–20	20–21	21–22	
063-246	Prospect Avenue	100 - 22			90 - 17					100 - 22					90 - 17			Variable
063-202	Route 189	100 - 51			90 - 40					100	90 - 40				100 - 51			
063-203	Scarborough Street	100 - 00			90 - 00					100 - 00					90 - 00			
063-204	Mark Twain Drive	100 - 22			90 - 17					100 - 22					90 - 17			
063-205	Westbourne Parkway	100 - 66			90 - 66					100 - 66					90 - 66			
063-302	Kent Street	130 - 00			100	130 - 00										100		
063-206	Route 187	130 - 00			100 - 0	130 - 00										100 -		
063-207	Woodland Street	130 - 00			100 - 0	130 - 00										100 -		
063-304	Oakland Terrace	130 - 00			100 - 0	130 - 00										100 -		
063-305	Lenox & Sterling	130 - 00			100 - 0	130 - 00										100 -		
063-303	Edgewood Street	130 - 00			100 - 0	130 - 00										100 -		
063-209	Sigourney Street	130 - 00			100 - 0	130 - 00										100 -		
063-210	Burton & Vine Street	130 - 00			100 - 0	130 - 00										100 -		
063-248	Magnolia Street	130 - 00			100 - 0	130 - 00										100 -		
063-211	Garden Street	130 - 00			100 - 0	130 - 00										100 -		
063-212	Brook Street	100 - 00			85 - 00	100 - 00										85 -		
063-277	Williams & Green	100 - 00			85 - 00	100 - 00										85 -		
063-215	Belden Street	100 - 75			85 - 59	100 - 75										85 -		

Note: Offsets are omitted in After Evaluation for 100 second cycle due to space limitations.

Figure 33. Hartford Route 44 Critical Volume Chart



Plainville, Route 372

Route 372 in Plainville is a four lane principal corridor providing access to I-84, Route 72, the commercial retail, and residential neighborhoods between intersections. Generally, the changes implemented to improve traffic flow include an increase in cycle lengths to increase overall capacity and a reduction in the number of patterns throughout the day. Route 72 and Cooke Street (Int. 109-220) will remain non-coordinated to better meet the needs of the motorist movement priorities over traffic flow between adjacent intersections. The Cooke Street traffic signal phasing and the Route 72 Westbound off-ramp limit the ability to coordinate this intersection to intersections to the east and west. To improve Route 372 flow for both directions, the increase in cycle length in the midday and p.m. was combined with increasing the number of cycle changes to meet the user needs and priorities. The a.m. and p.m. volumes are essentially the same except for the Route 72 Ramp. The midday volume drop was accommodated by reducing the cycle by 10 seconds. These changes improved operations and increased coordination throughout the day. The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as “variable” for the intersections that run “non-coordinated.”

Figure 34. Plainville Route 372 Location Map

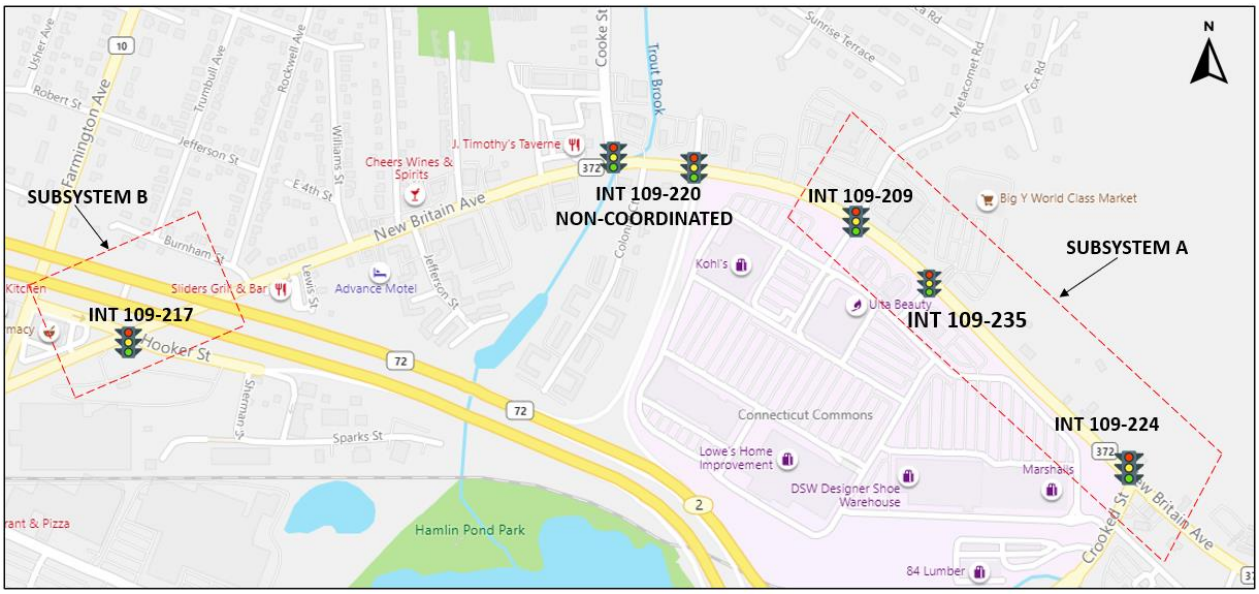


Table 20. Plainville Route 372 Changes to Cycle Lengths and Offsets

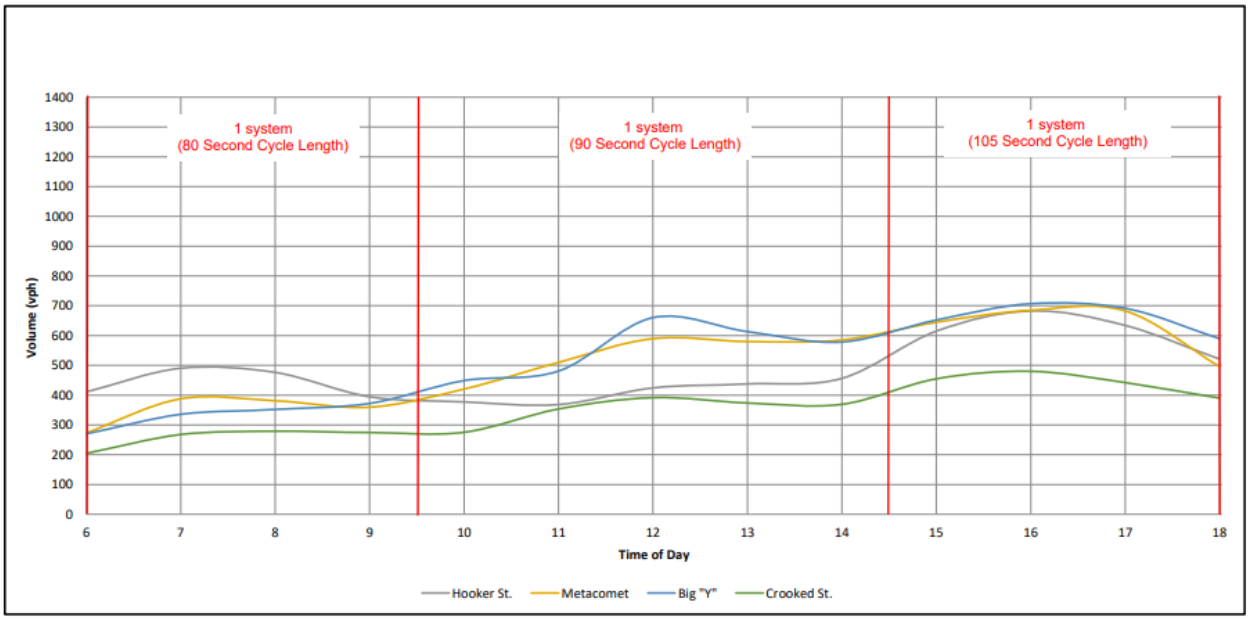
Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation Timings (Cycle - Offset)						
Intersection		Time of Day				
No.	Description	6 7 8 9 10 11	12 13 14	15 16 17	18 19 20 21 22	
109-217	Hooker Street	80 - 29	80 - 70	95 - 87	Variable	
109-220	Cooke Street & Rte 72	80 - 00	Variable			
109-209	Metacomet Road	80 - 23	80 - 68	95 - 08	80 - 23	Variable
109-235	Big 'Y' and Mall Driveway	80 - 23	80 - 68	95 - 08	80 - 23	
109-224	Crooked Street	80 - 60	80 - 35	95 - 90	80 - 60	

After Evaluation Timings (Cycle - Offset)							
Intersection		Time of Day					
No.	Description	6 7 8 9 10 11	12 13 14	15 16 17	18 19 20	21 22	
109-217	Hooker Street	80 - 00	90 - 58	105 - 71	90-58	70-0	Variable
109-220	Cooke Street & Rte 72	Variable	90 - 00	105 - 00	90-00	Var.	
109-209	Metacomet Road	80 - 00	90 - 00	105 - 00	90-00	70-0	
109-235	Big 'Y' and Mall Driveway	80 - 00	90 - 00	105 - 00	90-00	70-0	
109-224	Crooked Street	80 - 00	90 - 20	105 - 15	90-00	70-0	

Note: The second digit offset for 70 second cycle in the After Evaluation is omitted due to space limitations.

Figure 35. Plainville Route 372 Critical Volume Chart



Tolland, Route 195

Route 195 is a four lane minor corridor that is oriented north/south in Tolland. Generally, the changes implemented to improve traffic flow include an increase in cycle length during the p.m. to increase overall capacity and a reduction in the number of patterns throughout the day. Goose and Rhodes (Int. 142-205) will remain non-coordinated during a.m., midday, and off-peak to better meet the needs of the motorist movement priorities over traffic flow between adjacent intersections. Goose and Rhodes traffic signal phasing and user demand limit the ability to coordinate this intersection to intersections to the north. To improve Route 195 flow for both directions, the increase in cycle length was combined with adding Goose and Rhodes to the coordination. The a.m. and midday volumes are much lower than the p.m. The midday volume drop was better suited to remain with a 70 second cycle to provide smooth flow through the corridor. These changes improved operations and increased coordination throughout the day The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as “variable” for the intersections that run “non-coordinated.”

Figure 36. Tolland Route 195 Location Map

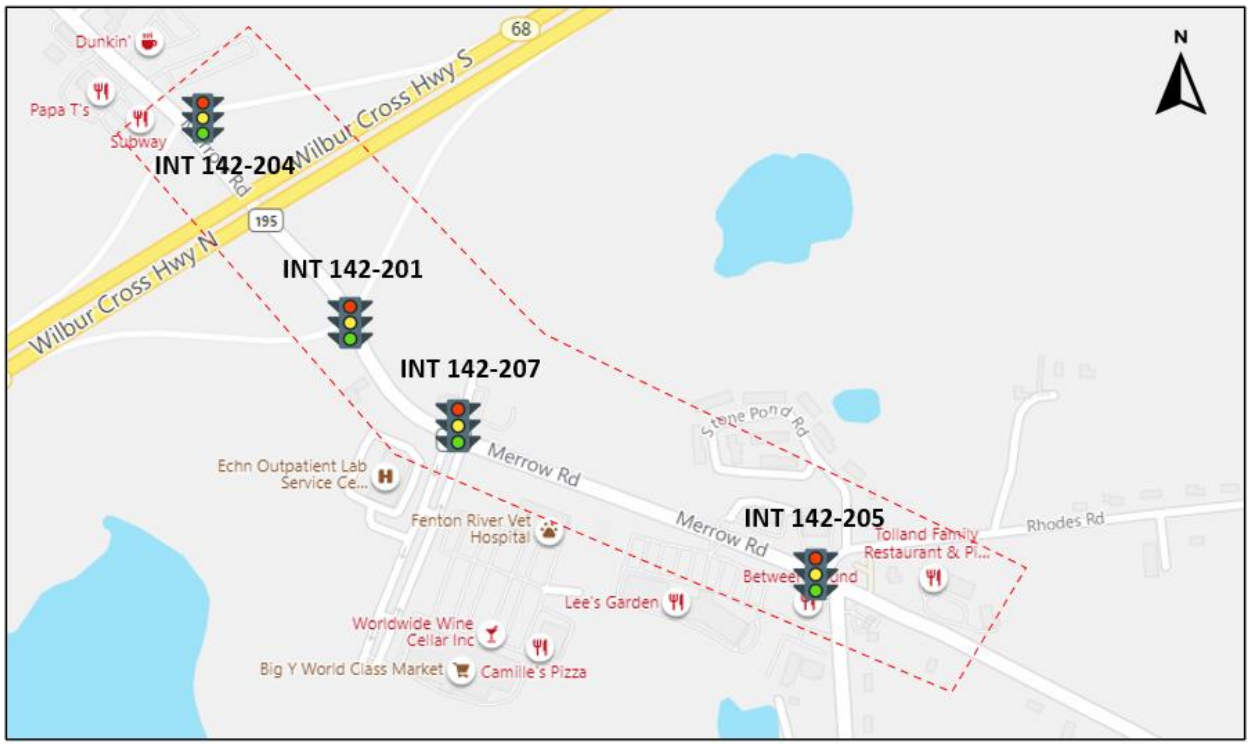


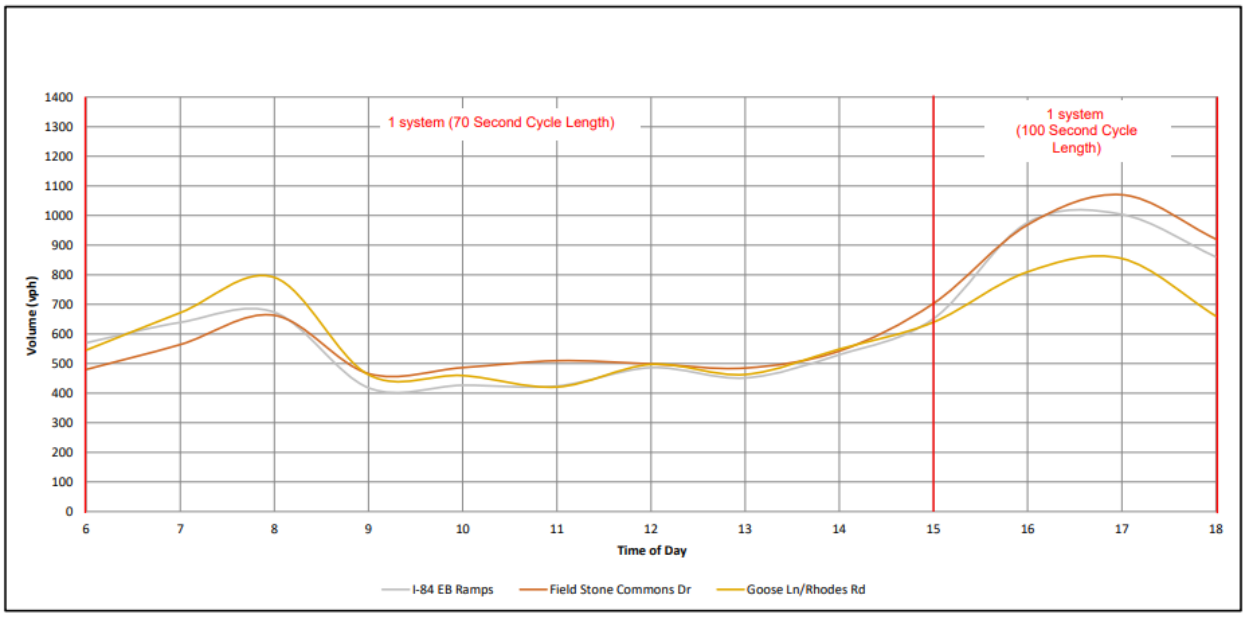
Table 21. Tolland Route 195 Changes to Cycle Lengths and Offsets

Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation Timings (Cycle - Offset)																		
Intersection		Time of Day																
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
142-204	I-84 WB Ramps	70 - 46			80 - 42						70 - 46			80 - 42		70-46		Var.
142-201	I-84 EB Ramps	70 - 61			80 - 61						70 - 61			80 - 61		70 - 61		Var-
142-207	Field Stone Commons	70 - 68			80 - 66						70 - 68			80 - 66		70 - 68		iable
142-205	Goose and Rhodes	Variable																

After Evaluation Timings (Cycle - Offset)																		
Intersection		Time of Day																
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
142-204	I-84 WB Ramps	70 - 45									100 - 47				70 - 45			Variable
142-201	I-84 EB Ramps	70 - 64									100 - 64				70 - 64			
142-207	Field Stone Commons	70 - 64									100 - 64				70 - 64			
142-205	Goose and Rhodes	Variable									100 - 04				Variable			

Figure 37. Tolland Route 195 Critical Volume Chart



Vernon, Route 83

Route 83 is a four lane minor corridor that is oriented north/south in Tolland. Generally, the changes implemented to improve traffic flow include an increase in cycle length for midday and p.m. to increase overall capacity and maintain the small number of patterns throughout the day. The slight midday volume increase through the p.m. was accommodated by increasing the cycle length by 10 seconds. These changes improved operations and increased coordination throughout the day. The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as “variable” for the intersections that run “non-coordinated.”

Figure 38. Vernon Route 83 Location Map

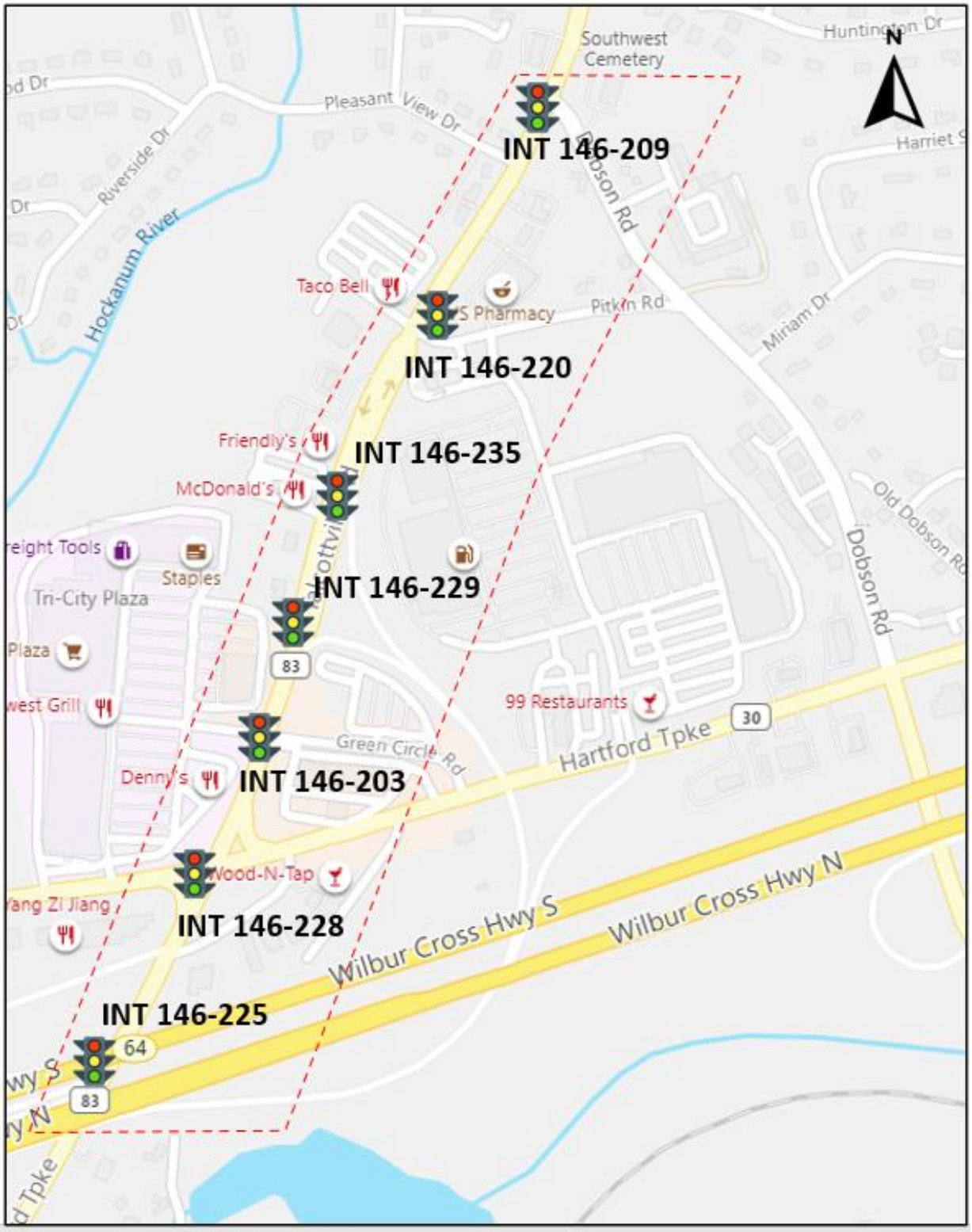


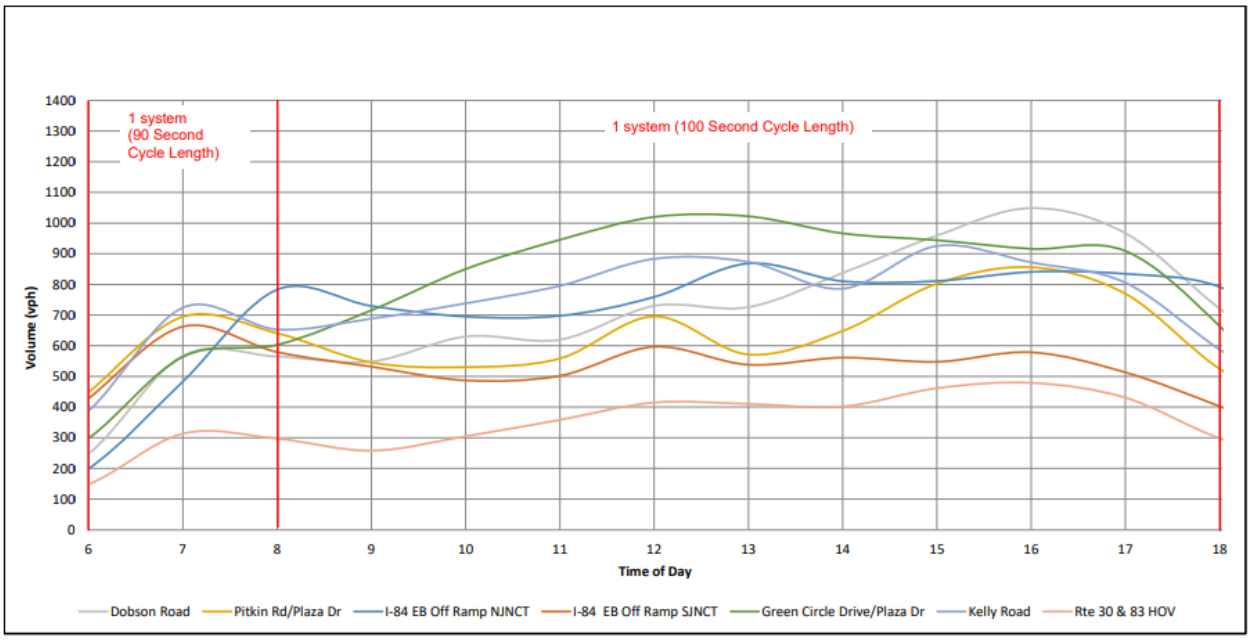
Table 22. Vernon Route 83 Changes to Cycle Lengths and Offsets

Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation Timings (Cycle - Offset)																						
Intersection		Time of Day																				
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
146-209	Dobson Road	90 - 60																70-41	Variable			
146-220	Pitkin Road	90 - 59																70-40				
146-235	I-84 EB Off Ramp N JCT	90 - 59																70-40				
146-229	I-84 EB Off Ramp S JCT	90 - 24																70-12				
146-203	Green Circle Drive	90 - 18																70-69				
146-228	Kelly Road	90 - 11																70-00				
146-225	Route 30 & 83 @ HOV	90 - 29																70-43				

After Evaluation Timings (Cycle - Offset)																						
Intersection		Time of Day																				
No.	Description	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
146-209	Dobson Road	90 - 05		100 - 20														70-31	Variable			
146-220	Pitkin Road	90 - 77		100 - 89														70-26				
146-235	I-84 EB Off Ramp N JCT	90 - 00		100 - 00														70-00				
146-229	I-84 EB Off Ramp S JCT	90 - 00		100 - 00														70-00				
146-203	Green Circle Drive	90 - 00		100 - 00														70-00				
146-228	Kelly Road	90 - 00		100 - 00														70-00				
146-225	Route 30 & 83 @ HOV	90 - 15		100 - 11														70-50				

Figure 39. Vernon Route 83 Critical Volume Chart



Wethersfield, Route 99

Route 99 is a four lane minor corridor that is oriented north/south in Wethersfield. The corridor is an alternate route for I-91. For the past three years, the reconstruction of the nearby I-91 Charter Oak Bridge and I-91 in Wethersfield has added significant volume to the corridor. In the early 2022, the reconstruction entered the final stages limiting the impact on Interstate traffic thus reducing volume on Route 99. Generally, the changes implemented were to improve wait times by reducing cycle lengths by 10 seconds while continuing to maintain better traffic flow. Route 314 (Int. 159-219) will remain non-coordinated to better meet the needs of the motorist movement priorities over traffic flow between adjacent intersections. Route 314 traffic signal phasing and pedestrian activity limit the ability to coordinate this intersection to the southern intersections. Route 3 (Int. 159-203) and Route 175 (Int. 159-222) intersections share the same operating environment with significant pedestrian and motor vehicle activity. The frequency of pedestrian phase activated, and amount of time allocated for the pedestrian phase at intersections Route 3 and Route 175 require a separate Subsystem B. These changes improved operations and increased coordination throughout the day. Table 24 shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as “variable” for the intersections that run “non-coordinated.”

Figure 40. Wethersfield Route 99 Location Map

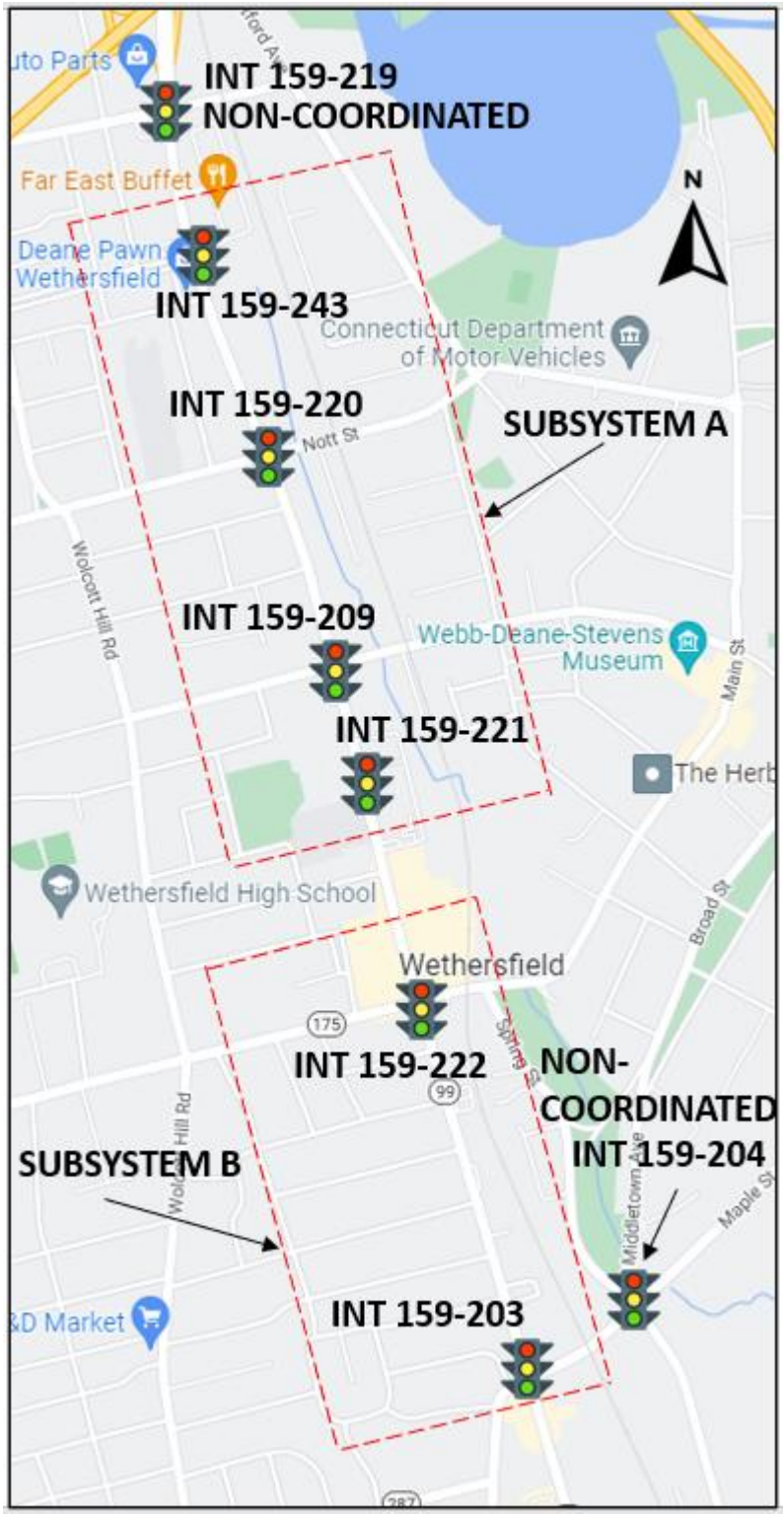


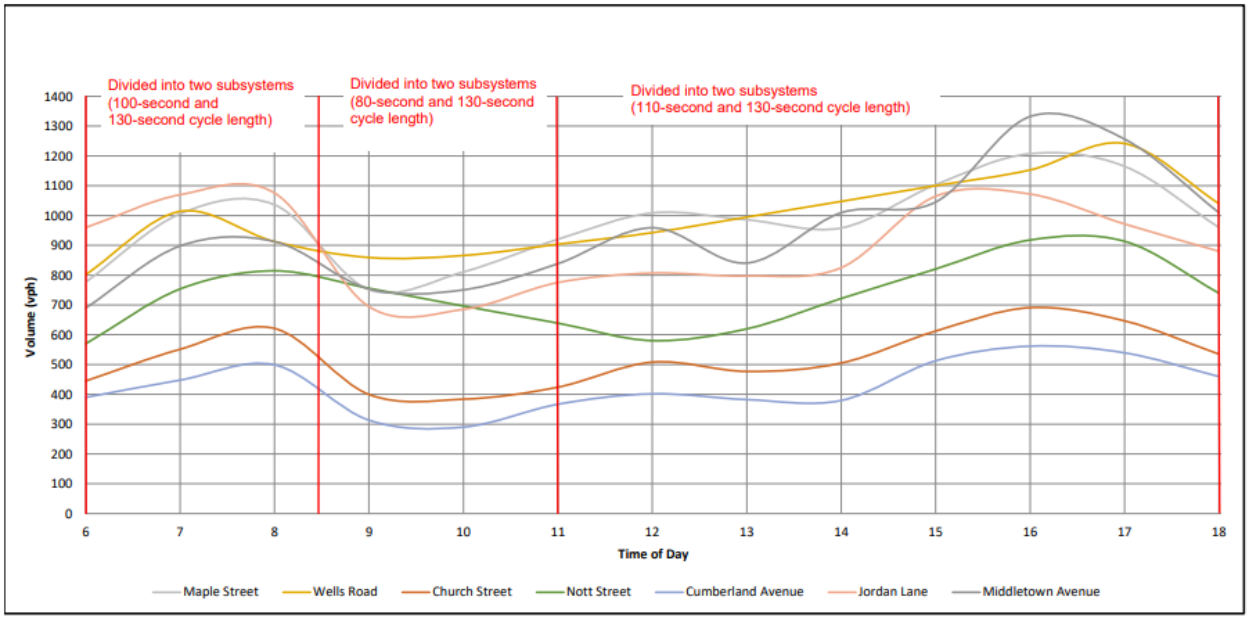
Table 23. Wethersfield Route 99 Changes to Cycle Lengths and Offsets

Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation Timings (Cycle - Offset)					
Intersection		**Time of Day**			
No.	**Description**	6 7 8 9	10 11 12 13 14 15 16 17 18	19 20 21	22
159-219	Rte 314 (Jordan Lane)	100 - 95	120 - 47	80 - 75	Variable
159-243	Cumberland Avenue	100 - 51	120 - 47	80 - 75	
159-220	S.R. 422 (Nott Street)	100 - 57	120 - 116	80 - 39	
159-209	Church Street	100 - 00	120 - 00	80 - 00	
159-221	Beaver Road	100 - 00	120 - 00	80 - 00	
159-222	Rte 175 (Wells Road)	140 - 115		Variable	
159-203	Rt 3 (Maple Street)	140 - 40		Variable	
159-204	Rt 3 @ Middletown Avenue	Variable			

After Evaluation Timings (Cycle - Offset)						
Intersection		**Time of Day**				
No.	**Description**	6 7 8	9 10 11	12 13 14 15 16 17 18	19 20 21	22
159-219	Rte 314 (Jordan Lane)	Variable				
159-243	Cumberland Avenue	100 - 73	80 - 10	110 - 00	70 - 00	Variable
159-220	S.R. 422 (Nott Street)	100 - 31	80 - 39	110 - 40	70 - 40	
159-209	Church Street	100 - 00	80 - 00	110 - 00	70 - 00	
159-221	Beaver Rd	100 - 00	80 - 00	110 - 00	70 - 00	
159-222	Rte 175 (Wells Road)	130 - 109			Variable	
159-203	Rte 3 (Maple Street)	130 - 46			Variable	
159-204	Rt 3 @ Middletown Avenue	Variable				

Figure 41. Wethersfield, Route 99 Critical Volume Chart



Windsor Route 159

Route 159 is a four lane minor corridor that is oriented north/south in Windsor. Generally, the changes implemented to improve traffic flow include an increase in cycle lengths to increase overall capacity and a reduction in the number of patterns throughout the day. Route 218 at Deerfield (Int. 164-227) will remain non-coordinated to better meet the needs of the motorist movement priorities over traffic flow between adjacent intersections. To improve traffic flow on Route 159 for both directions, the increase in cycle length was combined with reducing the number of cycle changes. The a.m. and p.m. volumes are essentially the same except for the directional peak. The directional flow is southbound during the a.m. peak and northbound during the p.m. peak. The midday volume drop was accommodated by reducing the cycle by 10 seconds. These changes improved operations and increased coordination throughout the day. Table 25 shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as “variable” for the intersections that run “non-coordinated.”

Figure 42. Windsor Route 99 Location Map

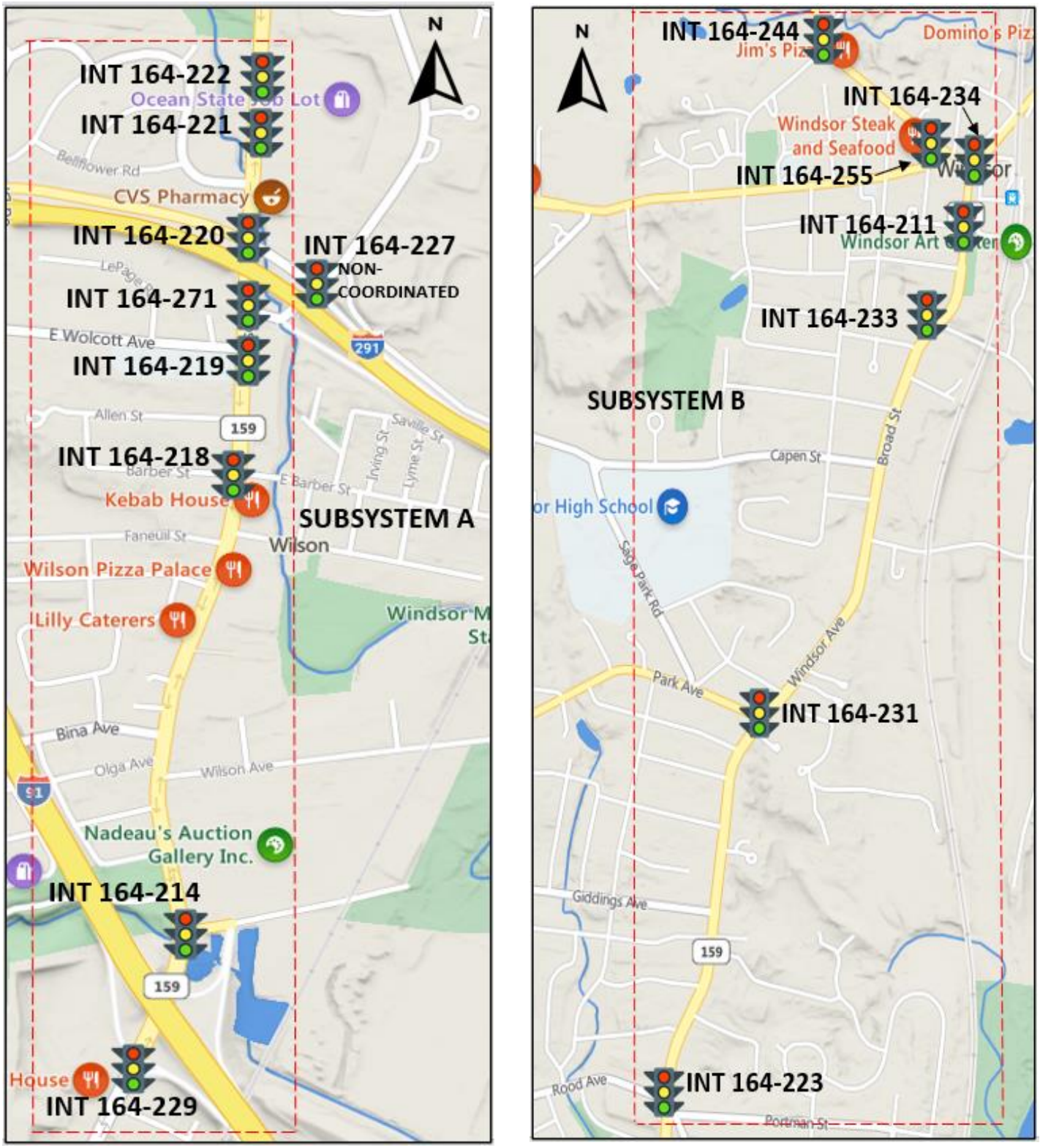


Table 24. Windsor Route 159 Changes to Cycle Lengths and Offsets

Monday – Friday 6 a.m. – 10 p.m.

Before Evaluation
Timings (Cycle - Offset)

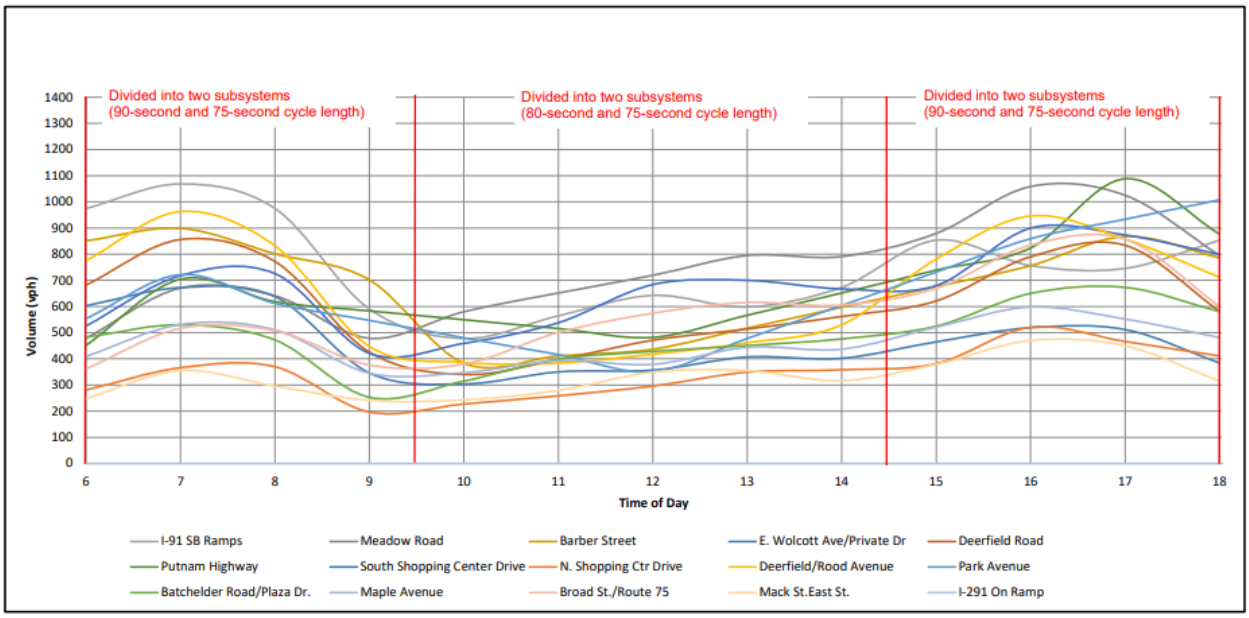
Intersection No.	Intersection Description	Time of Day 6	7 8 9	10 11 12 13 14 15	16 17 18	19 20 21	22
164-229	I-91 SB Ramps	60	60 - 57	60 - 36	65 - 59	60 - 36	Variable
164-214	Meadow Road	60	60 - 43	60 - 36	65 - 07	60 - 36	
164-218	Barber Street	60	60 - 51	60 - 20	65 - 03	60 - 20	
164-219	East Wolcott Avenue	60	60 - 30	60 - 06	65 - 05	60 - 06	
164-271	Deerfield Road	60	60 - 37	60 - 13	65 - 10	60 - 13	
164-220	Rte 218	60	60 - 30	60 - 06	65 - 05	60 - 06	
164-221	Shop Cntr S.	60	60 - 30	60 - 06	65 - 05	60 - 06	
164-222	Shop Cntr N.	60	60 - 27	60 - 06	65 - 05	60 - 06	
164-223	Rood Avenue	65	75 - 17	65 - 20	75 - 00	55 -	Var.
164-231	Rte 178	65	75 - 18	65 - 23	75 - 07	55 -	Var.
164-233	Batchelder Road	65	75 - 52	65 - 24	75 - 37	55 - 23	Variable
164-211	Maple Avenue	65	75 - 59	65 - 24	75 - 37	55 - 20	
164-234	Rte 75	65	75 - 52	65 - 00	75 - 37	55 - 19	
164-255	Rte 305	65	75 - 36	65 - 38	75 - 14	55 - 04	
164-244	Mack Street	65	75 - 00	65 - 38	75 - 51	55 - 30	
164-227	Rte 218 @ Deerfield	Variable					

After Evaluation
Timings (Cycle - Offset)

Intersection No.	Intersection Description	Time of Day 6	7 8 9	10 11 12 13 14	15 16 17 18	19 20 21	22
164-229	I-91 SB Ramps		90 - 65	80 - 45	90 - 89	65 - 28	Variable
164-214	Meadow Road		90 - 77	80 - 57	90 - 18	65 - 00	
164-218	Barber Street		90 - 16	80 - 67	90 - 16	65 - 11	
164-219	East Wolcott Avenue		90 - 00	80 - 00	90 - 00	65 - 00	
164-271	Deerfield Road		90 - 00	80 - 00	90 - 00	65 - 00	
164-220	Rte 218		90 - 00	80 - 00	90 - 00	65 - 00	
164-221	Shop Cntr S.		90 - 00	80 - 00	90 - 00	65 - 00	
164-222	Shop Cntr N.		90 - 00	80 - 00	90 - 00	65 - 00	
164-223	Rood Avenue		75 - 26	75 - 27	75 - 04	75 - 04	
164-231	Rte 178		75 - 22	75 - 22	75 - 22	75 - 22	
164-233	Batchelder Road		75 - 22	75 - 22	75 - 22	75 - 22	
164-211	Maple Avenue		75 - 20	75 - 20	75 - 20	75 - 20	
164-234	Rte 75		75 - 20	75 - 20	75 - 20	75 - 20	
164-255	Rte 305		75 - 00	75 - 00	75 - 00	75 - 00	
164-244	Mack Street		75 - 15	75 - 15	75 - 15	75 - 15	
164-227	Rte 218 @ Deerfield	Variable					

Note: Offsets are omitted in Before Evaluation for 60 and 65 second cycles from 6 a.m. to 6:30 a.m. due to space limitations.

Figure 43. Windsor Route 159 Critical Volume Chart



Windsor/Windsor Locks, Route 75

Route 75 is a four lane minor corridor that is oriented north/south in Windsor Locks. Generally, the changes implemented to improve traffic flow include an increase in cycle length to increase overall capacity and a significant reduction in the number of patterns throughout the day. Schoephoester Road (Int. 164-202) will remain non-coordinated after p.m. peak to better meet the needs of the motorist movement priorities over traffic flow between adjacent intersections. To improve traffic flow on Route 75 for both directions, the increase in cycle length was combined with reducing the number of cycle changes. The a.m. and p.m. volumes are essentially the same except for the directional peak. The directional flow is southbound during the a.m. peak and northbound during the p.m. peak. The midday volume drop was accommodated by reducing the cycle by 10 seconds. These changes improved operations and increased coordination throughout the day The following table shows the before and after coordination schedules applicable to Monday through Friday operations from 6:00 a.m. to 10:00 p.m. These schedules contain a separate block for each pattern. Each block shows the coordinated cycle length followed by the offset (in seconds) for each of the corresponding intersections. The cycle length is listed as “variable” for the intersections that run “non-coordinated.”

Figure 44. Windsor/Windsor Locks Route 75 Location Map

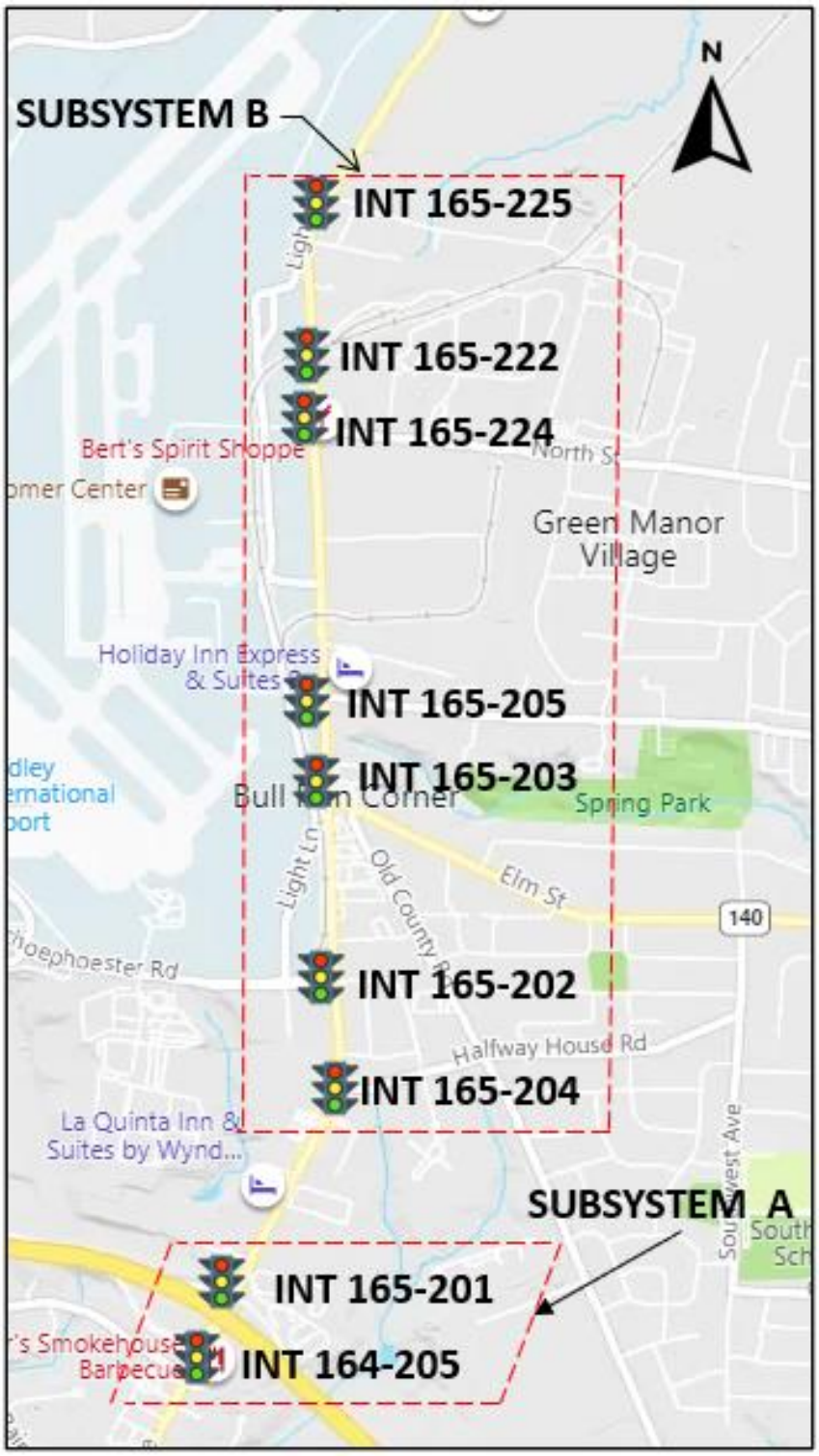


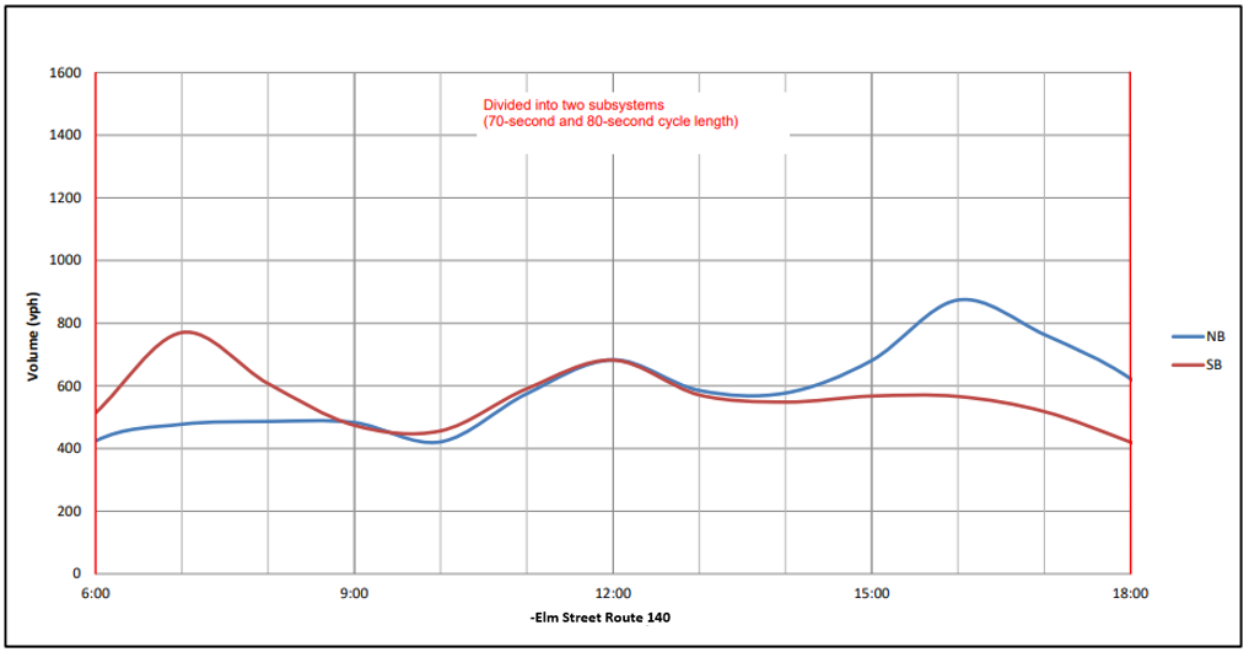
Table 25. Windsor Locks/Windsor Route 75 Changes to Cycle Lengths and Offsets

Monday – Friday 6 am – 10 pm

Before Evaluation Timings (Cycle - Offset)						
Intersection		Time of Day				
No.	Description	6 7 8	9 10 11 12 13 14	15 16 17 18	19 20 21	22
164-205	Rte 20 EB Ramps	55 - 02	65 - 01	65 - 01	55 - 02	Variable
165-201	Rte 20 WB Ramps	55 - 51	65 - 20	65 - 20	55 - 51	
165-204	Halfway House Road	55 - 00	65 - 57	65 - 57	55 - 00	
165-202	Schoephoester Road	Variable				
165-203	Rte 140 (Elm St)	60 - 28	65 - 27	65 - 27	60 - 28	Variable
165-205	Spring Street	60 - 51	65 - 57	65 - 57	60 - 51	
165-224	North Street	60 - 09	65 - 30	65 - 30	60 - 09	
165-222	Ct Air Nat Guard	60 - 18	65 - 04	65 - 04	60 - 18	
165-225	King Spring Road	60 - 40	65 - 24	65 - 24	60 - 40	

After Evaluation Timings (Cycle - Offset)						
Intersection		Time of Day				
No.	Description	6 7 8	9 10 11 12 13 14	15 16 17 18	19 20 21	22
164-205	Rte 20 EB Ramps	70 - 00				Variable
165-201	Rte 20 WB Ramps	70 - 01				
165-204	Halfway House Road	80 - 57			70 - 40	
165-202	Schoephoester Road	80 - 12			Variable	
165-203	Rte 140 (Elm St)	80 - 43			70 - 16	
165-205	Spring Street	80 - 57			70 - 57	
165-224	North Street	80 - 30			70 - 30	
165-222	Ct Air Nat Guard	80 - 45			70 - 45	
165-225	King Spring Road	80 - 06			70 - 06	

Figure 45. Windsor Locks/Windsor Route 75 Critical Volume Chart



Post Implementation Assessment

Upon complete of field fine-tuning, the Consultant conducted travel time runs using Tru-Traffic to report the results of the timing changes. Videos of the travel runs were also collected to view any specific issues that were encountered. The post-implementation travel times were then compared to the initial travel time runs to calculate the improvements. Results are presented by corridor in the following sections of this report.

Corridor Performance Evaluation

The study corridors were evaluated to determine the effectiveness of the timing changes. The corridor evaluations consisted of comparing performance measures from "Before" and "After" studies conducted prior to and post implementation of new signal timings. This chapter provides details on the methodology used to evaluate corridor performance and the results of those evaluations.

Performance Evaluation Data

Travel time study data were used to calculate a variety of performance measures. Corridor performance results were based on data from "Before" and "After" travel time studies conducted for each study corridor. The corridor travel time studies occurred during multiple periods throughout the weekdays (Monday through Friday) for "Before" and "After" conditions of implementing the new signal timing plans. The periods for the travel time studies were:

- a.m. peak period – 7:00 a.m. – 8:30 a.m. (Weekday) – All study corridors
- midday peak period – 11:30 a.m. – 1:00 p.m. (Weekday) – All study corridors
- p.m. peak period – 4:00 p.m. – 6:00 p.m. (Weekday) – All study corridors
- Saturday midday period – 11:00 a.m. – 3:00 p.m. -Varied by corridor

The "Before" travel time studies were conducted in February 2020 prior to implementation of new signal timings. The "After" travel time studies were conducted in September/October 2021 after implementation and fine-tuning of new signal timings. The travel time studies were conducted with a pilot vehicle traveling each study corridor for a minimum of three travel time runs for each period "Before" and "After" conditions. During these studies, travel time data was collected with Tru-Traffic software. Tru-Traffic, accompanied with a GPS device, is used to track a vehicle's position while it travels along a corridor. It records the position of the vehicle every second and uses that information, along with inputs on the locations of intersections, to calculate performance measures along the corridor such as number of stops and travel time.

Performance Measures

The following performance measures were identified to be reported for this project *See Appendix A:

- **Travel Time** – The time to travel from one end of a study corridor to the other.
- **Corridor Performance**
  - Delay – The amount of time corridor through traffic is slowed or stopped by traffic signals on a trip from one end of a study corridor to the other.
  - Fuel Consumption – The estimated amount of fuel consumed by through traffic on a trip from one end of a study corridor to the other.
  - Emissions – The estimated emissions produced by through traffic on a trip from one end of a study corridor to the other.
  - Stops – The number of stops experienced by through traffic on a study corridor on a trip from one end of a study corridor to the other.

User Savings Analysis

This travel time performance measure was reported as the change in travel time between "Before" and "After" conditions by comparing the average time to travel from one end of a study corridor to

the other end during the study periods. Travel time was extracted from the travel time run data in Tru-Traffic for each period of "Before" and "After" conditions. A reduction in travel time, delay, and fuel consumption lower costs to motorists. These direct savings were tracked and quantified to determine community savings. Corridor performance measures of delay, fuel consumption, emissions, and stops were calculated using output from Tru-Traffic travel time runs, year 2019 local demographics, and formulas developed by Indiana Department of Transportation & Purdue University[x]. Each of the corridor performance measures was reported as the change between "Before" and "After" conditions.

Summary of Performance Measures and User Savings

Travel Time Results

Table 26. Travel Time Comparison from "Before" to "After" Conditions

Corridor	Time Period	Travel Time Change (Min:Sec)		
		NB/EB	SB/WB	Total
Avon/Simsbury, Route 44, Route 202, & Route 10	a.m.	-1:20	-1:17	-2:37
	midday	-0:26	0:25	-0:01
	p.m.	-1:01	-1:14	-2:15
Berlin, Route 372	a.m.	-0:57	0:07	-0:50
	midday	-0:48	-0:56	-1:44
	p.m.	0:00	-2:21	-2:21
Bloomfield, Route 218	a.m.	0:06	-0:23	-0:17
	midday	0:19	-0:15	0:04
	p.m.	0:08	-1:01	-0:53
*East Hartford, Route 518	a.m.	-	-	-
	midday	-	-	-
	p.m.	-	-	-
Enfield, Route 5	a.m.	-0:16	0:04	-0:12
	midday	0:48	-0:29	0:19
	p.m.	-0:51	-0:33	-1:24
Glastonbury, Route 94	a.m.	0:03	-0:12	-0:09
	midday	-0:02	0:31	0:29
	p.m.	-0:27	-0:10	-0:37
Hartford, Route 44	a.m.	-0:09	-1:34	-1:43
	midday	-0:55	-0:02	-0:57
	p.m.	0:28	-2:17	-1:49
Plainville, Route 372	a.m.	-0:27	-1:22	-1:49
	midday	0:07	-0:16	-0:09
	p.m.	-0:42	-0:17	-0:59

Corridor	Time Period	Travel Time Change (Min:Sec)		
		NB/EB	SB/WB	Total
Tolland, Route 195	a.m.	0:07	-0:04	0:03
	midday	-0:05	0:01	-0:04
	p.m.	-0:19	0:08	-0:11
Vernon, Route 83	a.m.	0:00	0:17	0:17
	midday	0:17	0:11	0:28
	p.m.	-2:12	0:36	-1:36
Wethersfield, Route 99	a.m.	-0:18	0:20	0:02
	midday	-0:46	-0:19	-1:05
	p.m.	-0:38	-0:45	-1:23
Windsor, Route 159	a.m.	-0:51	0:17	-0:34
	midday	0:08	-0:03	0:05
	p.m.	-0:06	-0:02	-0:08
Windsor/Windsor Locks, Route 75	a.m.	-0:46	-0:05	-0:51
	midday	-0:28	-0:10	-0:38
	p.m.	-1:23	-0:31	-1:54

Note: It should be noted in Table 27, negative time values represent a decrease in travel time during the "After" condition as compared to the "Before" condition; Positive time values represent an increase in travel time during the "After" condition.

*Route 518 evaluation determined signal system coordination is not required and subsequent performance measures are not necessitated.

Corridor Performance Results

The total benefits to corridor performance from "Before" to "After" conditions are summarized in Table 28 below. The corridor performance results show sizable reductions for motorist delay, fuel consumption, stops, and emissions. The reductions to delay and fuel for the optimization of these thirteen (13) corridors are estimated to save Connecticut motorists over 74,000 hours of delay and $2.3 million in user (time and fuel) costs per year. More detailed corridor performance measures, including a breakdown by study period, are provided in Appendix E.

Table 27. Corridor Performance Results

Corridor	Annual Savings (From "Before" to "After" Conditions)				
	Delay (Veh-hours)	Fuel (Gallons)	Stops (Veh-stops)	Emissions (kg)	User Savings ($)
Avon/Simsbury, Route 44, Route 202 & Route 10	21,400	18,600	1,210,000	164,000	$668,000
Berlin, Route 372	7,800	6,800	590,000	60,000	$244,000
Bloomfield, Route 218	5,000	4,300	(140,000)	38,000	$155,000
*East Hartford, Route 518	-	-	-	-	-
Enfield, Route 5	2,800	2,500	110,000	22,000	$88,000
Glastonbury, Route 94	2,000	1,700	(90,000)	15,000	$62,000
Hartford, Route 44	7,100	6,200	1,280,000	55,000	$222,000
Plainville, Route 372	7,900	6,900	560,000	60,000	$246,000
Tolland, Route 195	900	800	(70,000)	7,000	$29,000
Vernon, Route 83	2,400	2,100	(150,000)	18,000	$74,000
Wethersfield, Route 99	8,800	7,700	570,000	67,000	$275,000
Windsor, Route 159	200	200	120,000	2,000	$7,000
Windsor/Windsor Locks, Route 75	7,700	6,700	500,000	59,000	$240,000
Total	**74,000**	**64,500**	**4,490,000**	**567,000**	**$2,310,000**

Note: User savings in Table 18 are based on reductions in delay, fuel, and local demographic information. Values in parentheses shall be

considered to have a negative effect.

*Route 518 evaluation determined signal system coordination is not required and subsequent performance measures are not necessitated.

Table 28. Corridor Average Travel Speed Increase

Corridor	Avg. Speed Before (mph)	Avg. Speed After (mph)	Increase in Travel Speed %
Avon/Simsbury, Route 44, Route 202, & Route 10	23.1	25.8	12%
Berlin, Route 372	21.5	26.9	25%
Bloomfield, Route 218	30.6	32.7	8%
*East Hartford, Route 518	-	-	-
Enfield, Route 5	27.4	28.9	5%
Glastonbury, Route 94	21.3	22.0	3%
Hartford, Route 44	16.3	17.3	6%
Plainville, Route 372	21.1	25.5	21%
Tolland, Route 195	27.8	29.3	5%
Vernon, Route 83	26.0	24.6	-6%
Wethersfield, Route 99	24.8	26.8	10%
Windsor, Route 159	30.4	30.1	-1%
Windsor/Windsor Locks, Route 75	26.6	30.0	13%

* Route 518 evaluation determined signal system coordination is not required and subsequent performance measures are not necessitated

Study Benefit-to-Cost Comparison

The total user savings cost for phase 2 is $2,310,000 annually. The benefits over the next five years are expected to be $11.55 million. The costs of the timing plan evaluation Phase 2 corridors are estimated to be $100,000 per year. This yields benefit-to-cost ratio of 23:1.

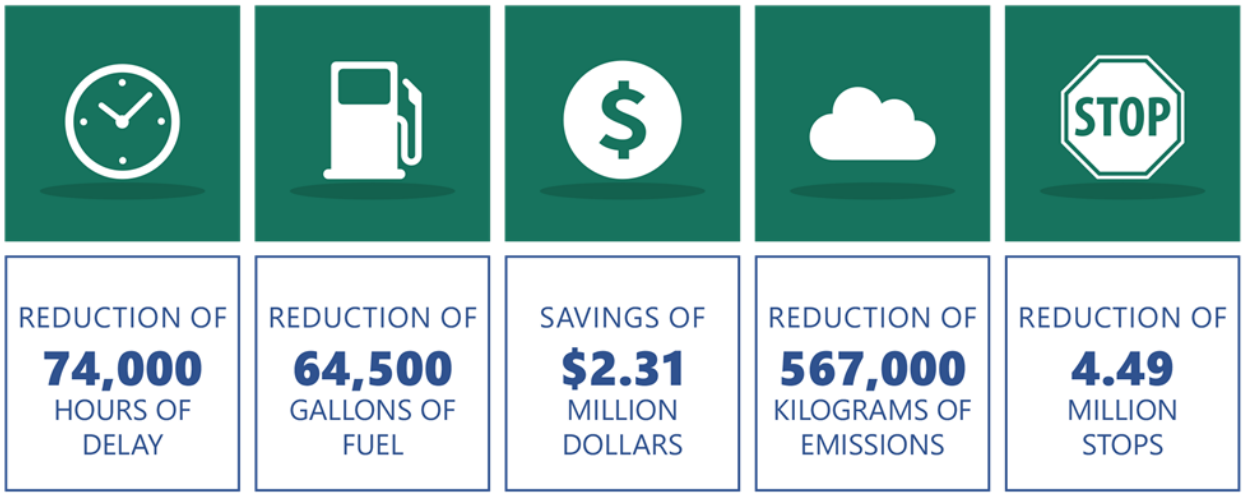
These benefits are measured and published on CTDOT Green Light Web Page

Summary/Conclusion

The evaluation of the CTSS coordination timing resulted in a wide range of transportation, economic, and environmental improvements that increase user quality of life. The project offers better flow to improve safety, a reduction in congestion, fuel savings and improved air quality for the CRCOG corridors**.**

It is determined that significant cost savings are achieved in all thirteen (13) study corridors. On average, travel speeds were increased from an average of 24.7 mph to 26.7 mph, an increase of 8%. The number of stops were reduced by 4.49 million per year and travel times were reduced by an average of 10%. The Phase 2 reductions to delay and fuel are estimated to save Connecticut motorists over 74,000 hours of delay and $2.31 million in user (time and fuel) costs per year. More detailed corridor performance measures, including a breakdown by study period, are provided in the appendices. Figure 46 below summarizes Phase 2 performance measures improvements.

Figure 46. Phase 2 Corridors Performance Measures Results Summary



Note: Performance measures were summarized for times of the day when travel time studies were completed. This means that benefits derived from the timing plan evaluation effort are only reported for those hours during the day in which travel time studies were conducted. For the remaining hours of the day and weekends, it is expected that additional benefits are realized that are not reported in this study since travel studies were not collected during those times of day.

References

[ii] Synchro/SimTraffic Version 11.0 [Computer Software]. (2019). Cubic Transportation Systems

[iii] Tru-Traffic 10.0 [Computer Software] (2019). Tru-Traffic, Gregory Bullock.

[iv] National Academies of Sciences, Engineering, and Medicine 2020. *Performance-Based Management of Traffic Signals*. Washington, DC: The National Academies Press. https://doi.org/10.17226/25875. p. 5

[v] National Academies of Sciences, Engineering, and Medicine 2015. *Signal Timing Manual - Second Edition*. p. 3-19

[vi] Connecticut Crash Data Repository [Computer Software]. University of Connecticut

[vii] National Academies of Sciences, Engineering, and Medicine 2015. *Signal Timing Manual - Second Edition*. p. 5-19

[viii] National Academies of Sciences, Engineering, and Medicine 2015. *Signal Timing Manual - Second Edition*. p. 5-26

[ix] TSDWIN Version 4.3.5 [Computer Software]. (2017). Fortran Traffic

[x]Day, C.M., T.M. Brennan, A.M. Hainen, S.M. Remias, H. Premachandra, J.R. Sturdevant, G. Richards, J.S. Wasson, and D.M. Bullock. "Quantifying Benefits of Traffic Signal Retiming." Joint Transportation Research Program Project No. C-36-661 File No. 8-7-10 SPR-3208. Conducted in cooperation with the Indiana Department of Transportation and the U.S. Department of Transportation Federal Highway Administration. Purdue University West Lafayette, IN 47905. October 2010.

Appendix A
Phase 2 Intersection List

Avon/Simsbury Route 44, Route 202, & Route 10						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
128-226	A	RTE 44 & 202 AT HOFFMAN AUTO	L	NONE	Copper Aerial	Naztec V41
128-204	A	RTE 44 & 202 AT RTE 167 (BUSHYHILL RD)	V, L	L	Copper Aerial	Naztec V41
004-206	B[1]	RTE 44 & 202 AT FARM VALLEY MALL	V, L	L	Copper Aerial	Naztec V41
004-227	B	RTE 44 & 202 AT CVS & FOX HOLLOW	V	NONE	Copper Aerial	Naztec V41
004-209	B	RTE 44 & 202 AT NOD BROOK MALL	V	NONE	Copper Aerial	Naztec V41
004-205	B	RTE 44 & 202 AT SHOP CNTR	L	NONE	Copper Aerial	Naztec V41
004-207	B	RTE 44 & 202 AT LAWRENCE AVENUE	V	NONE	Copper Aerial	Naztec V41
004-230	B	RTE 44 & 202 AT CLIMAX ROAD	V	NONE	Copper Aerial	Naztec V41
004-211	B	RTE 44 & 202 AT DARLING DRIVE	V	NONE	Copper Aerial	Naztec V41
004-219	B	RTE 44 & 202 AT ENSIGN DRIVE	V	NONE	Copper Aerial	Naztec V41
004-202	C	RTE 44 & 202 & RTE 10 AT OLD FARMS ROAD	V, L	L	Copper Aerial	Naztec V41
004-218	C	RTE 44 & 10 AT OLD AVON VILLAGE	V	NONE	Copper Aerial	Naztec V41
004-222	C	RTE 44 & 10 AT RIVERPARK	V	NONE	Copper Aerial	Naztec V41
004-201	C	RTE 44 & 10 AT NOD ROAD	L, M	L	Copper Aerial	Naztec V41
L = Loop, V = Video (Non recording), M = Microwave						

Berlin Route 372						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
007-212	A	RTE 372 AT ROUTE 71	L	NONE	Copper Aerial	Cubic V85
007-247	A	RTE 372 AT MAIN & DEPOT RD	L, M	NONE	Copper Aerial	Cubic V85
007-223	A	RTE 372 AT PORTERS PASS	L	L	Copper Aerial	Cubic V85
007-248	A	RTE 372 AT LOWER LANE	L	NONE	Copper Aerial	Cubic V85
007-240	A	RTE 372 AT MASSIRIO DRIVE	L	NONE	Copper Aerial	Cubic V85
007-226	A	RTE 372 AT WEBSTER SQUARE ROAD	L, V	NONE	Copper Aerial	Cubic V85
L = Loop, V = Video (Non-recording), M = Microwave						

Bloomfield Route 218						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
011-224	NONE	RTE 218 AT CIGNA	V, L	L	Radio	Cubic V85
011-218	NONE	RTE 218 AT ROUTE 189	V	V	Radio	Cubic V85
011-238	A	RTE 218 AT PROSPECT STREET	V	NONE	Copper Aerial	Cubic V85
011-244	A	RTE 218 AT NORTHWESTERN DRIVE	V	NONE	Copper Aerial	Cubic V85
011-230	A	RTE 218 AT TYLER STREET	V	NONE	Copper Aerial/Underground	Cubic V85
011-231	A	RTE 218 AT COPACO MAIN ENTRANCE	V	NONE	Copper Underground	Cubic V85
011-232	A	RTE 218 AT COPACO EAST ENTRANCE	V	NONE	Copper Underground	Cubic V85
011-233	A	RTE 218 AT GRANBY STREET	V	NONE	Copper Underground	Cubic V85
L=Loops, V=Video (Non-recording)						

East Hartford Route 518						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
042-222	NONE	RTE 518 @ RENTSCHLERS & SILVER LANE	V	NONE	Copper Underground	Naztec V61
042-257	NONE	RTE 518 @ I-84 EB RAMPS	V	V	Copper Underground	Naztec V61
042-235	NONE	RTE 518 @ I-84 WB RAMPS	V	NONE	Copper Underground	Naztec V61
V = Video (Non recording)						

Enfield Route 5 North Section						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
048-204	A	RTE 5 AT FREW TERRACE	L	NONE	Copper Aerial	Naztec V41
048-203	A	RTE 5 AT FRANKLIN STREET	V	NONE	Copper Aerial	Naztec V41
048-205	A	RTE 5 AT HIGH STREET	V	V	Copper Aerial	Naztec V41
048-206	NONE	RTE 5 AT RTE 220 (ELM STREET)	V	V	Copper Aerial	Naztec V41
048-207	B	RTE 5 AT ALDEN & BELMONT AVENUE	V	V	Copper Aerial	Naztec V41
048-236	B	RTE 5 AT PARKER STREET	V	NONE	Copper Aerial	Naztec V41
048-235	B	RTE 5 AT MONTANO ROAD	V	NONE	Copper Aerial	Naztec V41
048-209	B	RTE 5 AT BRAINARD & SUNSET DRIVE	V	V	Copper Aerial	Naztec V41
048-247	NONE	RTE 5 AT I-91 SB RAMPS	V	NONE	Copper Aerial	Naztec V41
048-226	NONE	RTE 5 AT I-91 NB RAMPS	V	NONE	Copper Aerial	Naztec V41
L = Loop, V = Video (Non-recording)						

Glastonbury Route 94						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
053-211	A	RTE 94 AT RT 2 EB OFF RAMP	V	NONE	Copper Underground	Cubic V85
053-225	A	RTE 94 AT RT 2 EB ON RAMP	L	NONE	Copper Underground	Cubic V85
053-210	NONE	RTE 94 AT WESTERN BOULEVARD	L	L	Copper Underground	Cubic V85
053-220	B	RTE 94 AT OAKWOOD DRIVE	L	NONE	Copper Underground	Cubic V85
053-213	B	RTE 94 AT EASTERN BOULEVARD	L	NONE	Copper Underground	Cubic V85
L = Loop, V = Video (Non-recording)						

Hartford Route 44 Albany Avenue						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
063-246	A	ROUTE 44 AT PROSPECT AVENUE	L	NONE	Copper Underground	Naztec V61
063-202	A	ROUTE 44 AT ROUTE 189	V, L	L	Copper Underground	Naztec V61
063-203	A	ROUTE 44 AT SCARBOROUGH ST	V	NONE	Copper Underground	Naztec V61
063-204	A	ROUTE 44 AT MARK TWAIN DR	V	NONE	Copper Underground	Naztec V61
063-205	A	ROUTE 44 AT HOMESTEAD AVE	V	NONE	Copper Underground	Naztec V61
063-302	B	ROUTE 44 AT KENT STREET	V	NONE	Copper Underground	Naztec V61
063-206	B	ROUTE 44 AT ROUTE 187	V	NONE	Copper Underground	Naztec V61
063-207	B	ROUTE 44 AT WOODLAND ST	V	NONE	Copper Underground	Naztec V61
063-304	B	ROUTE 44 AT OAKLAND TERRACE	V	NONE	Copper Underground	Naztec V61
063-305	B	ROUTE 44 AT LENOX & STERLING	V	NONE	Copper Underground	Naztec V61
063-303	B	ROUTE 44 AT EDGEWOOD ST	V	NONE	Copper Underground	Naztec V61
063-209	B	ROUTE 44 AT SIGOURNEY ST	V	NONE	Copper Underground	Naztec V61
063-210	B	ROUTE 44 AT BURTON & VINE ST	V	NONE	Copper Underground	Naztec V61
063-248	B	ROUTE 44 AT MAGNOLIA ST	V	NONE	Copper Underground	Naztec V61
063-211	B	ROUTE 44 AT GARDEN STREET	V	NONE	Copper Underground	Naztec V61
063-212	C	ROUTE 44 AT BROOK STREET	L	NONE	Copper Underground	Naztec V61
063-277	C	ROUTE 44 AT WILLIAMS & GREEN STREET	L	NONE	Copper Underground	Naztec V61
063-215	C	ROUTE 44 AT BELDEN STREET	L	NONE	Copper Underground	Naztec V61
L = Loops, V = Video (Non-recording)						

Plainville Route 372						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Communications**	**Controller**
109-217	B	RTE 372 AT HOOKER ST.	L	L	Copper Underground	Naztec V41
109-220	NONE	RTE 372 AT COOKE ST.	L	NONE	Copper Aerial/Underground	Naztec V41
109-209	A	RTE 372 AT METACOMET	L	NONE	Copper Aerial	Naztec V41
109-235	A	RTE 372 AT BIG "Y"	L	NONE	Copper Aerial	Naztec V41
109-224	A	RTE 372 AT CROOKED ST.	L	NONE	Copper Aerial	Naztec V41
L = Loop						

Tolland Route 195						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
142-204	A	RTE 195 AT I-84 WB RAMPS	V	V	Copper Underground	Naztec V41
142-201	A	RTE 195 AT I-84 EB RAMPS	V	V	Copper Underground	Naztec V41
142-207	A	RTE 195 AT FIELD STONE	V	V	Copper Underground	Naztec V41
142-205	A*	RTE 195 AT GOOSE LANE	V	V	Copper Underground	Naztec V41
L = Loop, V=Video (Non-recording)						

Vernon Route 83						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
146-209	A	RTE 83 AT DOBSON ROAD	L	NONE	Copper Underground	Naztec V41
146-220	A	RTE 83 AT PITKIN ROAD	L, V	NONE	Copper	Naztec V41
146-235	A	RTE 83 AT I-84 EB OFF RAMP NORTH JUNCTION	L,	NONE	Copper Underground	Naztec V41
146-229	A	RTE 83 AT I-84 EB OFF RAMP SOUTH JUNCTION	L	NONE	Copper Underground	Naztec V41
146-203	A	RTE 83 AT GREEN CIRCLE DRIVE	V	NONE	Copper Underground	Naztec V41
146-228	A	RTE 83 AT KELLY ROAD	L	L	Copper Underground	Naztec V41
146-225	A	RTE 83 AT HOV RAMP	V	NONE	Copper Underground	Naztec V41
L = Loop, V = Video (Non-recording)						

Wethersfield Route 99						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
159-219	NONE	RTE 99 AT RTE. 314 (JORDAN)	V	V	Copper Aerial	Naztec V61
159-243	A	RTE 99 AT CUMBERLAND AVE	V	NONE	Copper Aerial	Naztec V61
159-220	A	RTE 99 AT S.R. 422 (NOTT ST.)	V	NONE	Copper Aerial	Naztec V61
159-209	A	RTE 99 AT CHURCH STREET	L	NONE	Copper Aerial	Naztec V61
159-221	A	RTE 99 AT BEAVER ROAD	L	NONE	Copper Aerial	Naztec V61
159-222	B	RTE 99 AT RTE 175 (WELLS RD)	L	NONE	Copper Aerial	Cubic V85
159-203	B	RTE 99 AT RTE 3 (MAPLE ST)	L, V	V	Copper Aerial	Naztec V61
159-204	NONE	RTE 3 AT MIDDLETOWN RD	L	L	Copper Aerial	Cubic V85
L = Loop, V = Video (Non-recording)						

Windsor Route 159						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Field Communications**	**Controller**
164-229	A	RTE 159 AT I-91 SB RAMPS	L	NONE	Copper Underground	Naztec V41
164-214	A	RTE 159 AT MEADOW RD	L	NONE	Copper Aerial/Underground	Naztec V41
164-218	A	RTE 159 AT BARBER STREET	L	NONE	Copper Aerial	Naztec V41
164-219	A	RTE 159 AT E. WOLCOTT	L	NONE	Copper Aerial	Naztec V41
164-271	A	RTE 159 AT DEERFIELD RD	L	NONE	Copper Aerial/Underground	Naztec V41
164-220	A	RTE 159 AT RTE 218	L	L	Copper Underground	Naztec V41
164-221	A	RTE 159 AT SHOP CNTR S.	L	NONE	Copper Aerial/Underground	Naztec V41
164-222	A	RTE 159 AT SHOP CNTR N.	L	NONE	Copper Aerial	Naztec V41
164-223	B	RTE 159 AT ROOD AVENUE	L	L	Copper Aerial	Naztec V41
164-231	B	RTE 159 AT RTE 178	L	L	Copper Aerial	Naztec V41
164-233	B	RTE 159 AT BATCHELDER	L	NONE	Copper Aerial	Naztec V41
164-211	B	RTE 159 AT MAPLE AVE	L	NONE	Copper Aerial/Underground	Naztec V41
164-234	B	RTE 159 AT RTE 75	L	NONE	Copper Underground	Naztec V41
164-255	B	RTE 75 AT RTE 305	V	NONE	Copper Underground	Naztec V41
164-244	B	RTE 75 AT MACK STREET	L, M	NONE	Copper Underground	Naztec V41
164-227	NONE	RTE 218 AT DEERFIELD RD	L	NONE	Copper Underground	Naztec V41
L = Loop, V = Video (Non-recording), M = MICROWAVE						

Windsor/ Windsor Locks Route 75						
Intersection #	**Subsystem**	**Location**	**Detection**	**Artery Detection**	**Communications**	**Controller**
164-205	A	RTE 75 AT RTE 20 EB RAMPS	V	NONE	Copper Aerial/Underground	Cubic V85
165-201	A	RTE 75 AT RTE 20 WB RAMPS	V	NONE	Copper Aerial/Underground	Cubic V85
165-204	B	RTE 75 AT HALFWAY HOUSE ROAD	V	NONE	Copper Underground	Cubic V85
165-202	B	RTE 75 AT SCHOEPHOESTER ROAD	V	V	Copper Underground	Cubic V85
165-203	B	RTE 75 AT RTE 140 (ELM ST)	V	NONE	Copper Underground	Cubic V85
165-205	B	RTE 75 AT SPRING STREET	L	NONE	Copper Underground	Cubic V85
165-224	B	RTE 75 AT NORTH STREET	L	NONE	Copper Underground	Cubic V85
165-222	B	RTE 75 AT FRM CT NAT GUARD	NONE	NONE	Copper Aerial/Underground	Cubic V85
165-225	B	RTE 75 AT KING SPRING ROAD	L, V	NONE	Copper Aerial	Cubic V85
L = Loop, V = Video (Non-recording)						

Appendix B
Phase 2 Travel Time Runs Comparison

Route 44 & Route 202 (West & East Main Street), Avon/Simsbury, from Auto Park to Nod Road										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	EB	21.8	25.6	3.8	17%	487	407	-80	4.7	3.7
	WB	24.8	30.1	5.3	22%	423	346	-77	4.3	1.3
MID	EB	22.1	23.3	1.2	5%	473	447	-26	5.0	4.3
	WB	25.6	24.1	-1.5	-6%	407	432	25	3.7	4.3
PM	EB	22.9	26.5	3.6	16%	456	395	-61	4.0	2.7
	WB	21.7	25.4	3.7	17%	484	410	-74	4.0	4.0
Average:		**23.1**	**25.8**	**2.7**	**12%**	**455**	**406**	**-293**	**4.3**	**3.4**

Route 372 (Farmington Avenue / Mill Street), Berlin, from Route 71 to Webster Square Road										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	EB	23.8	31.8	7.9	33%	196	139	-57	1.7	0.0
	WB	25.3	25.2	-0.2	-1%	174	181	7	1.7	1.3
MID	EB	22.1	28.9	6.8	31%	202	154	-48	1.7	0.8
	WB	21.4	30.3	8.9	41%	206	150	-56	2.3	0.5
PM	EB	20.7	20.9	0.2	1%	214	214	0	2.3	2.7
	WB	15.6	24.5	8.9	57%	325	184	-141	3.3	1.3
Average:		**21.5**	**26.9**	**5.4**	**25%**	**220**	**170**	**-295**	**2.2**	**1.1**

Route 218 (Cottage Grove Road), Bloomfield, from Prospect Street to Granby Street										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	EB	26.8	25.8	-1.0	-4%	179	185	6	1.7	2.3
	WB	32.2	37.3	5.1	16%	151	128	-23	0.3	0.0
MID	EB	32.2	28.3	-3.9	-12%	151	170	19	0.7	1.5
	WB	35.3	38.6	3.3	9%	139	124	-15	0.3	0.3
PM	EB	31.5	28.9	-2.6	-8%	157	165	8	0.7	1.7
	WB	25.7	37.3	11.6	45%	189	128	-61	1.3	0.0
Average:		**30.6**	**32.7**	**2.1**	**8%**	**161**	**150**	**-66**	**0.8**	**1.0**

Route 5 North Section (Enfield Street), Enfield, from Frew Terrace to I-91 NB Ramps										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	NB	26.7	27.2	0.5	2%	331	315	-16	2.3	2.3
	SB	28.0	29.5	1.5	5%	291	295	4	0.7	1.7
MID	NB	28.5	25.1	-3.4	-12%	301	349	48	1.7	3.0
	SB	28.3	31.2	3.0	10%	304	275	-29	2.3	1.3
PM	NB	23.0	26.5	3.5	15%	374	323	-51	4.0	2.3
	SB	29.8	33.6	3.8	13%	289	256	-33	1.7	1.3
Average		**27.4**	**28.9**	**1.5**	**5%**	**315**	**302**	**-77**	**2.1**	**2.0**

Route 44 (Albany Avenue), Hartford, from Prospect Avenue to Belden Street										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total ΔTT (sec)**	Avg # of Stops Before	Avg # of Stops After
AM	EB	17.6	18.2	0.5	3%	408	399	-9	6.0	5.0
	WB	14.5	19.7	5.1	35%	466	372	-94	7.0	4.8
MID	EB	15.5	17.3	1.8	11%	476	421	-55	7.0	4.5
	WB	17.5	16.9	-0.6	-4%	449	447	-2	6.3	5.0
PM	EB	18.4	14.8	-3.7	-20%	469	497	28	7.7	7.0
	WB	14.1	17.1	3.0	21%	563	426	-137	10.7	6.0
Average:		**16.3**	**17.3**	**1.0**	**6%**	**472**	**427**	**-269**	**7.4**	**5.4**

Route 94 (Hebron Avenue), Glastonbury, from Route 2 Eastbound Off Ramp to Eastern Boulevard										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total ΔTT (sec)**	Avg # of Stops Before	Avg # of Stops After
AM	EB	24.6	23.7	-0.9	-4%	119	122	3	1.3	1.0
	WB	19.8	21.2	1.4	7%	145	133	-12	1.0	1.7
MID	EB	19.3	20.5	1.2	6%	144	142	-2	2.0	1.5
	WB	23.5	20.0	-3.5	-15%	121	152	31	1.0	1.7
PM	EB	17.8	21.6	3.8	21%	159	132	-27	1.3	1.3
	WB	22.6	25.1	2.5	11%	123	113	-10	1.3	1.0
Average:		**21.3**	**22.0**	**0.7**	**3%**	**135**	**132**	**-17**	**1.3**	**1.4**

Route 372 (New Britain Avenue), Plainville, from Hooker Street to Crooked Street										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	EB	25.8	31.4	5.6	22%	158	131	-27	1.0	0.7
	WB	18.3	30.6	12.3	67%	223	141	-82	2.3	1.5
MID	EB	23.8	22.9	-0.9	-4%	171	178	7	1.3	1.3
	WB	18.2	19.5	1.2	7%	231	215	-16	2.7	1.7
PM	EB	20.4	26.2	5.8	29%	208	166	-42	2.3	1.3
	WB	19.8	22.6	2.8	14%	208	191	-17	1.3	1.3
Average:		**21.1**	**25.5**	**4.5**	**21%**	**200**	**170**	**-177**	**1.8**	**1.3**

Tolland Route 195 From I-84 WB Ramps to Fieldstone Commons										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	EB	34.9	28.6	-6.3	-18%	32	39	7.0	0.0	0.3
	WB	27.2	30.2	3.0	11%	41	37	-4.0	0.3	0.3
MID	EB	25.9	29.4	3.5	14%	43	38	-5.0	0.0	0.0
	WB	25.9	25.4	-0.5	-2%	43	44	1.0	0.0	0.0
PM	EB	22.8	37.2	14.4	63%	49	30	-19.0	0.7	0.7
	WB	30.2	24.8	-5.4	-18%	37	45	8.0	0.7	0.7
Average:		**27.8**	**29.3**	**1.5**	**5%**	**41**	**39**	**-12.0**	**0.3**	**0.3**

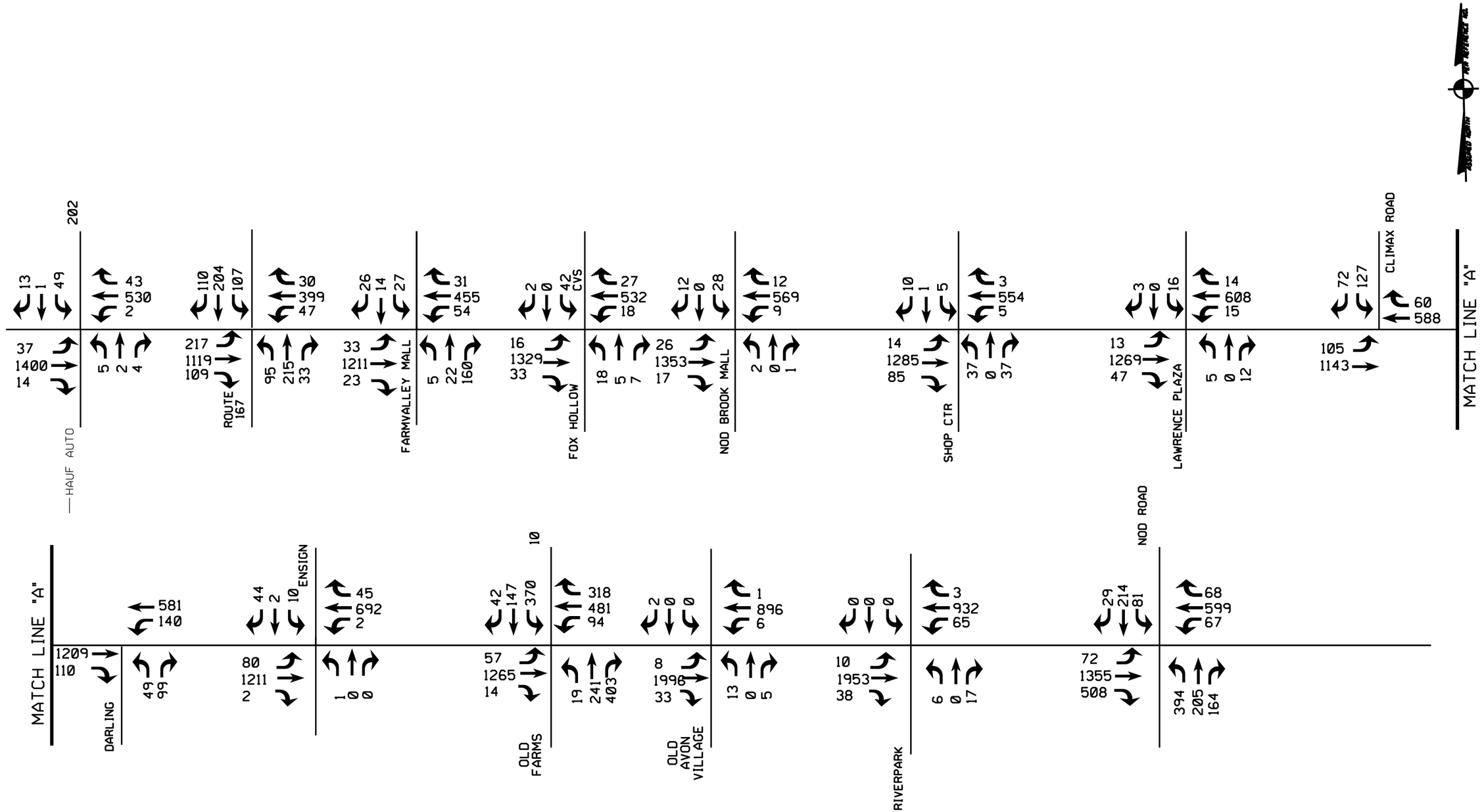
Route 83 (Talcottville Road), Vernon, from HOV Ramps to Dobson Road										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	NB	25.2	24.4	-0.8	-3%	107	107	0	0.7	1.3
	SB	31.5	26.3	-5.2	-17%	81	98	17	0.7	1.3
MID	NB	27.0	22.7	-4.3	-16%	96	113	17	0.7	1.3
	SB	29.3	26.2	-3.1	-11%	87	98	11	1.0	1.3
PM	NB	11.1	25.7	14.6	131%	232	100	-132	4.3	1.7
	SB	31.9	22.0	-9.8	-31%	81	117	36	0.0	1.3
Average:		**26.0**	**24.6**	**-1.5**	**-6%**	**114**	**106**	**-51**	**1.2**	**1.4**

Route 99, Wethersfield, from Route 3 (Maple Street) to Route 314 (Jordan Lane)										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	NB	27.3	29.3	2.0	7%	247	231	-16	2.0	1.7
	SB	30.4	20.8	-9.5	-31%	199	326	127	1.3	4.0
MID	NB	25.9	30.8	4.9	19%	240	229	-11	1.0	1.5
	SB	22.3	25.7	3.4	15%	307	263	-44	2.7	3.0
PM	NB	22.7	29.4	6.7	30%	295	227	-68	2.7	1.7
	SB	20.2	24.6	4.4	22%	245	280	35	3.0	1.7
Average:		**24.8**	**26.8**	**2.0**	**10%**	**256**	**259**	**23**	**2.1**	**2.3**

Route 159 (Windsor Avenue), Windsor, from I-91 SB Ramps to Mack Street										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	NB	29.2	29.7	0.4	2%	491	483	-8	4.3	2.0
	SB	31.3	31.5	0.1	0%	459	455	-4	3.7	3.0
MID	NB	32.1	27.3	-4.9	-15%	447	526	79	3.0	4.0
	SB	31.4	32.1	0.6	2%	460	445	-15	4.0	4.0
PM	NB	27.1	28.2	1.1	4%	529	506	-23	5.0	4.7
	SB	31.3	31.7	0.4	1%	456	451	-5	2.7	3.3
Average:		**30.4**	**30.1**	**-0.4**	**-1%**	**474**	**478**	**24**	**3.8**	**3.5**

Route 75, Windsor Locks/Windsor, from Route 20 Eastbound Ramps to King Spring Road										
Period	Direction	Avg Speed Before (mph)	Avg Speed After (mph)	Δ Avg Speed (mph)	% change in Avg Speed	Travel Time (TT) Before (sec)	Travel Time (TT) After (sec)	**Total** ΔTT (sec)	Avg # of Stops Before	Avg # of Stops After
AM	NB	27.8	33.1	5.3	19%	291	245	-46	2.3	1.0
	SB	27.3	27.3	0.0	0%	302	297	-5	1.7	3.7
MID	NB	29.2	32.7	3.5	12%	276	248	-28	1.7	0.7
	SB	25.5	26.3	0.8	3%	316	306	-10	3.0	4.0
PM	NB	23.3	30.8	7.5	32%	346	263	-83	4.3	1.0
	SB	26.5	29.6	3.1	12%	304	273	-31	3.0	2.3
Average:		**26.6**	**30.0**	**3.4**	**13%**	**306**	**272**	**-203**	**2.7**	**2.1**

Appendix C
Phase 2 Traffic Volumes



AVON/SIMSBURY SYSTEM
ROUTE 44, ROUTE 202, ROUTE 10

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:DATE$

DESIGNER/DRAFTER: N. JONES
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

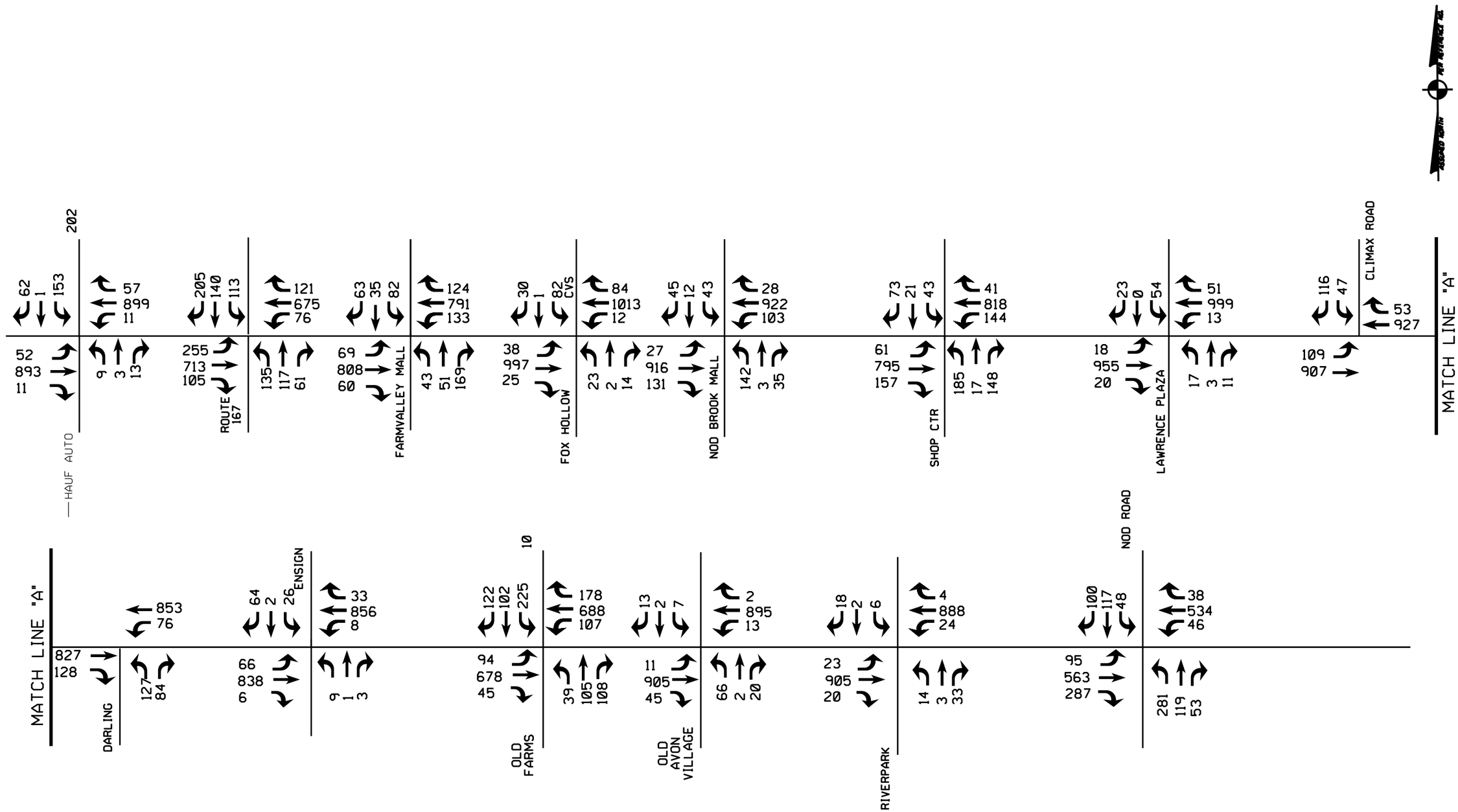
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL

TOWN: AVON SIMSBURY

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



AVON/SIMSBURY SYSTEM
ROUTE 44, ROUTE 202, ROUTE 10

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: $DATE$

DESIGNER/DRAFTER: N. JONES
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

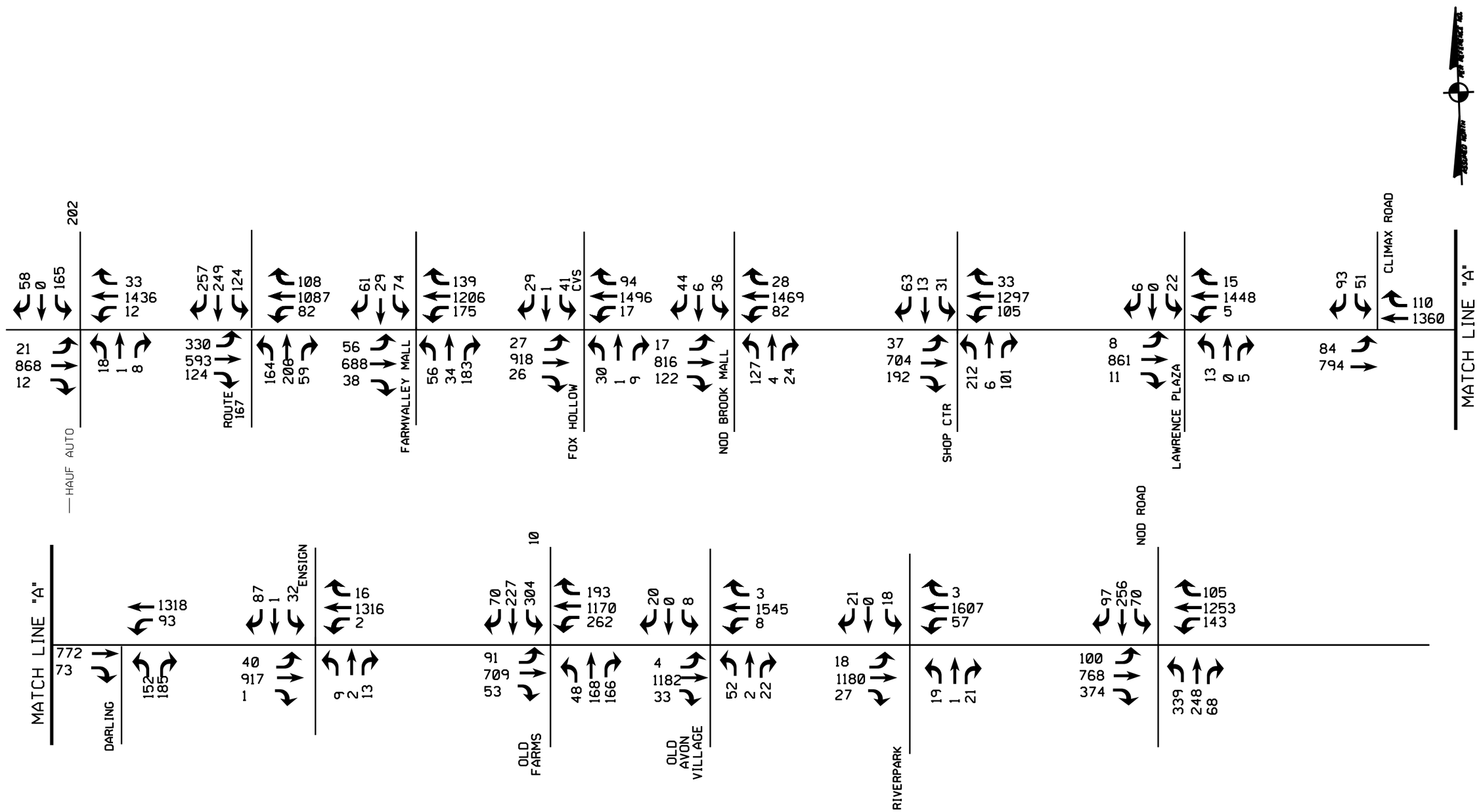
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: AVON SIMSBURY

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



AVON/SIMSBURY SYSTEM
ROUTE 44, ROUTE 202, ROUTE 10

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:$DATE$

DESIGNER/DRAFTER: N. JONES
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

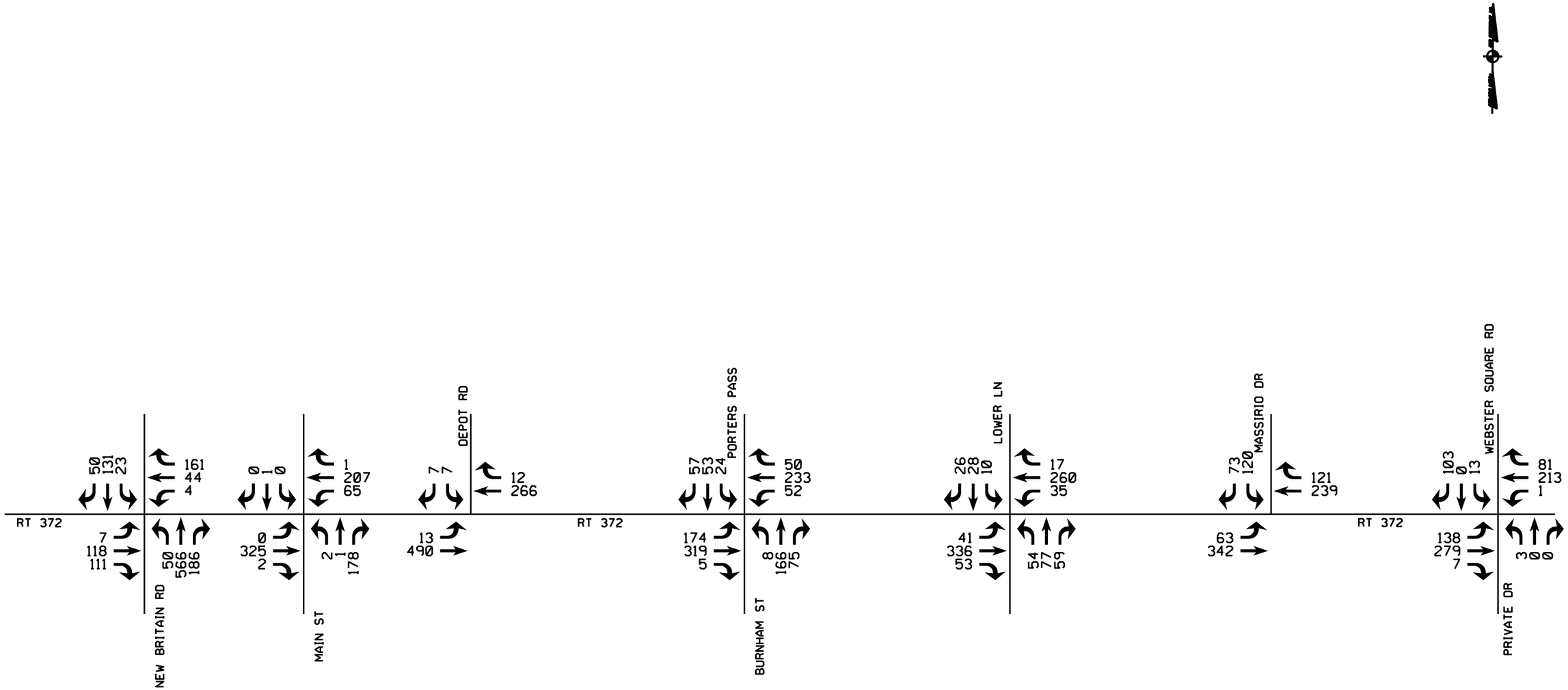
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: AVON SIMSBURY

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



BERLIN ROUTE 372 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

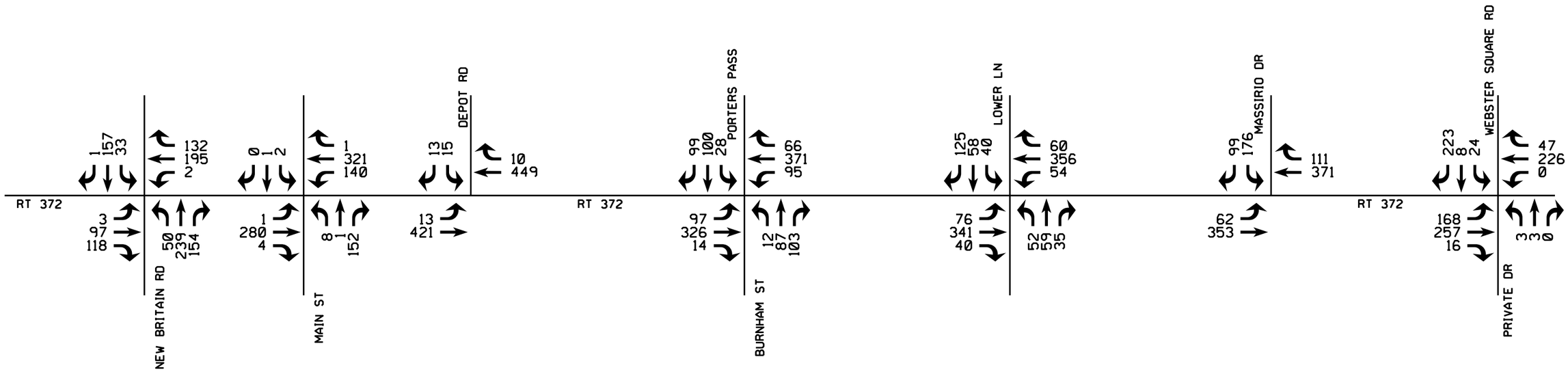
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: BERLIN

DRAWING TITLE:
2018-2020 TRAFFIC VOLUMES
AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 1



BERLIN ROUTE 372 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

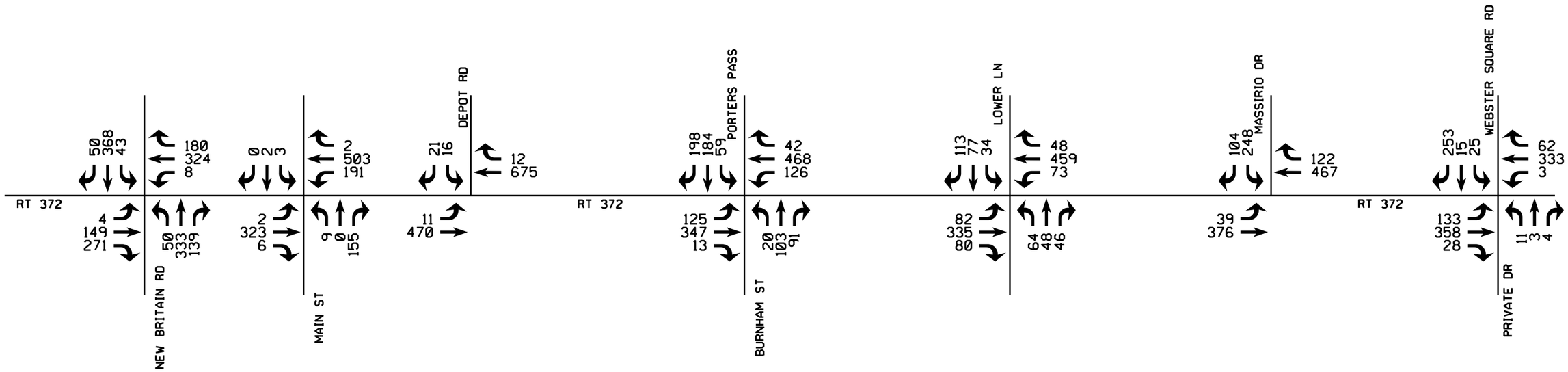
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: BERLIN

DRAWING TITLE:
2018-2020 TRAFFIC VOLUMES
MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 2



BERLIN ROUTE 372 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

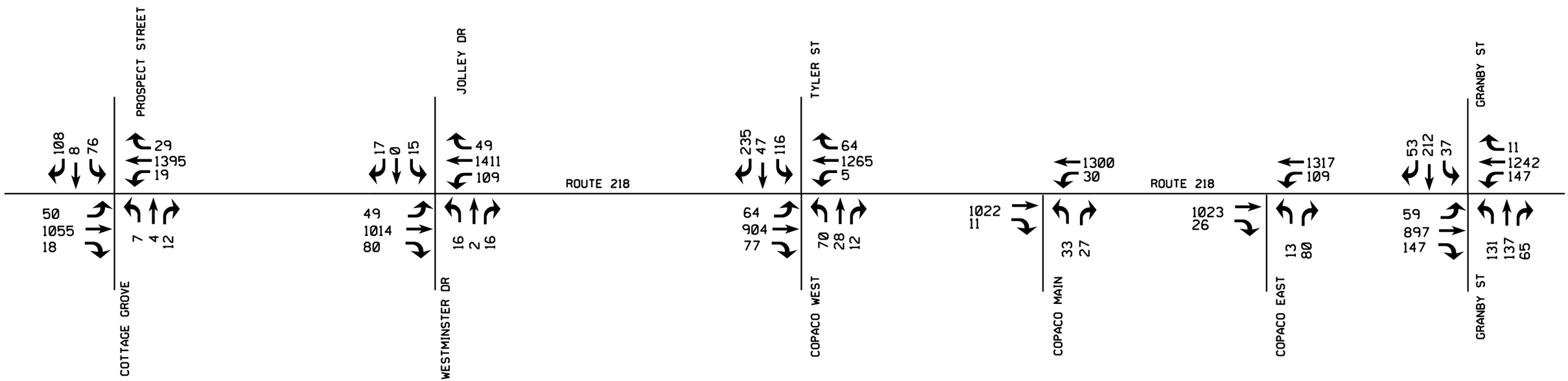
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COORDINATION

TOWN: BERLIN

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 2



BLOOMFIELD ROUTE 218 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

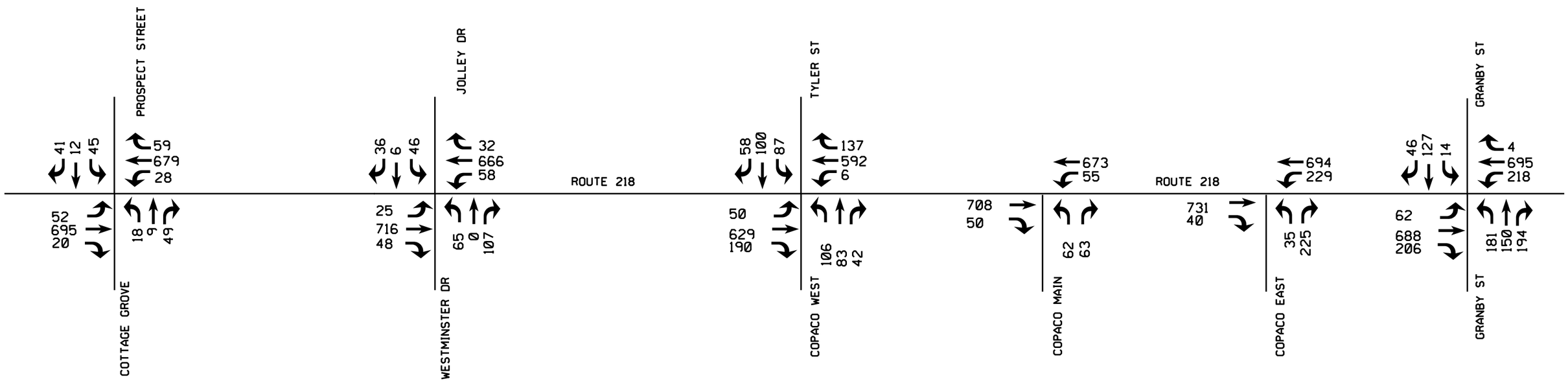
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: BLOOMFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



BLOOMFIELD ROUTE 218 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

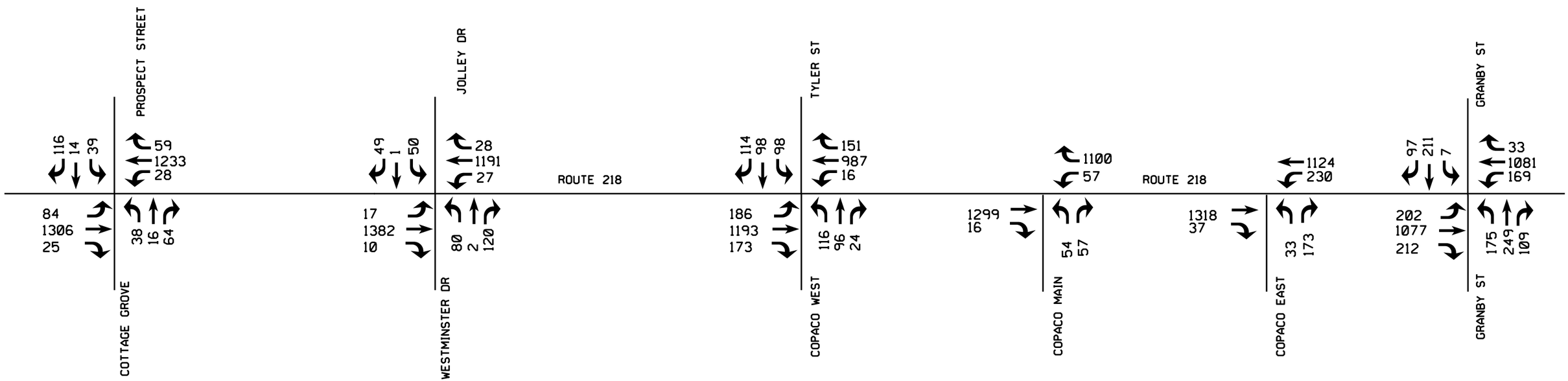
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: BLOOMFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



BLOOMFIELD ROUTE 218 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

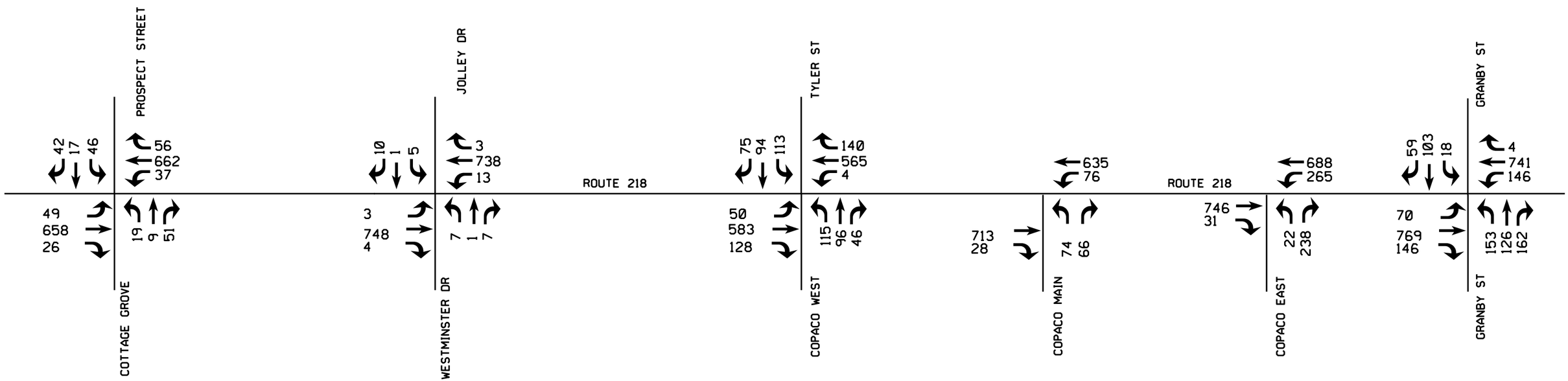
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COORDINATION

TOWN: BLOOMFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



BLOOMFIELD ROUTE 218 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

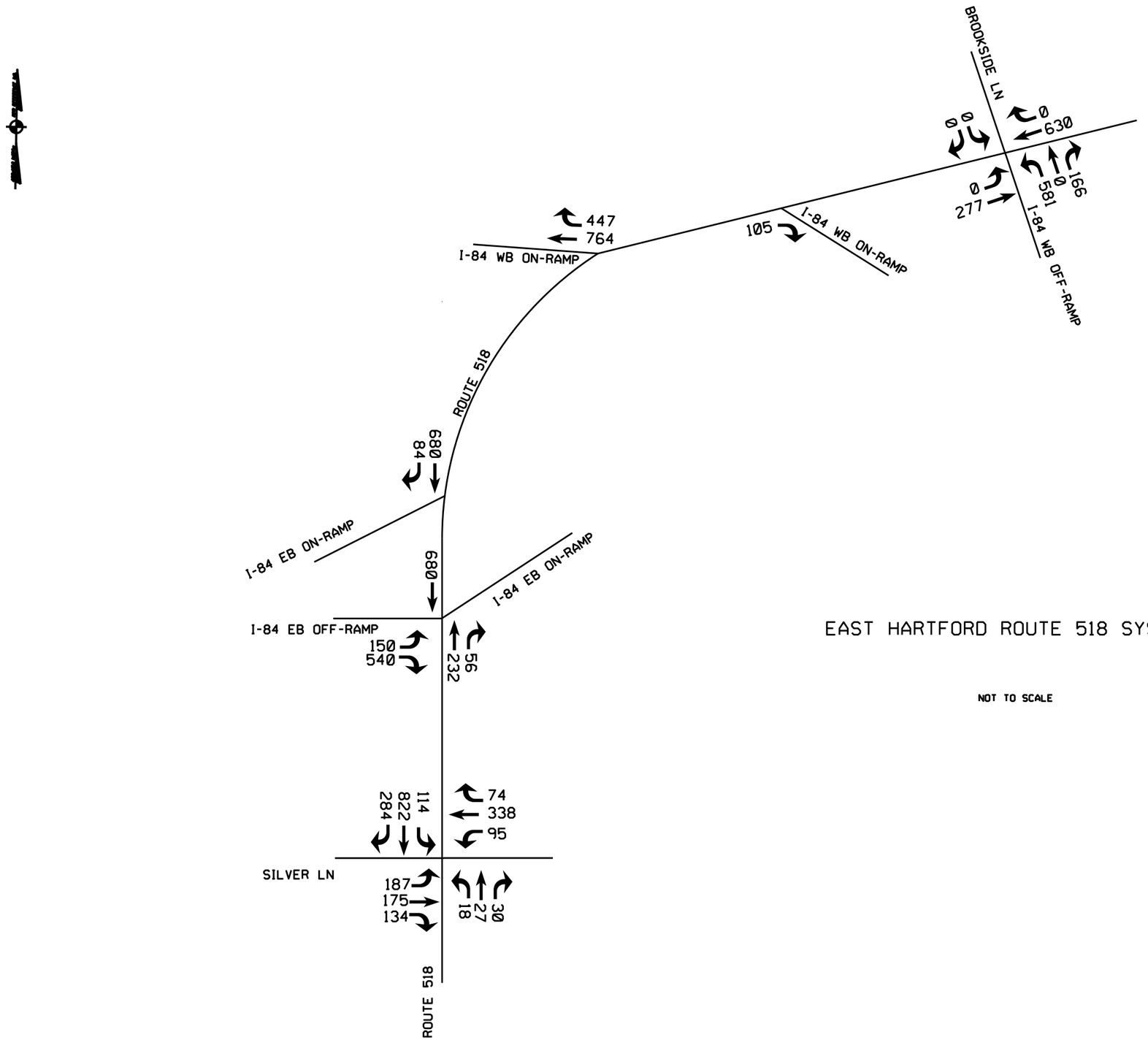
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COORDINATION

TOWN: BLOOMFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES SATURDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



EAST HARTFORD ROUTE 518 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

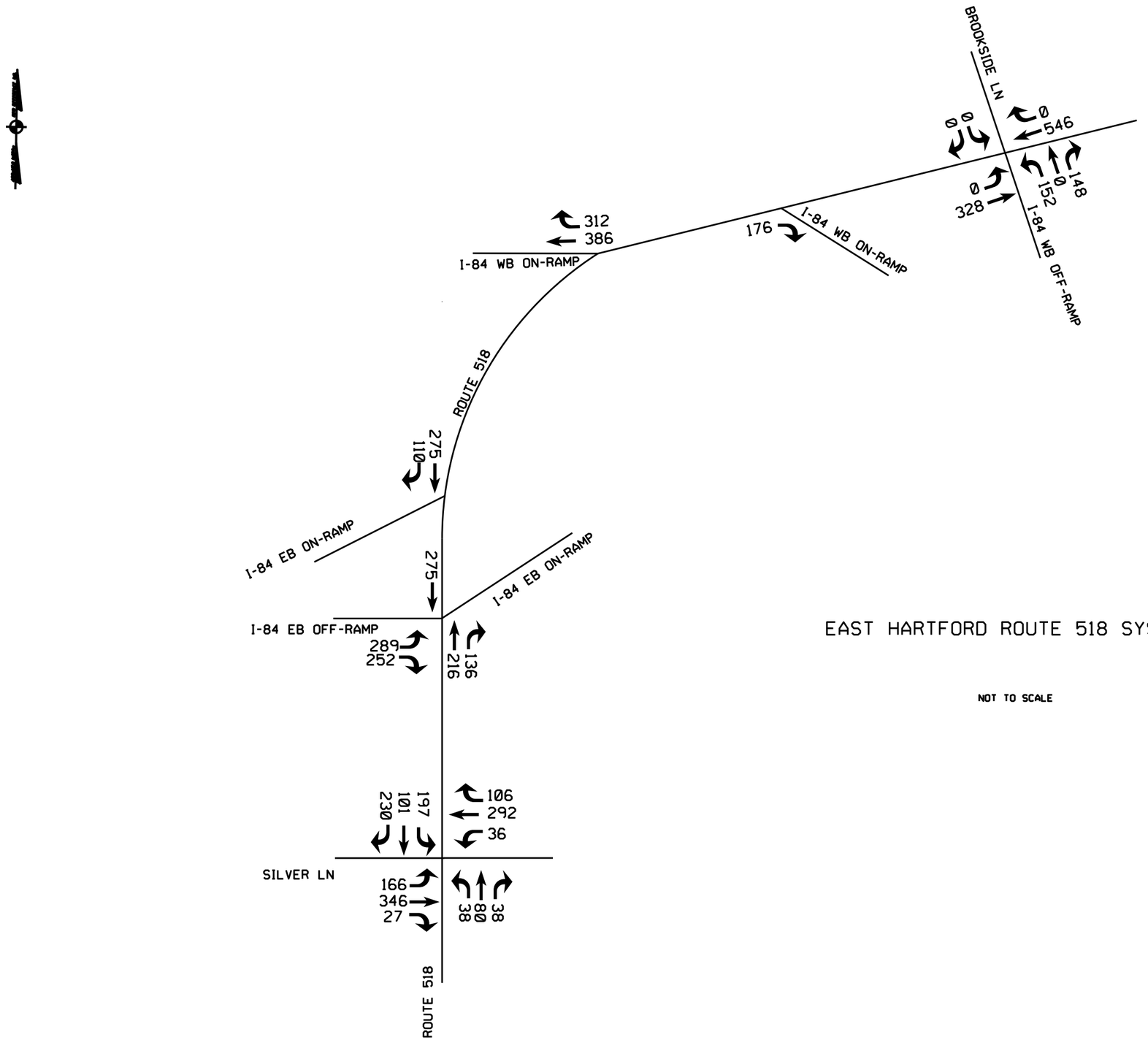
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: EAST HARTFORD

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO.
SHEET NO.



EAST HARTFORD ROUTE 518 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

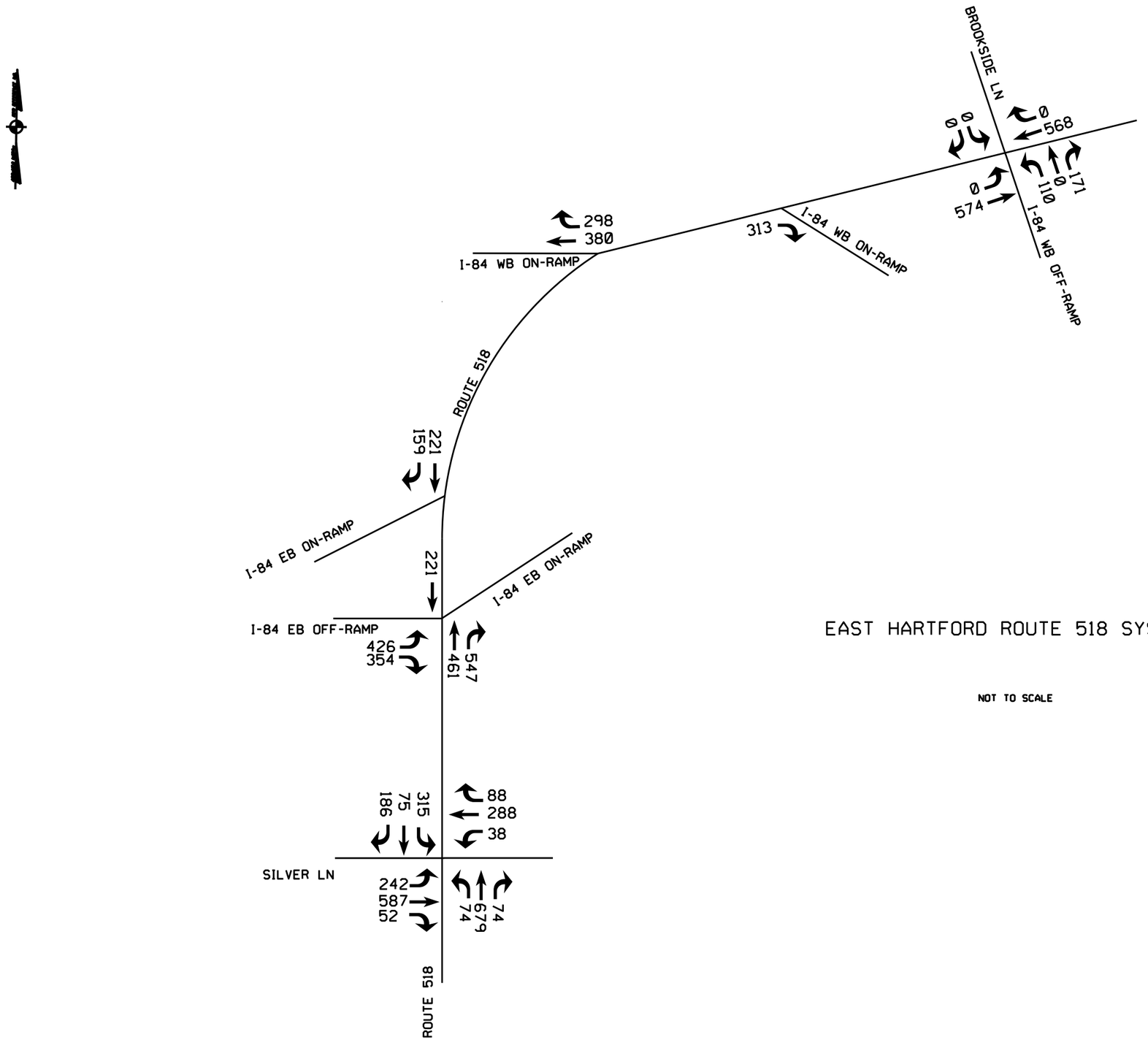
SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: EAST HARTFORD

DRAWING TITLE:
2018 - 2020 TRAFFIC VOLUMES
MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO.
SHEET NO.



EAST HARTFORD ROUTE 518 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

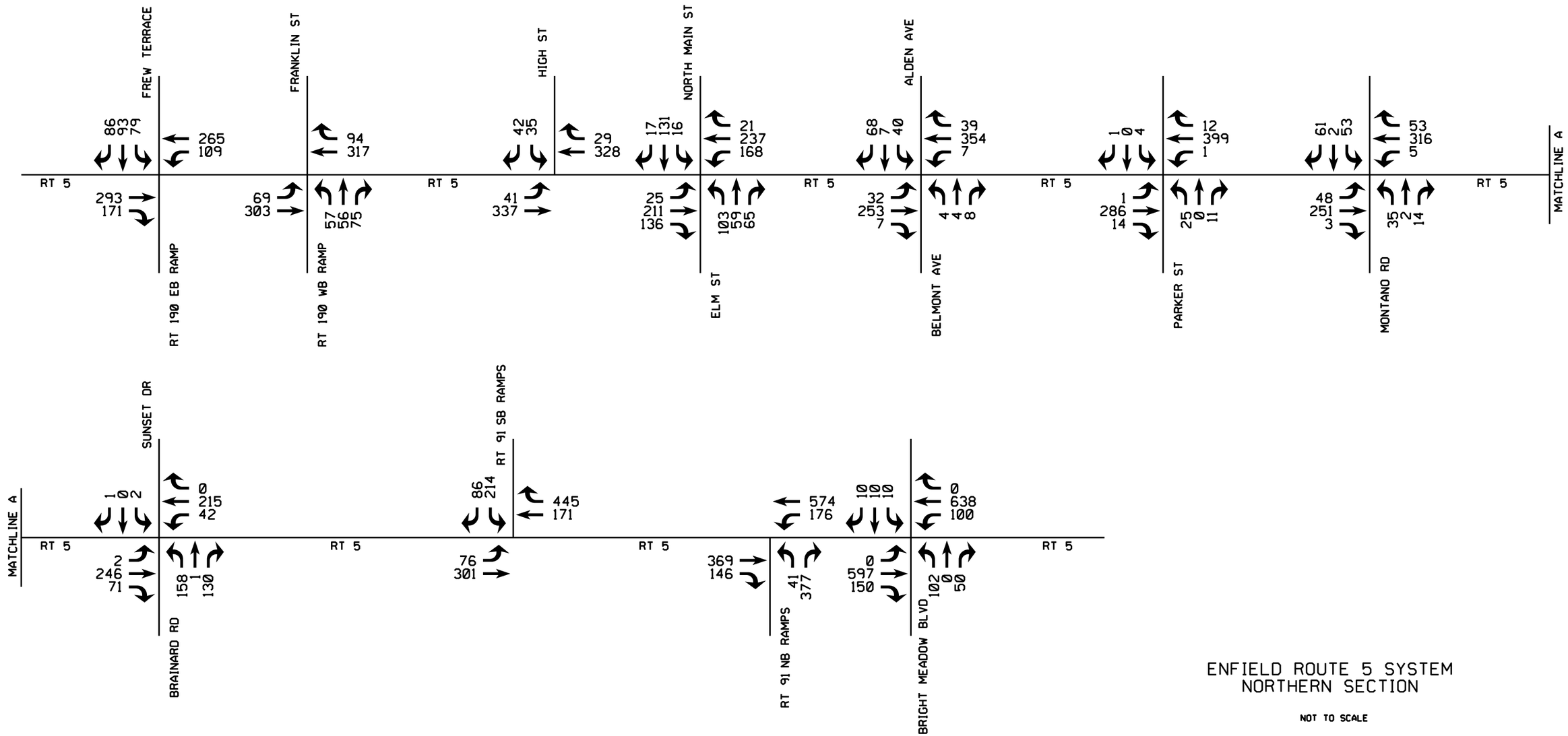
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: EAST HARTFORD

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO.
SHEET NO.



ENFIELD ROUTE 5 SYSTEM
NORTHERN SECTION

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

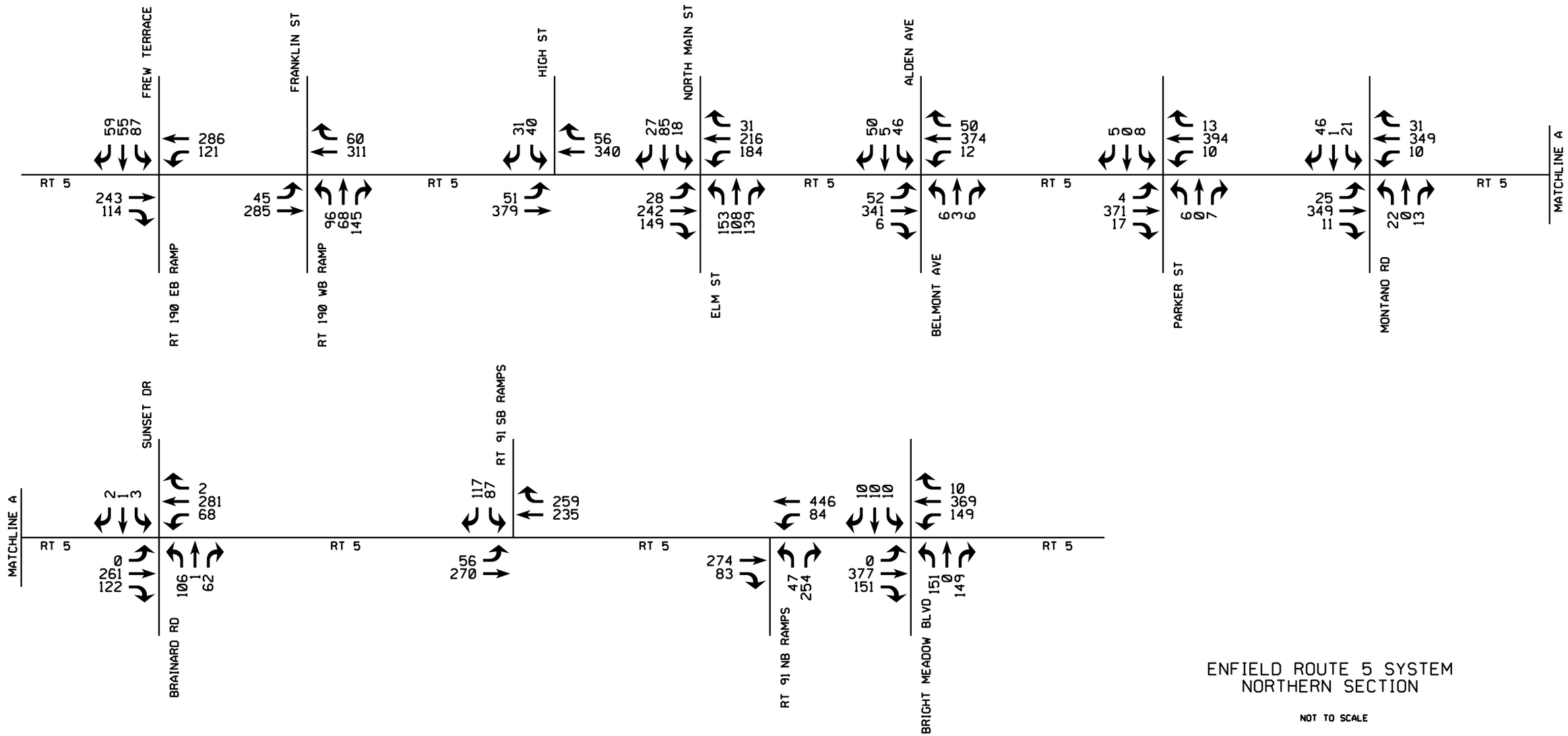
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: ENFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 1



ENFIELD ROUTE 5 SYSTEM
NORTHERN SECTION

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

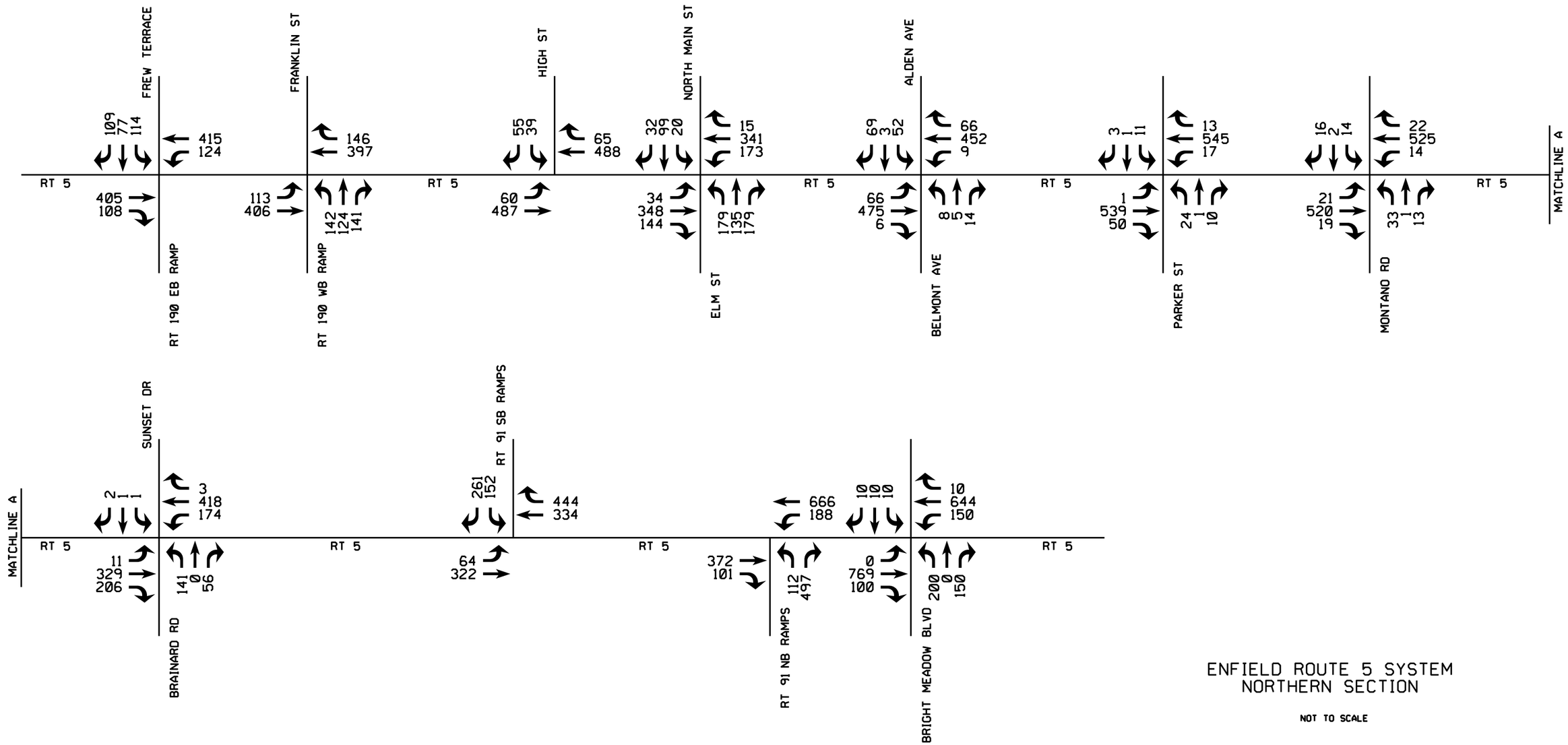
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: ENFIELD

DRAWING TITLE:
2018-2020 TRAFFIC VOLUMES
MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 2



ENFIELD ROUTE 5 SYSTEM
NORTHERN SECTION

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

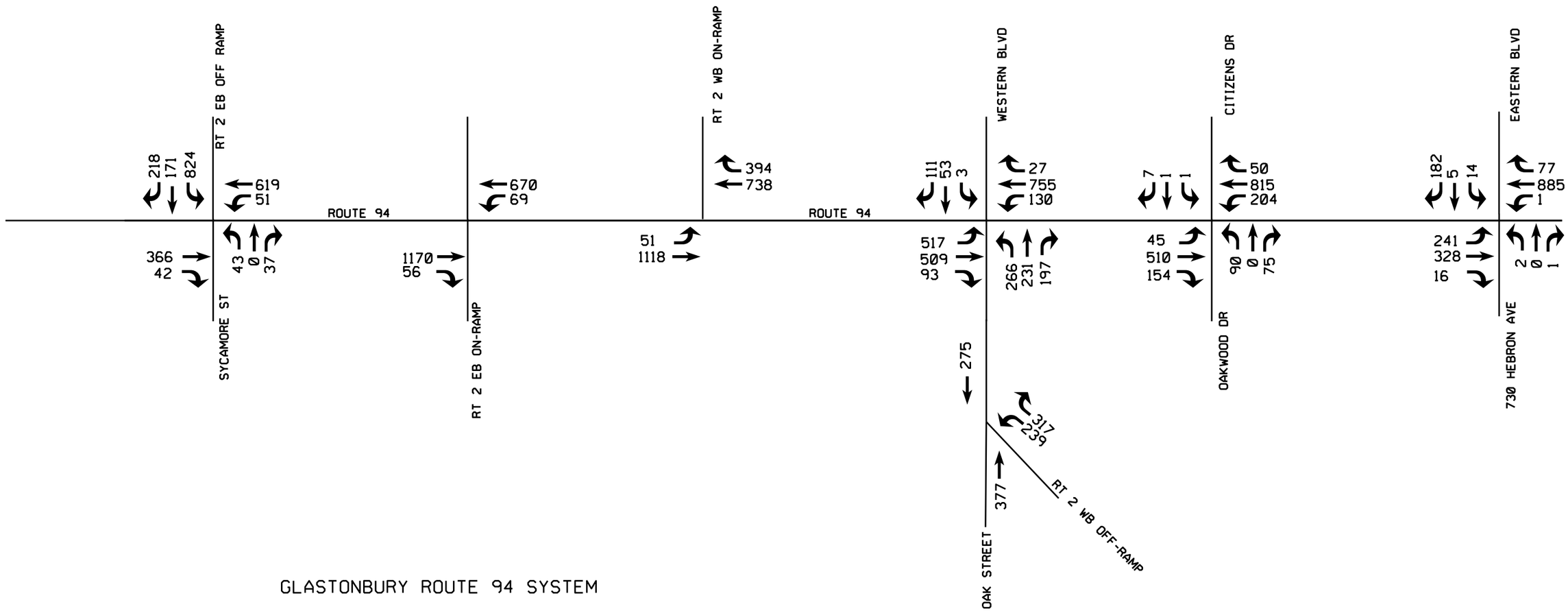
SIGNATURE BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: ENFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 3



GLASTONBURY ROUTE 94 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: G HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

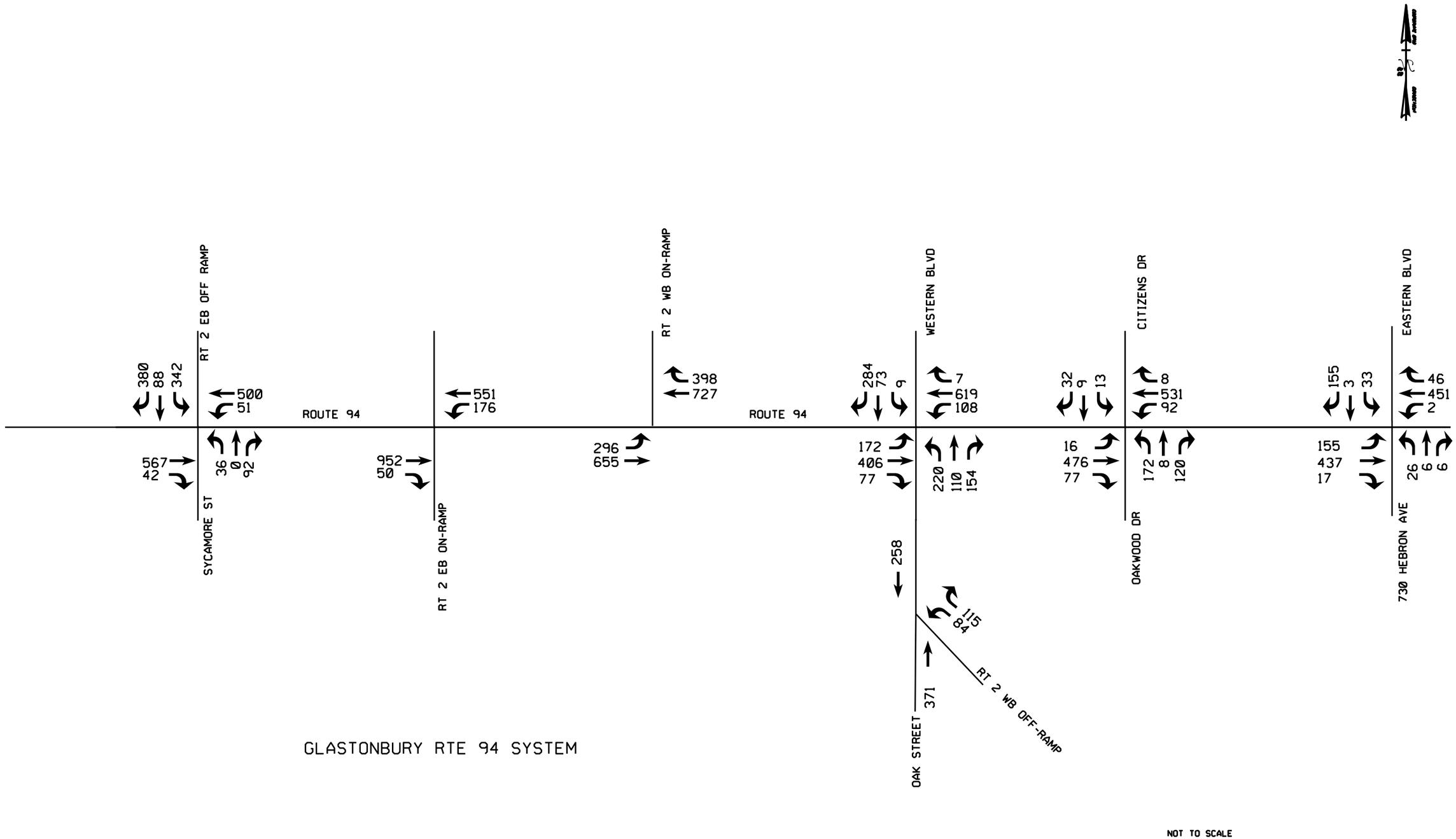
SIGNATURE/ BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COORDINATION

TOWN: GLASTONBURY

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO.
SHEET NO.



GLASTONBURY RTE 94 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: G HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

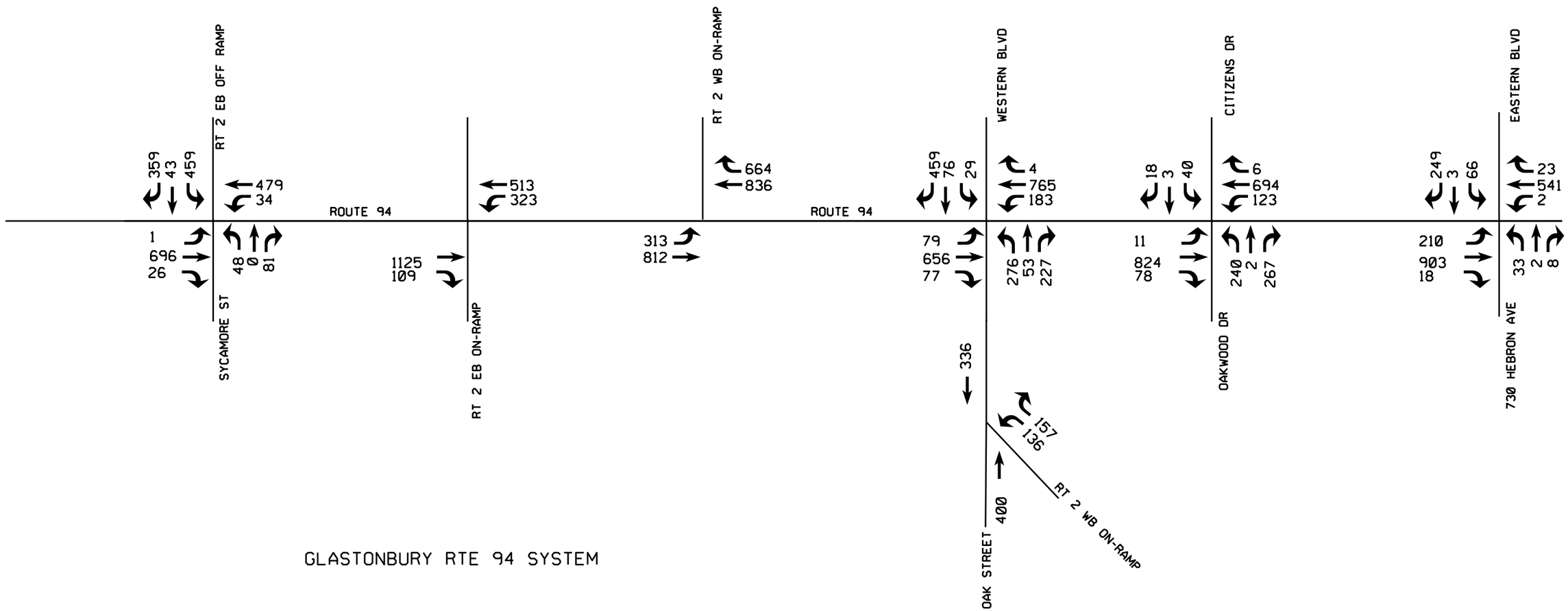
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: GLASTONBURY

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



GLASTONBURY RTE 94 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date@DATE$

DESIGNER/DRAFTER: G HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

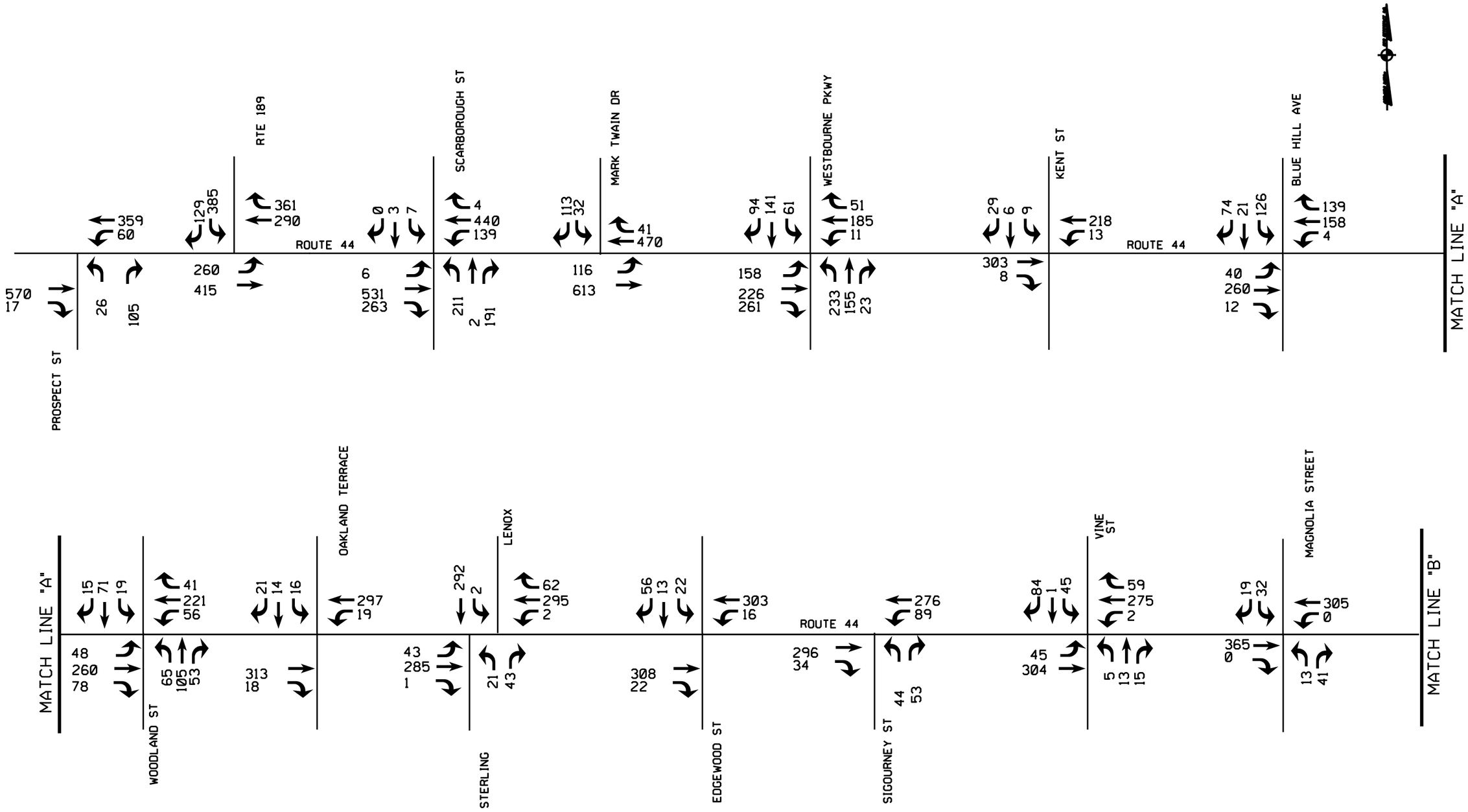
SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: GLASTONBURY

DRAWING TITLE:
2018 - 2020 TRAFFIC VOLUMES
PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



NOT TO SCALE

HARTFORD ROUTE 44
ALBANY AVE SYSTEM

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: $DATE$

DESIGNER/DRAFTER: N. JONES
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

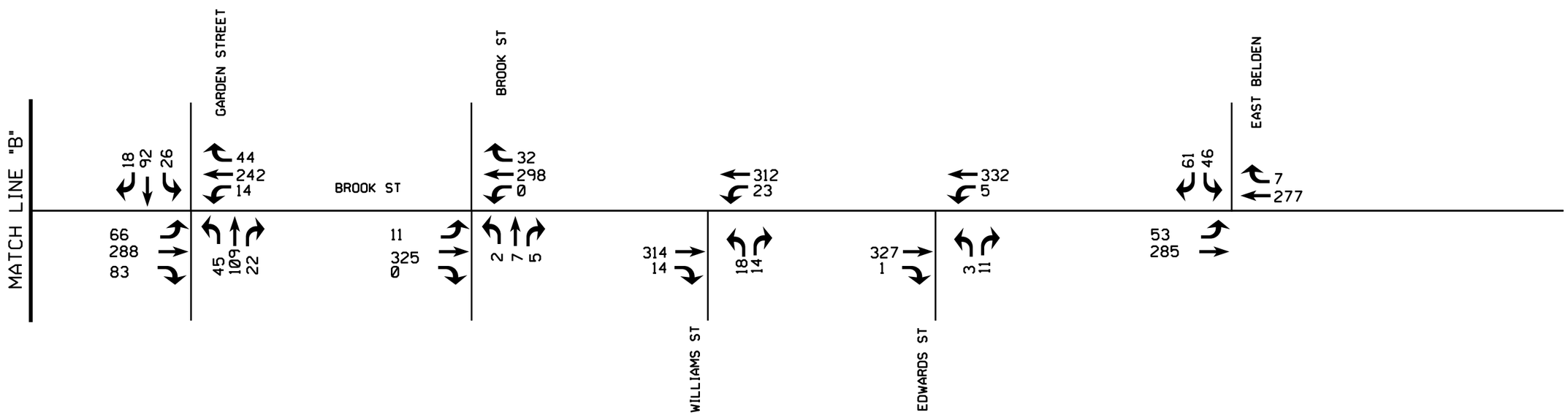
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COORDINATION

TOWN: HARTFORD

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



NOT TO SCALE

HARTFORD ROUTE 44
ALBANY AVE SYSTEM

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: N. JONES
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

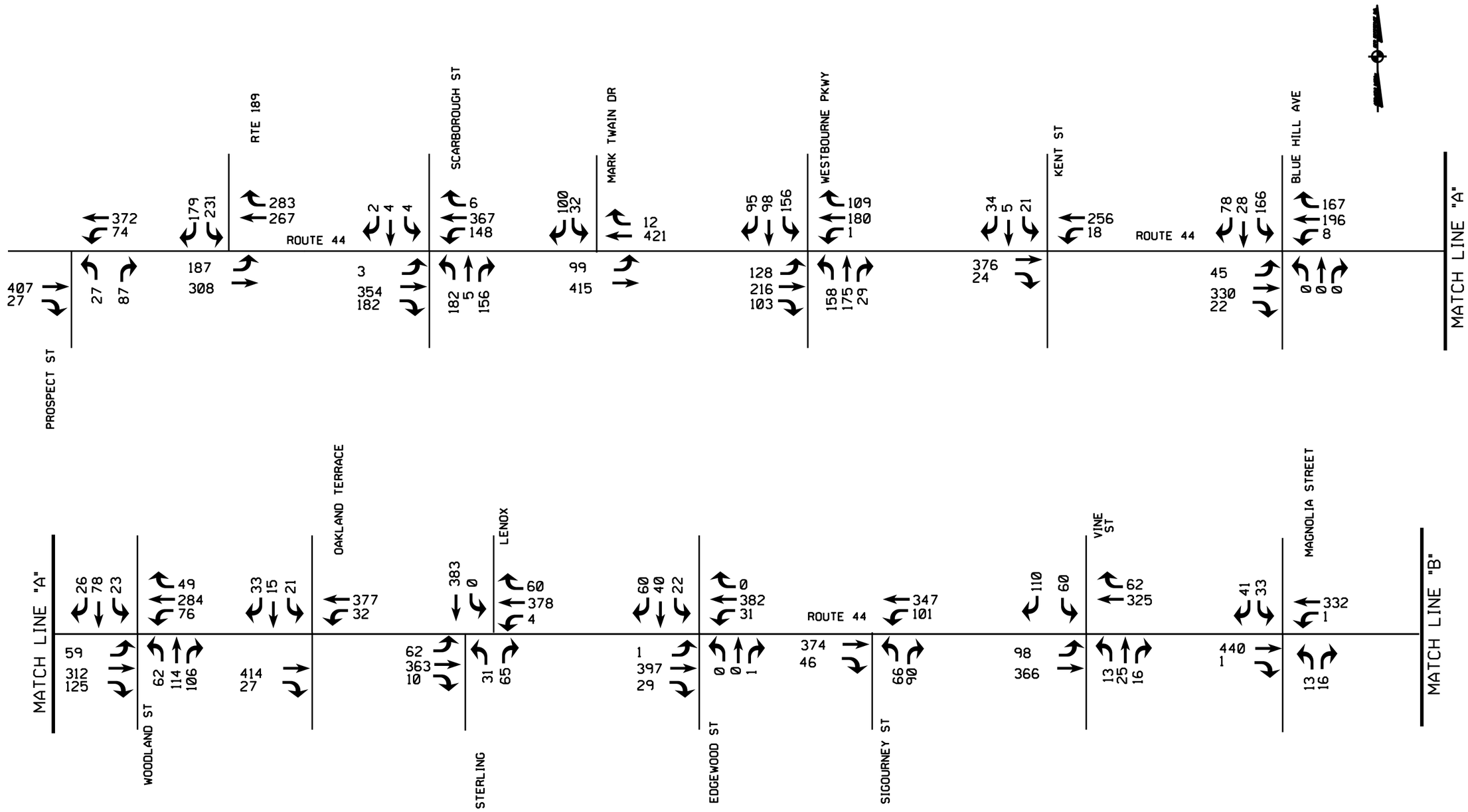
SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: HARTFORD

DRAWING TITLE:
2018 - 2020 TRAFFIC VOLUMES
AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



NOT TO SCALE

HARTFORD ROUTE 44
ALBANY AVE SYSTEM

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: N. JONES
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

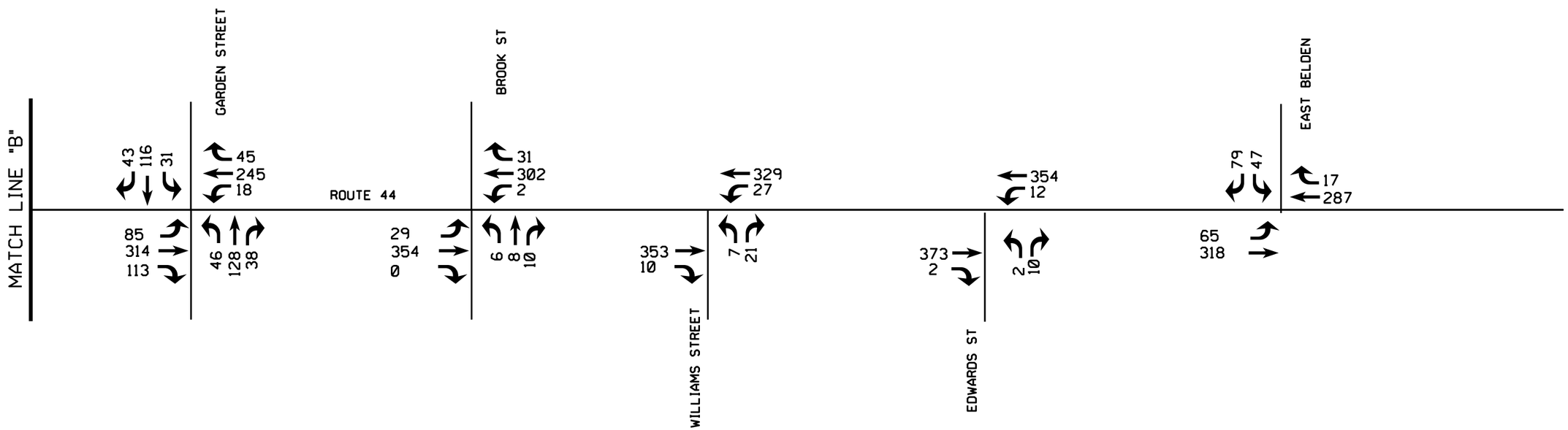
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: HARTFORD

DRAWING TITLE:
2018 - 2020 TRAFFIC VOLUMES
MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



HARTFORD ROUTE 44
ALBANY AVE SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: N. JONES
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

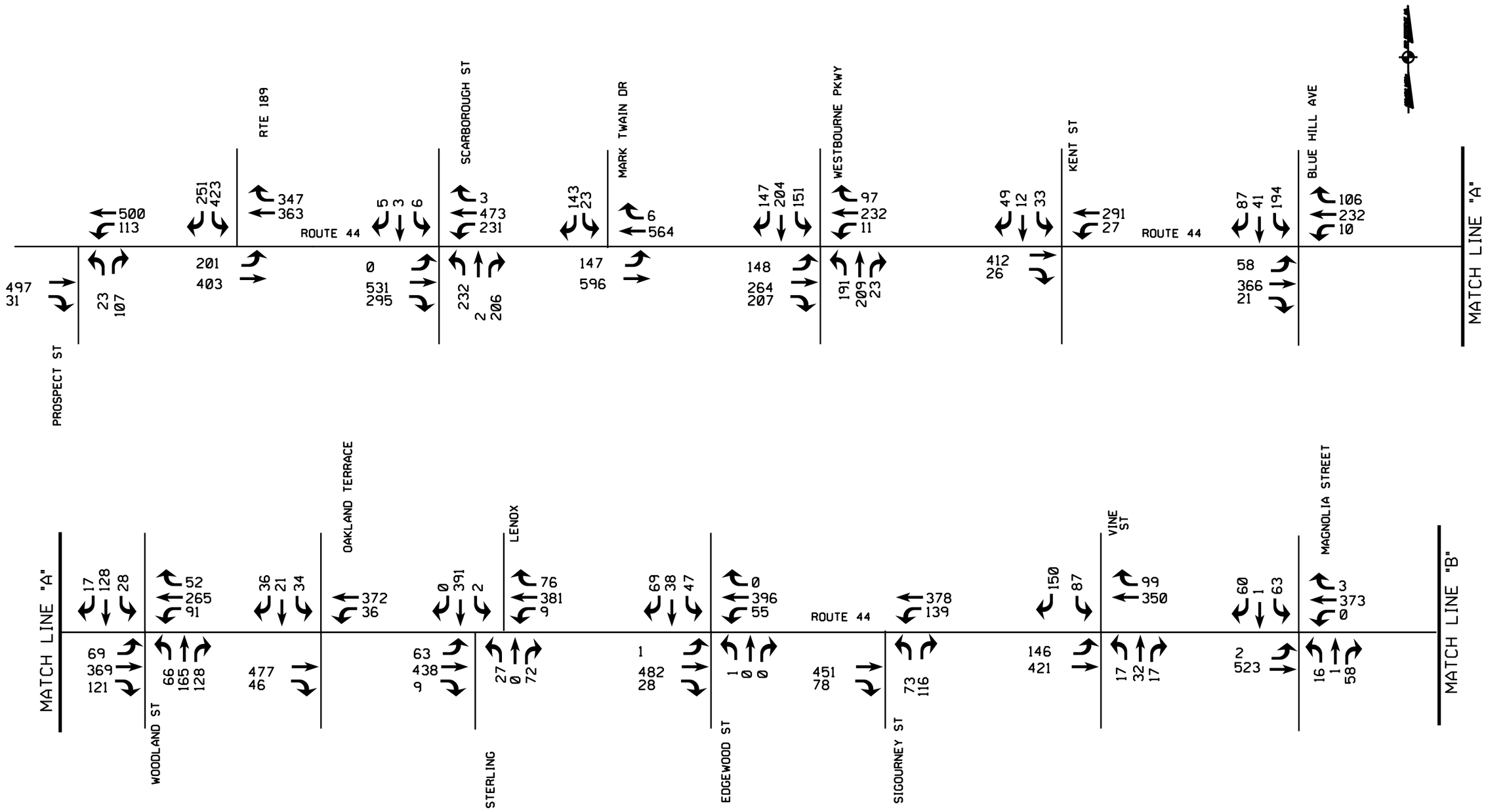
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: HARTFORD

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



NOT TO SCALE

HARTFORD ROUTE 44
ALBANY AVE SYSTEM

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: $DATE$

DESIGNER/DRAFTER: N. JONES
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

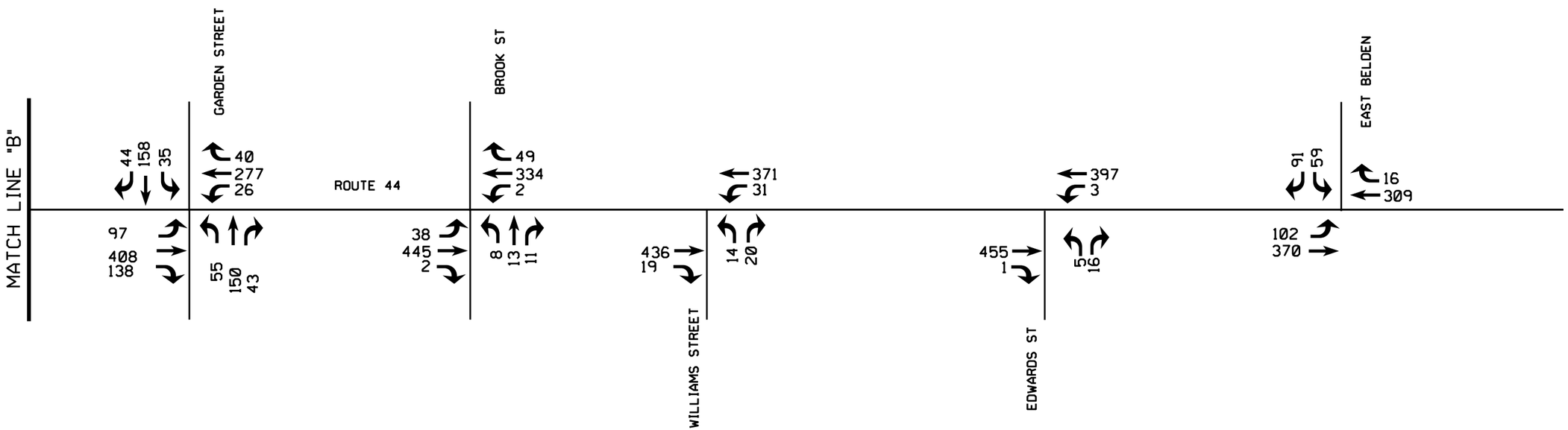
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COORDINATION

TOWN: HARTFORD

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



HARTFORD ROUTE 44
ALBANY AVE SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:$DATE$

DESIGNER/DRAFTER: N. JONES
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

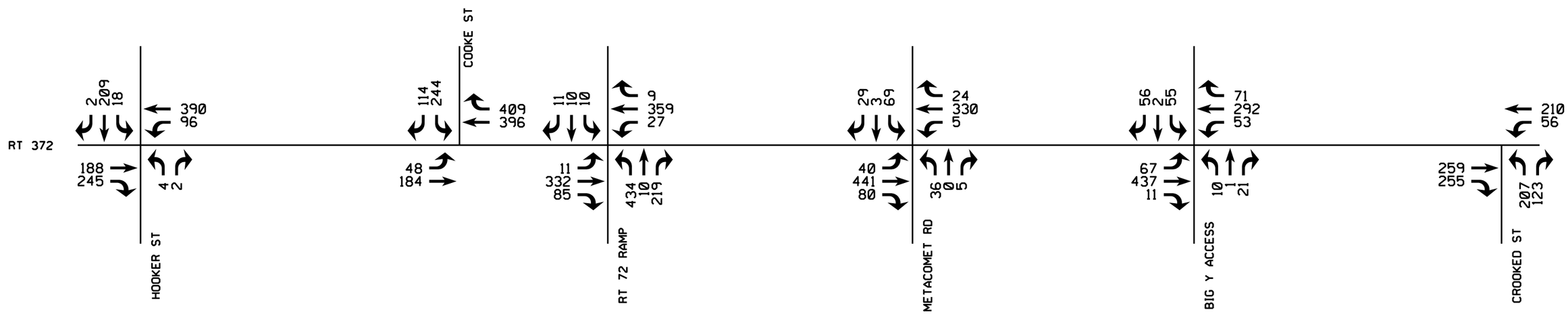
SIGNATURE BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COORDINATION

TOWN: HARTFORD

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



PLAINVILLE ROUTE 372 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

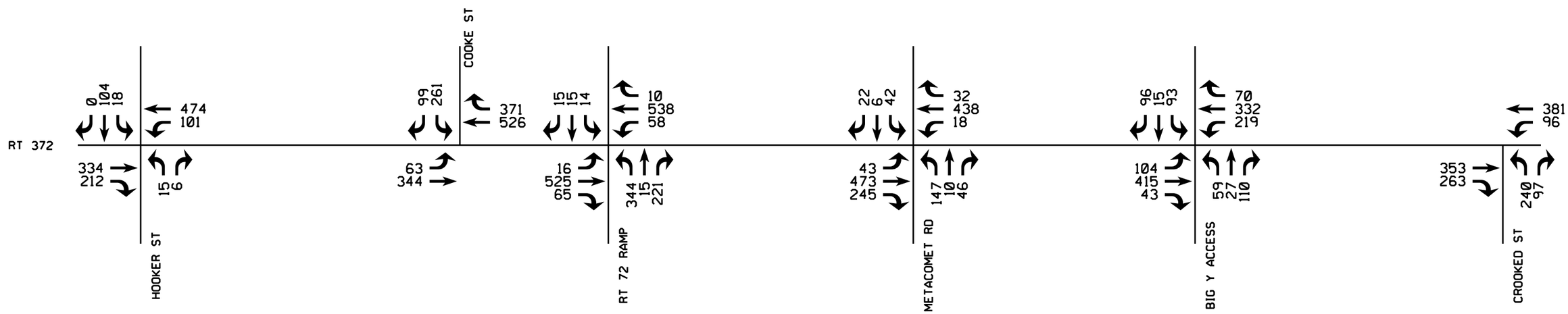
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: PLAINVILLE

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 1



PLAINVILLE ROUTE 372 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

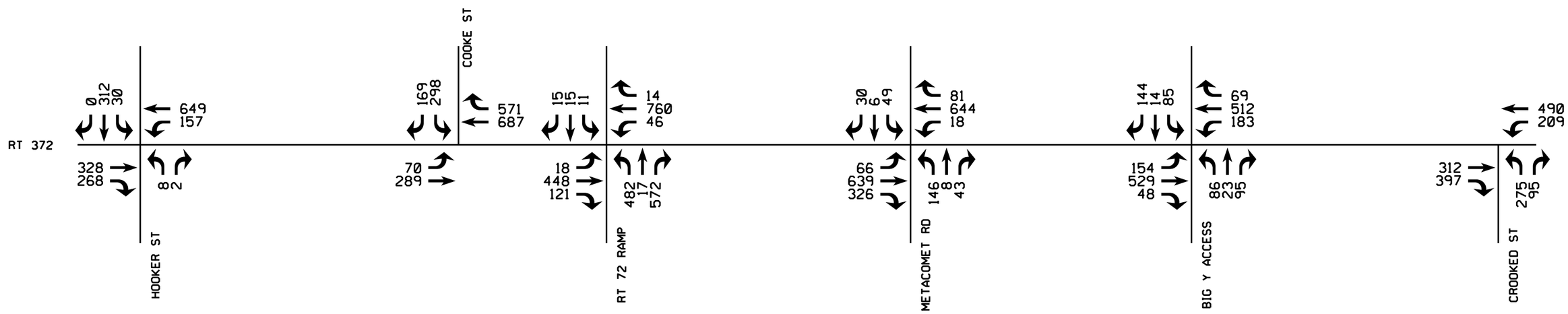
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: PLAINVILLE

DRAWING TITLE:
2018-2020 TRAFFIC VOLUMES
MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 1



PLAINVILLE ROUTE 372 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

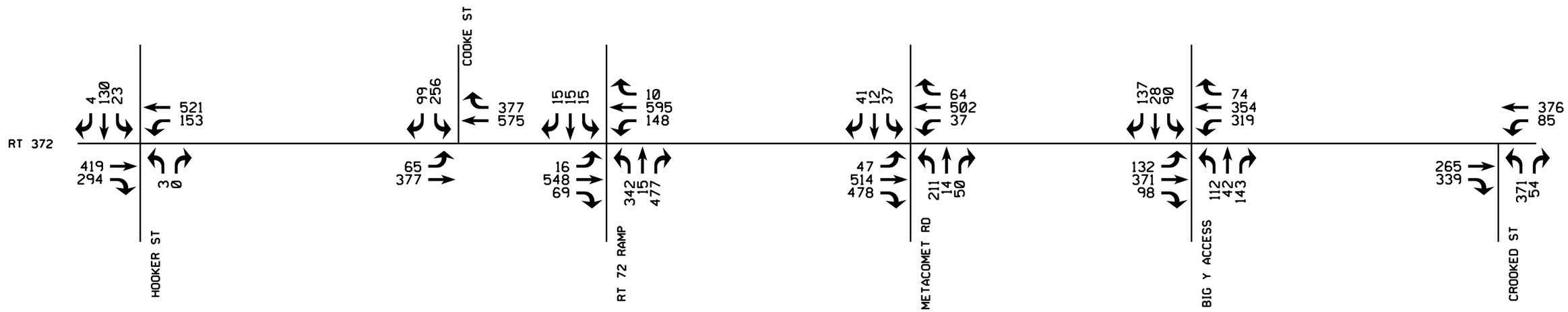
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: PLAINVILLE

DRAWING TITLE:
2018-2020 TRAFFIC VOLUMES
PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 1



PLAINVILLE ROUTE 372 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date@DATE$

DESIGNER/DRAFTER: E. KLEPADLO
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

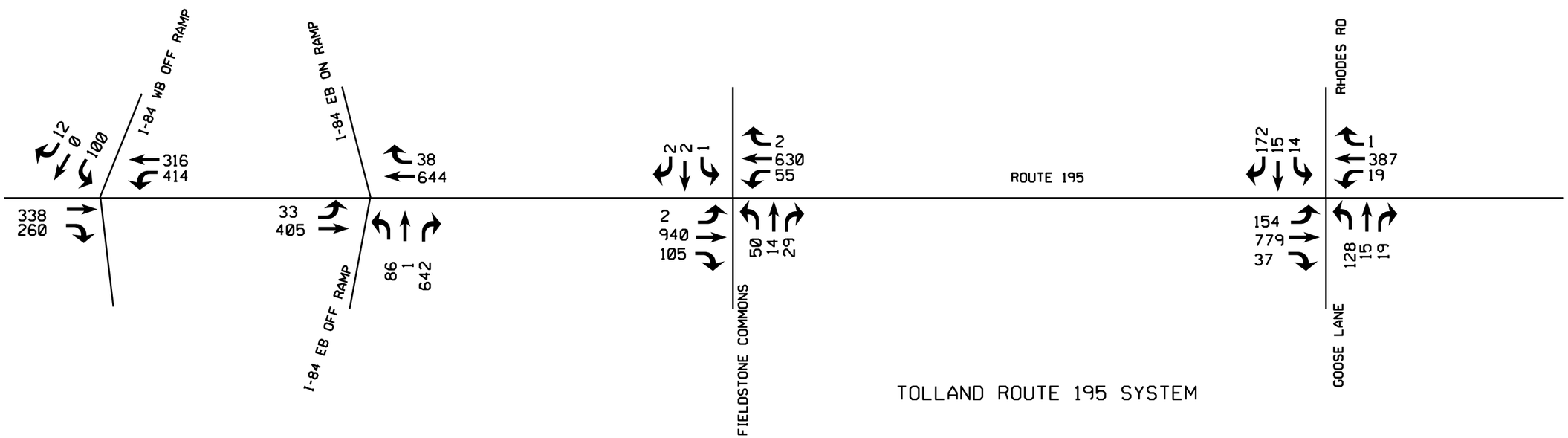
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: PLAINVILLE

DRAWING TITLE:
2018-2020 TRAFFIC VOLUMES
SAT PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 1



TOLLAND ROUTE 195 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

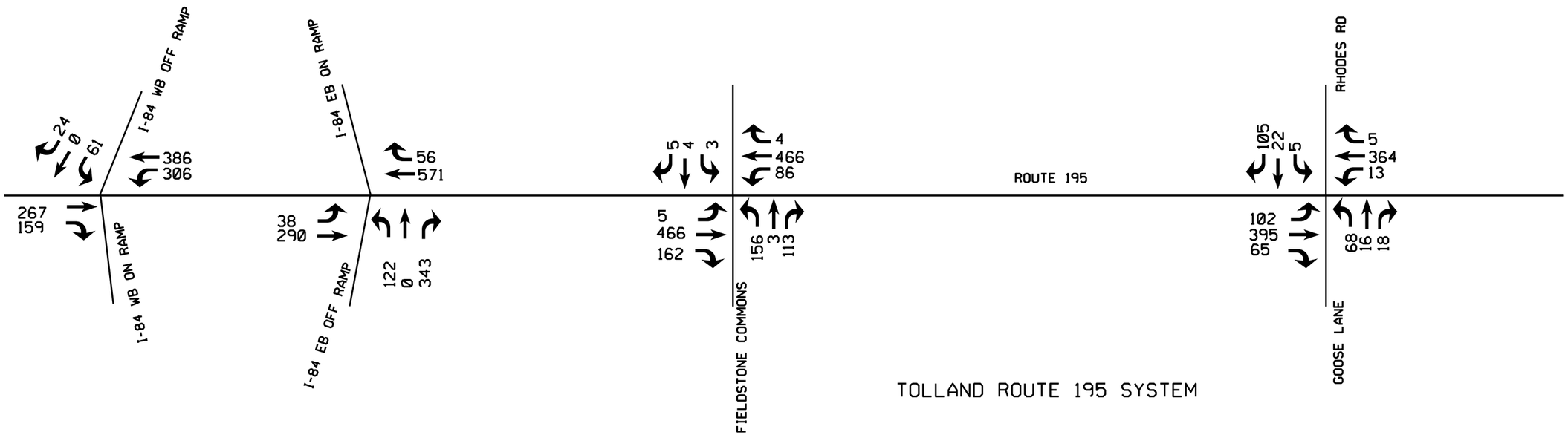
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: TOLLAND

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



TOLLAND ROUTE 195 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

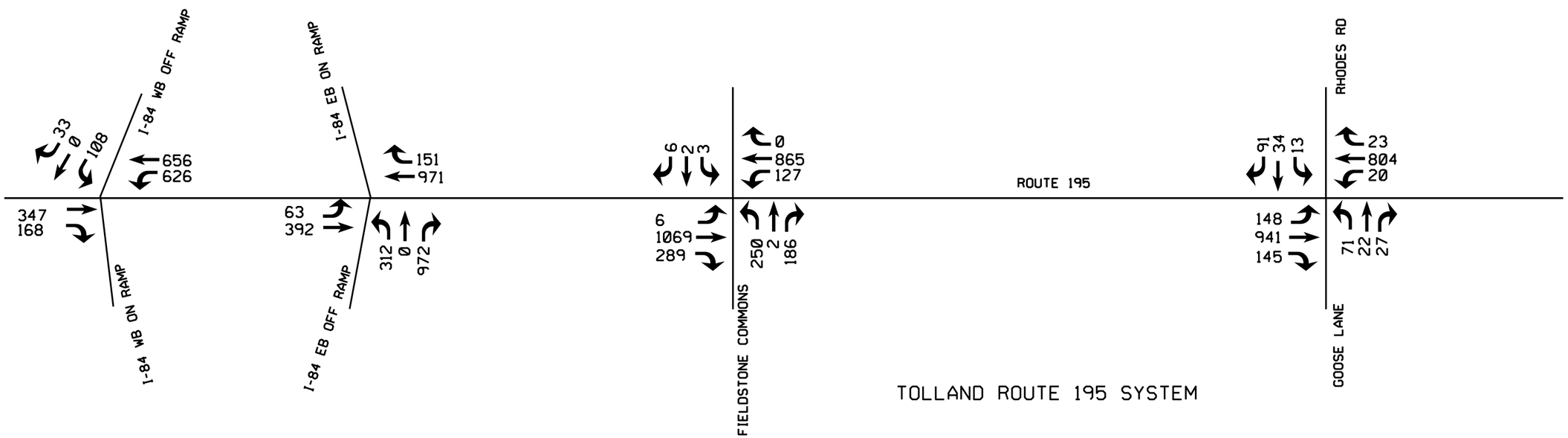
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: TOLLAND

DRAWING TITLE:
2018 - 2020 TRAFFIC VOLUMES
MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



TOLLAND ROUTE 195 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

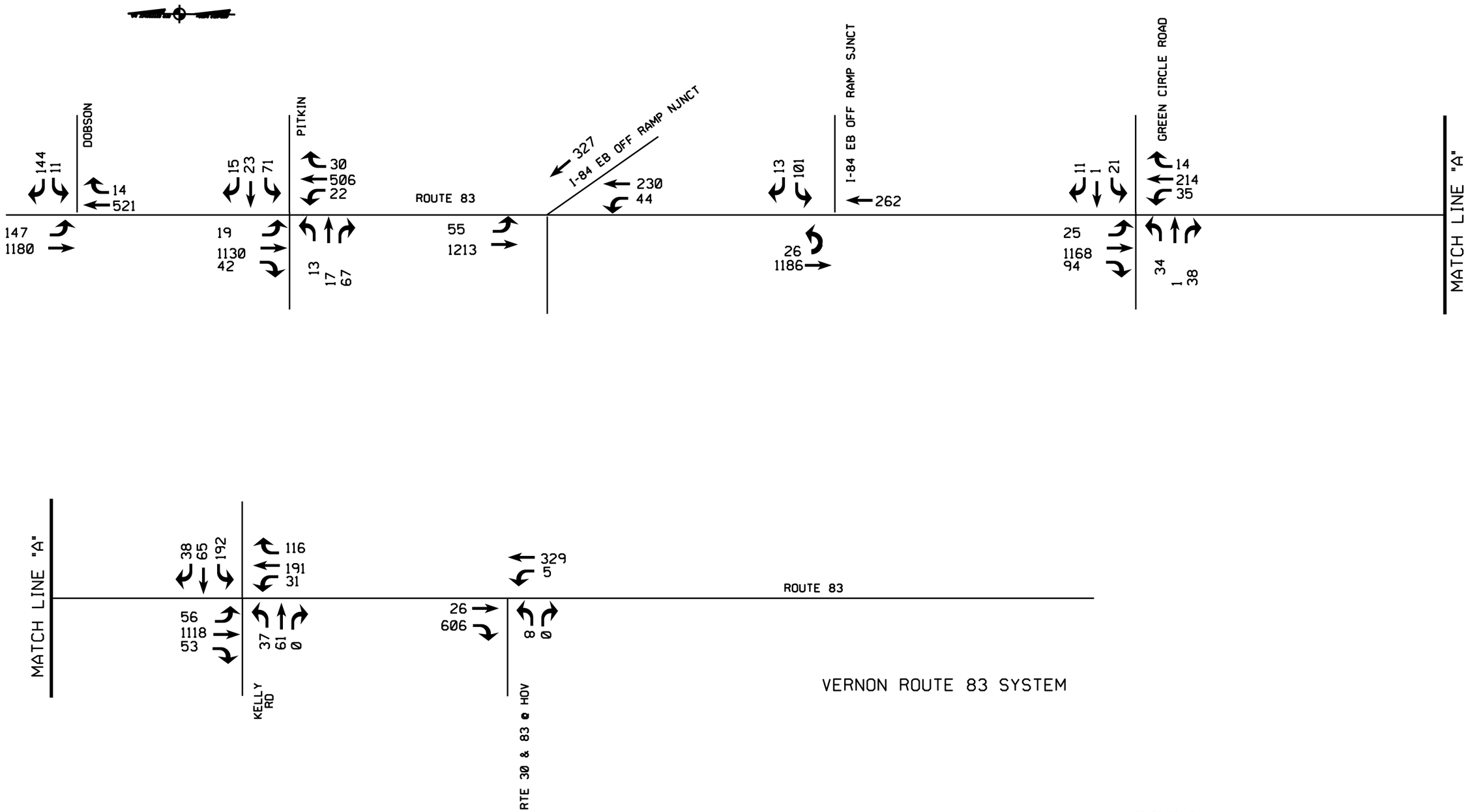
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: TOLLAND

DRAWING TITLE:
2018 - 2020 TRAFFIC VOLUMES
PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

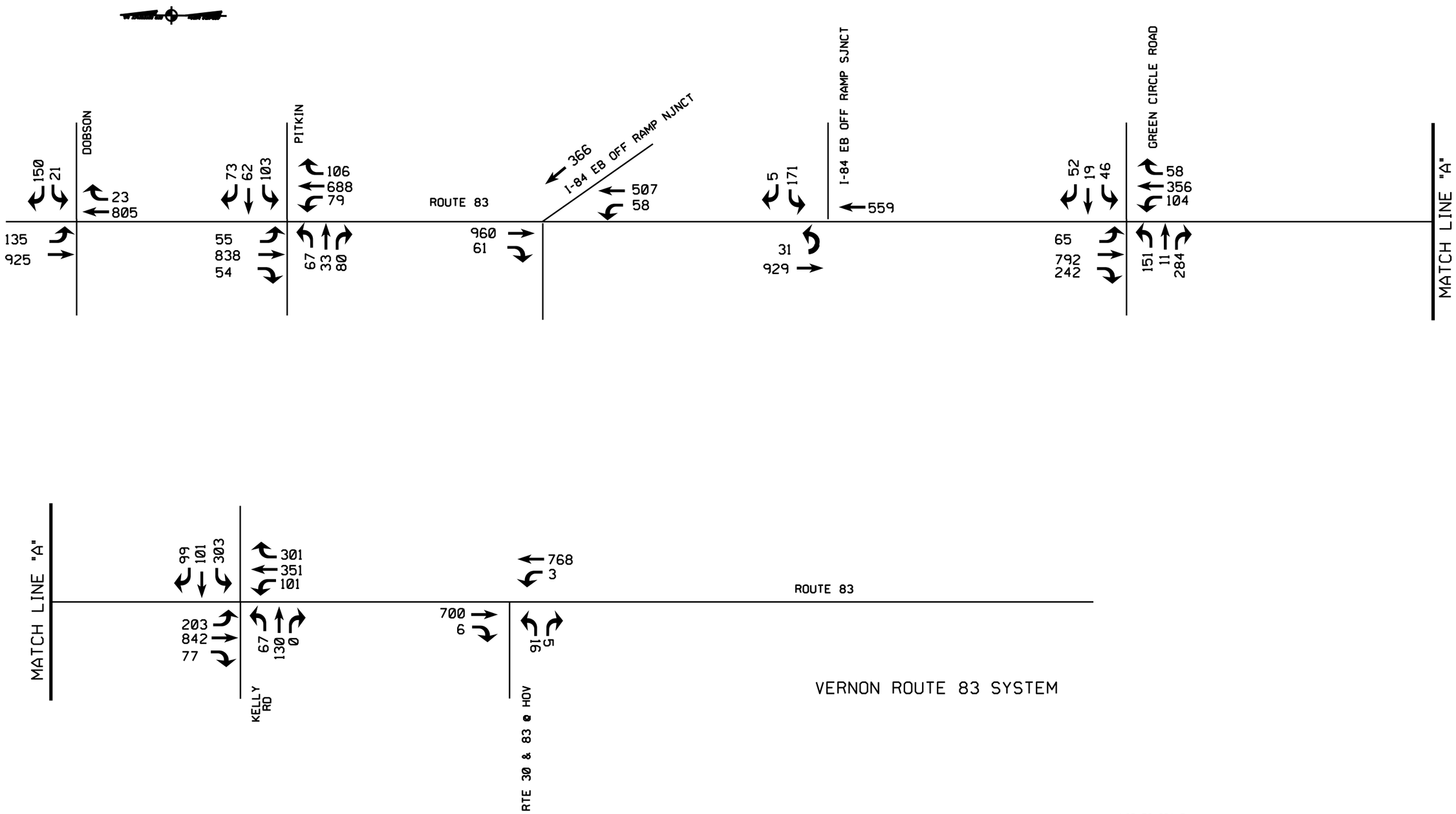
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: VERNON

DRAWING TITLE:
2018 - 2020 TRAFFIC VOLUMES
AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

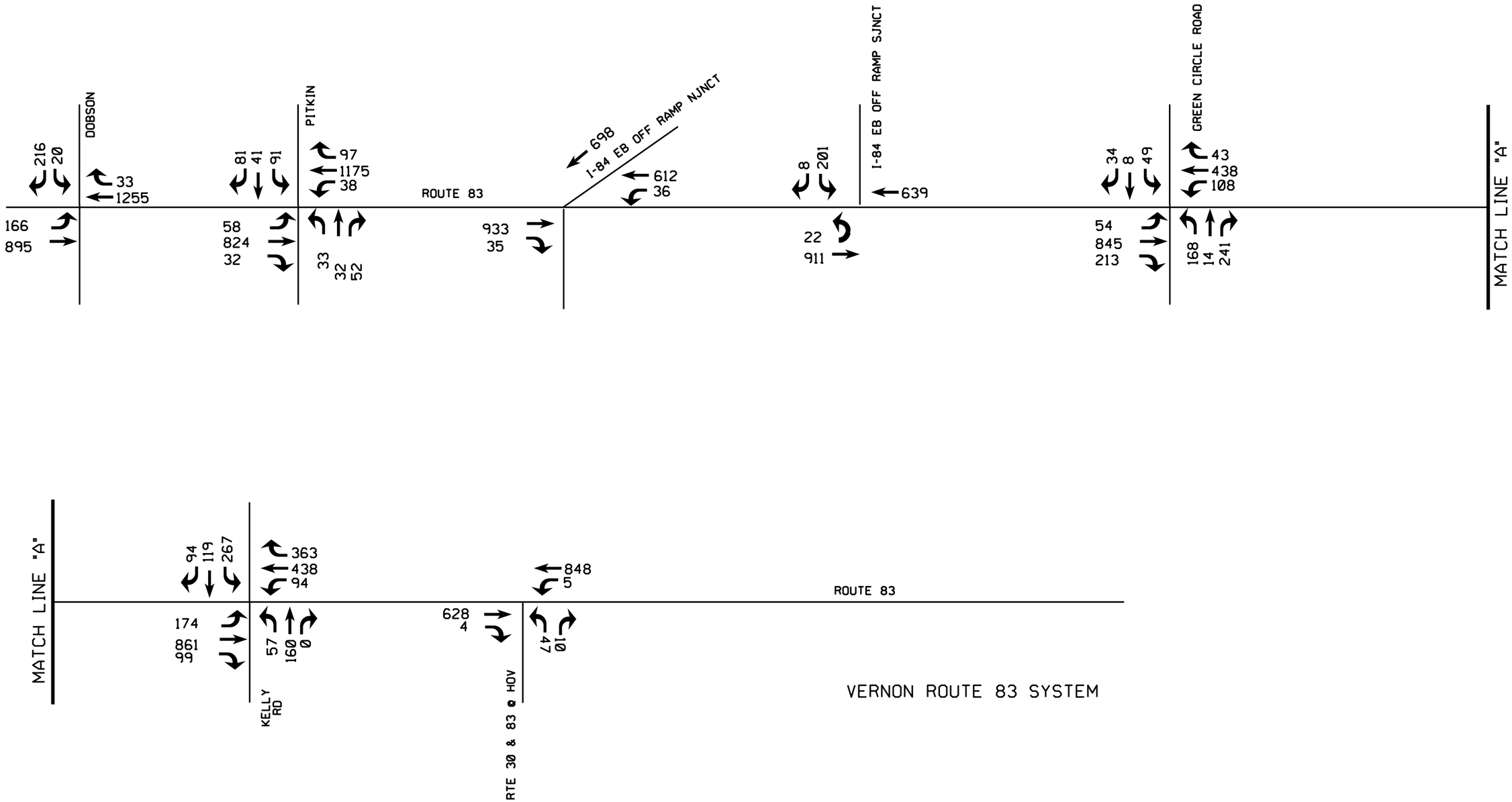
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COORDINATION

TOWN: VERNON

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

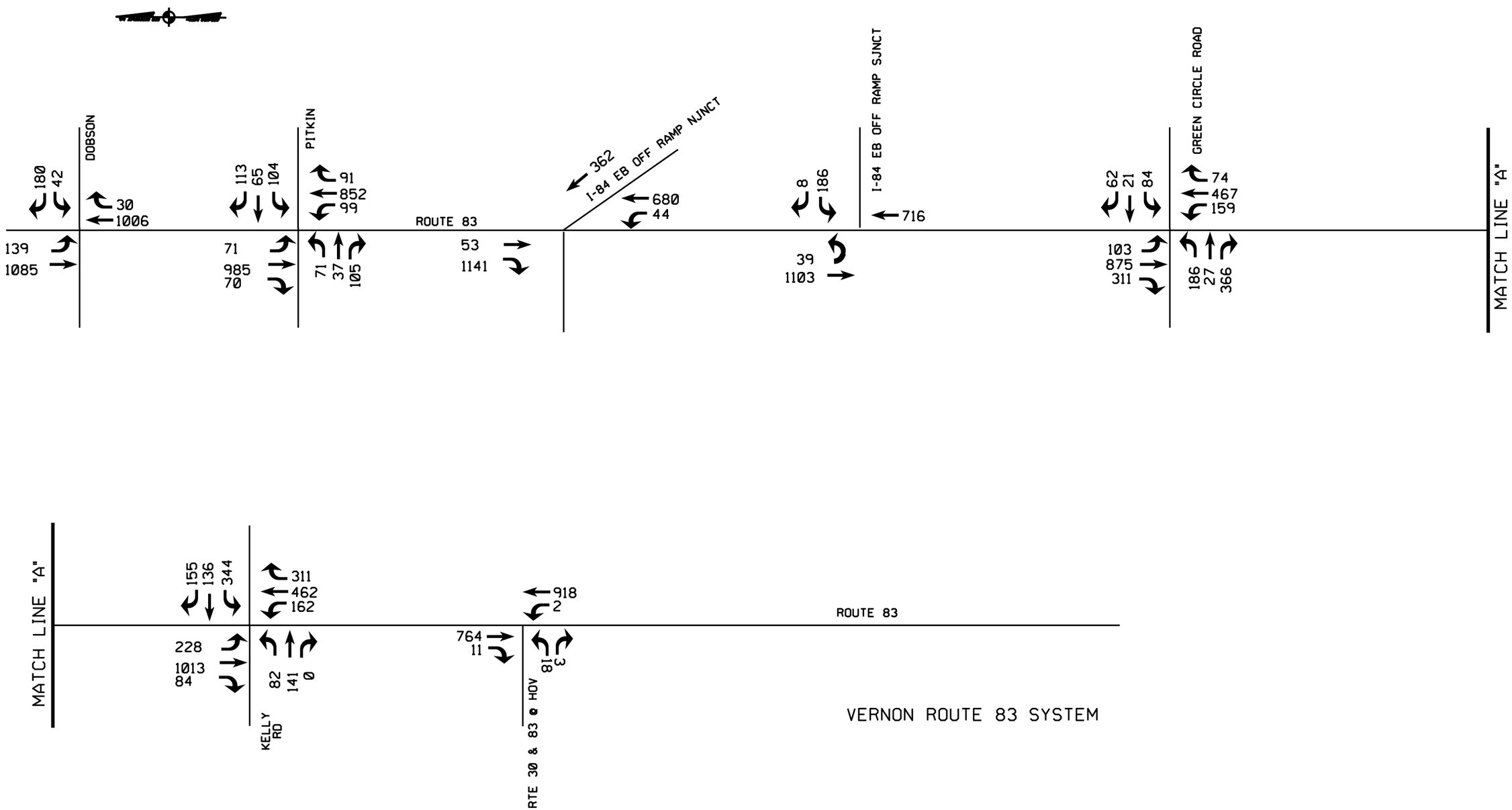
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN: VERNON

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



VERNON ROUTE 83 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

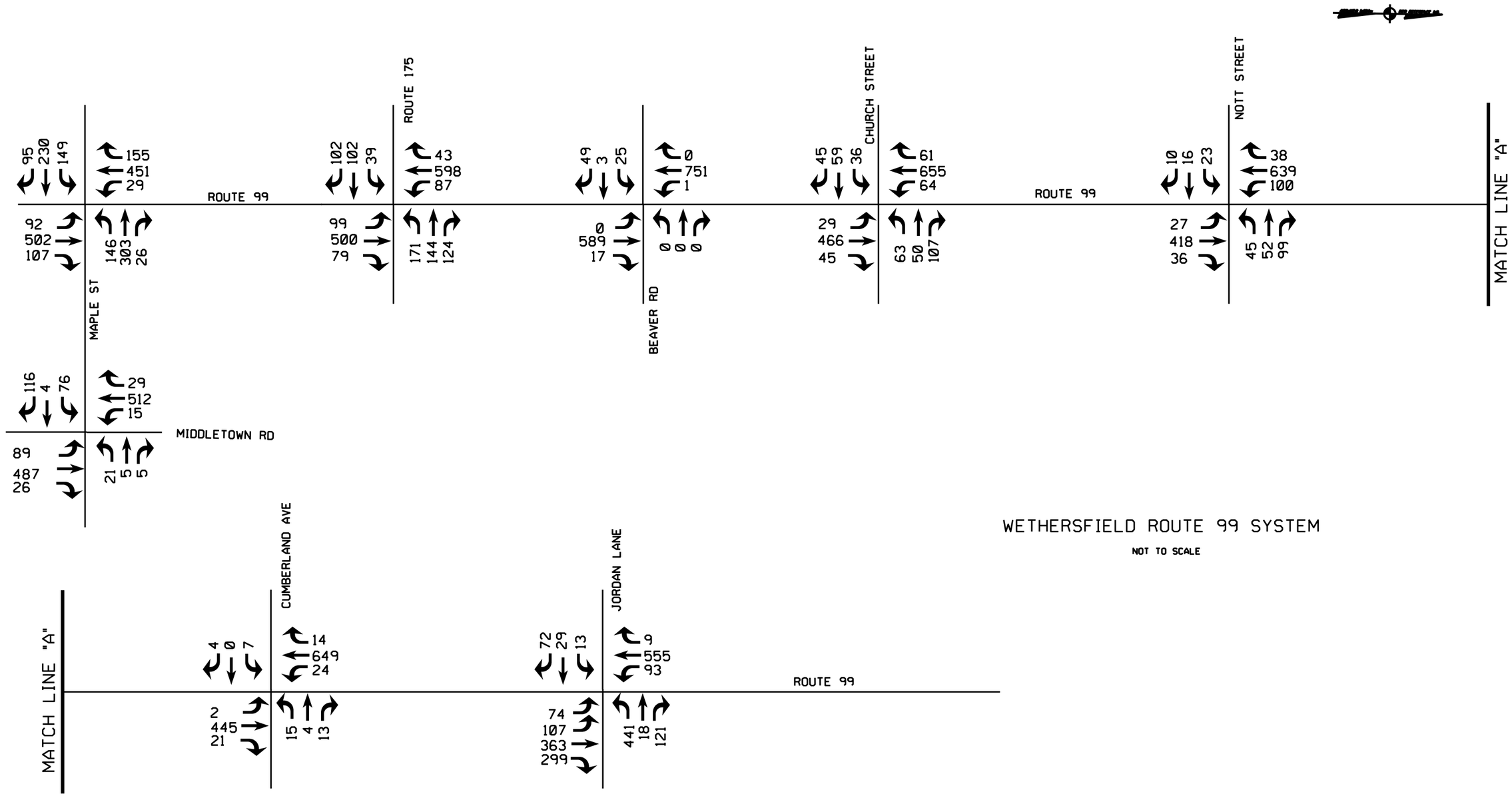
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COORDINATION

TOWN: VERNON

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES SATURDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-04
SHEET NO.



WETHERSFIELD ROUTE 99 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: $DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

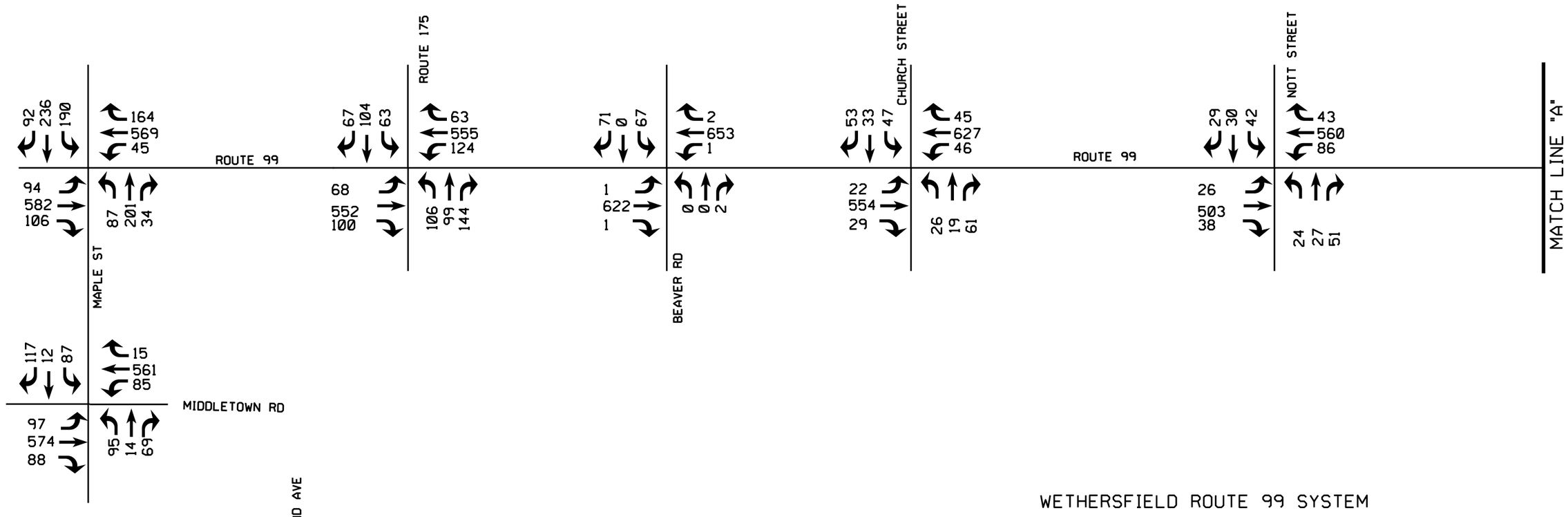
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

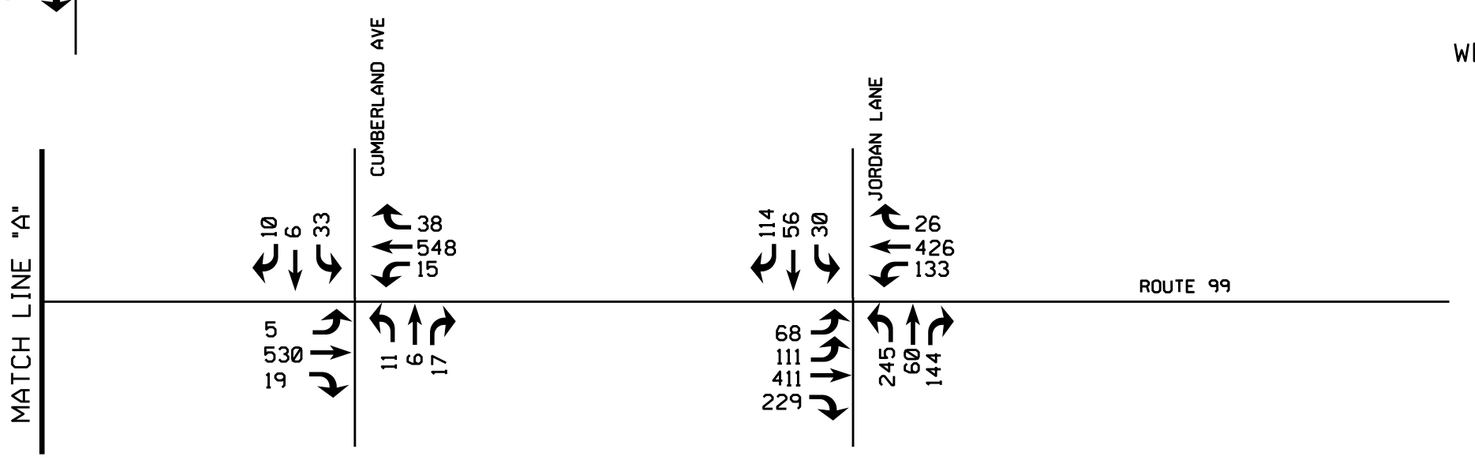
PROJECT TITLE: CRCOG REGION SIGNAL COOORDINATION

TOWN: WETHERSFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO.
SHEET NO.





WETHERSFIELD ROUTE 99 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: $DATE$

DESIGNER/DRAFTER: G. HOWELL
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

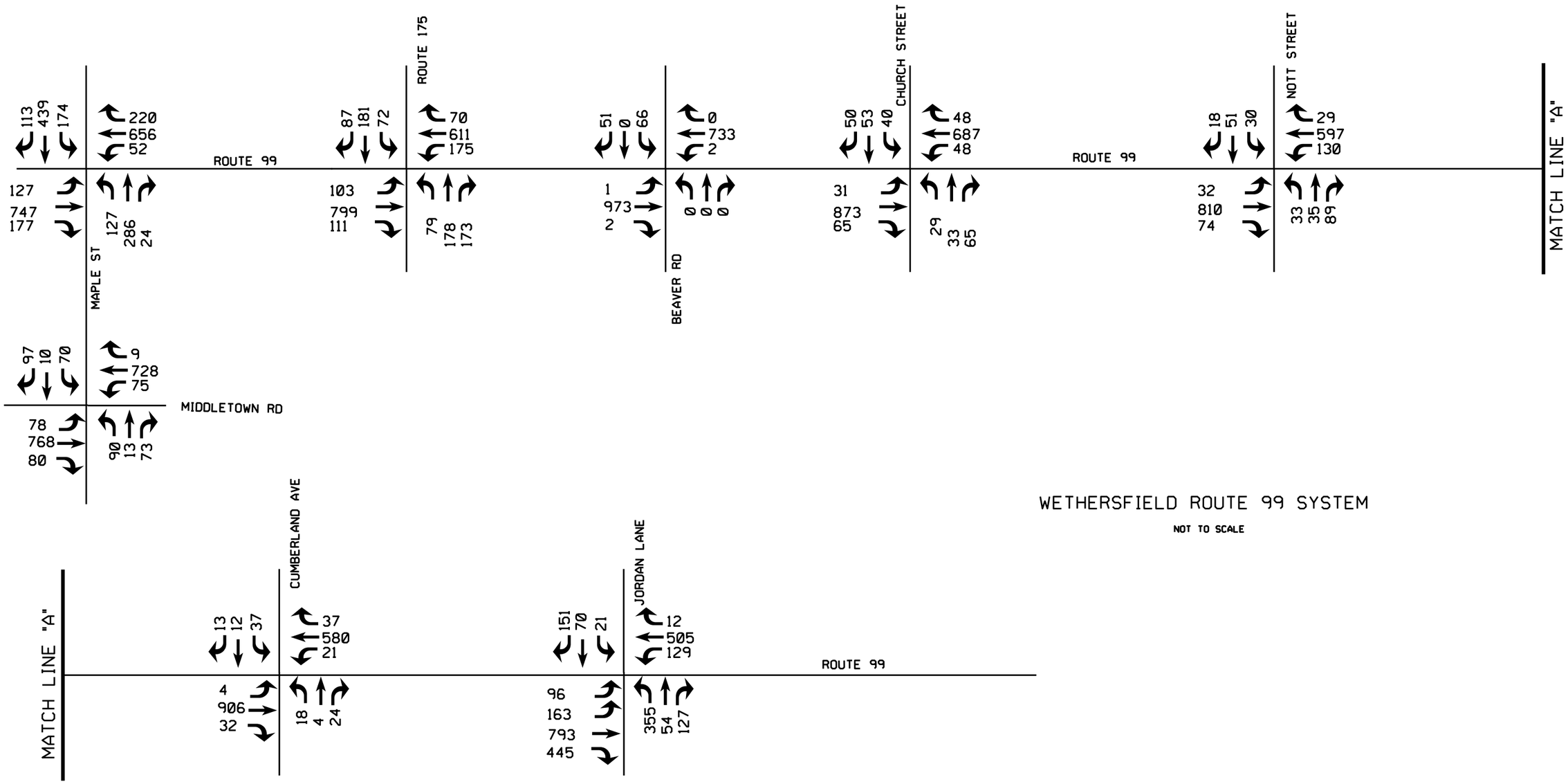
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COOORDINATION

TOWN: WETHERSFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO.
SHEET NO.



WETHERSFIELD ROUTE 99 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: $DATE$

DESIGNER/DRAFTER: G. HOWELL

CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

SIGNATURE/BLOCK: OFFICE OF ENGINEERING

APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COOORDINATION

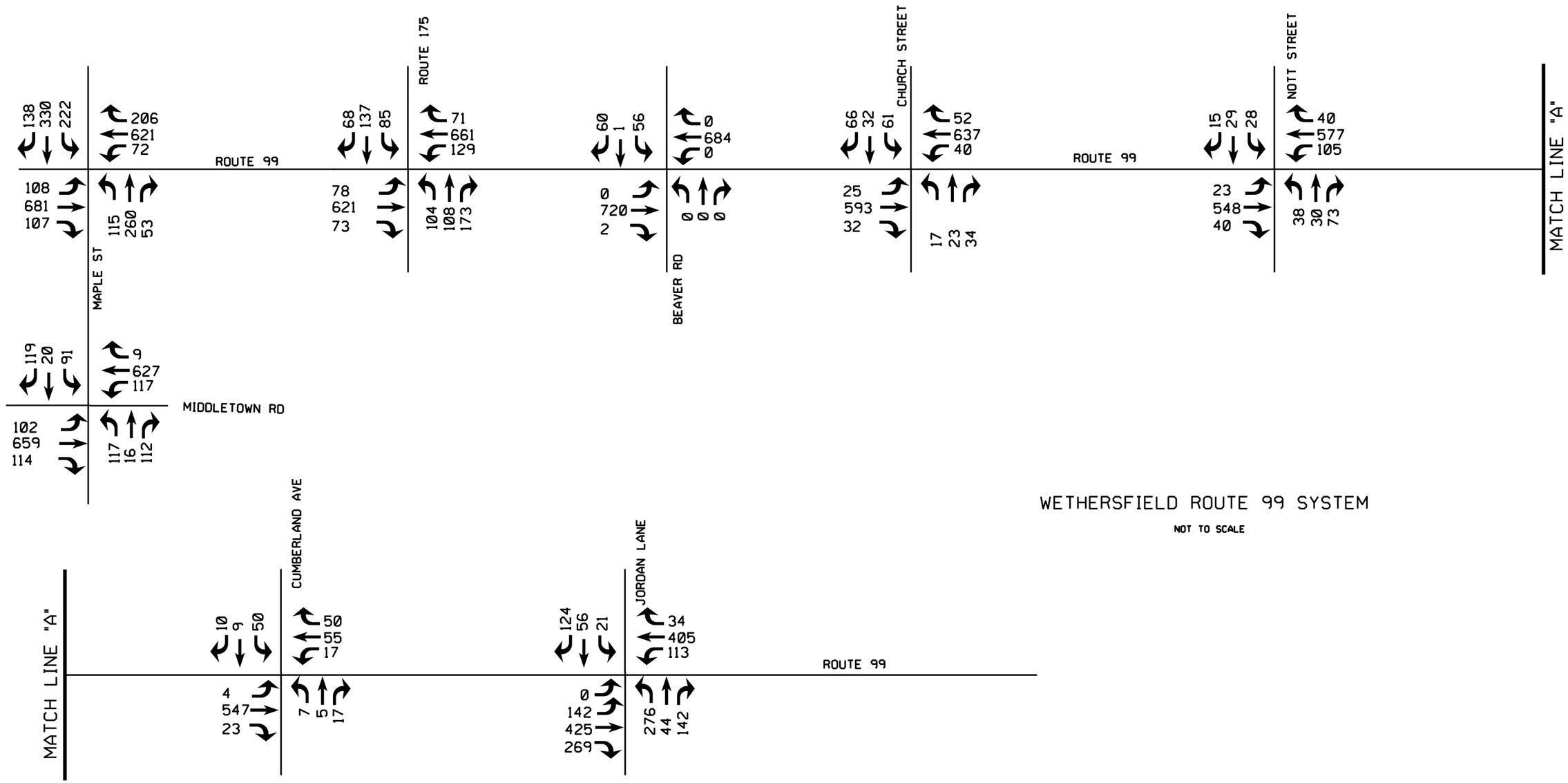
TOWN: WETHERSFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421

DRAWING NO.

SHEET NO.



WETHERSFIELD ROUTE 99 SYSTEM

NOT TO SCALE

PRELIMINARY ENGINEERING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: $DATE$

DESIGNER/DRAFTER: G. HOWELL

CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

SIGNATURE/BLOCK: OFFICE OF ENGINEERING

APPROVED BY:

PROJECT TITLE: CRCOG REGION SIGNAL COOORDINATION

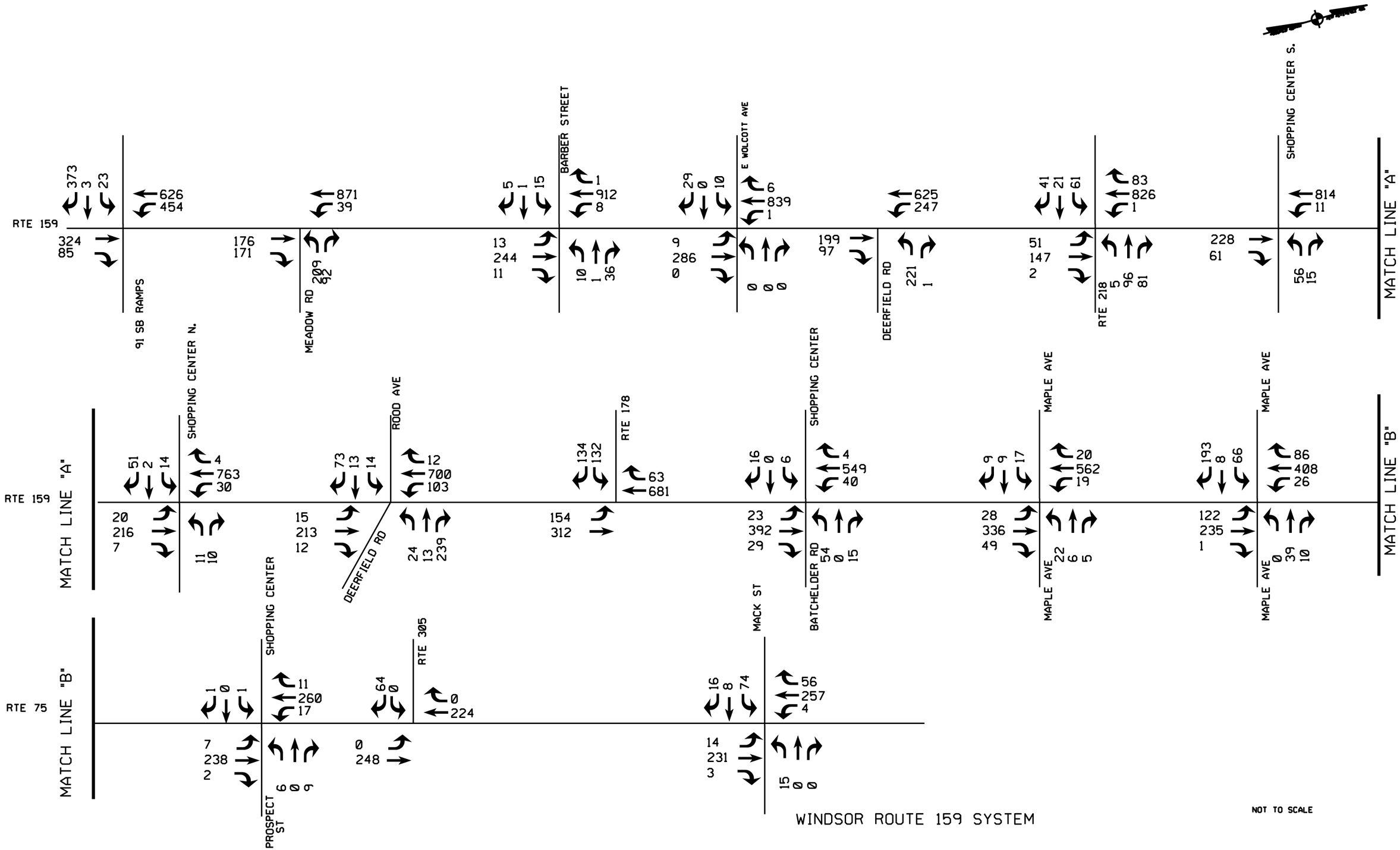
TOWN: WETHERSFIELD

DRAWING TITLE: 2018-2020 TRAFFIC VOLUMES SATURDAY PEAK HOUR

PROJECT NO. 0171-0421

DRAWING NO.

SHEET NO.



WINDSOR ROUTE 159 SYSTEM

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: $DATE$

DESIGNER/DRAFTER: A. AHUJA
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

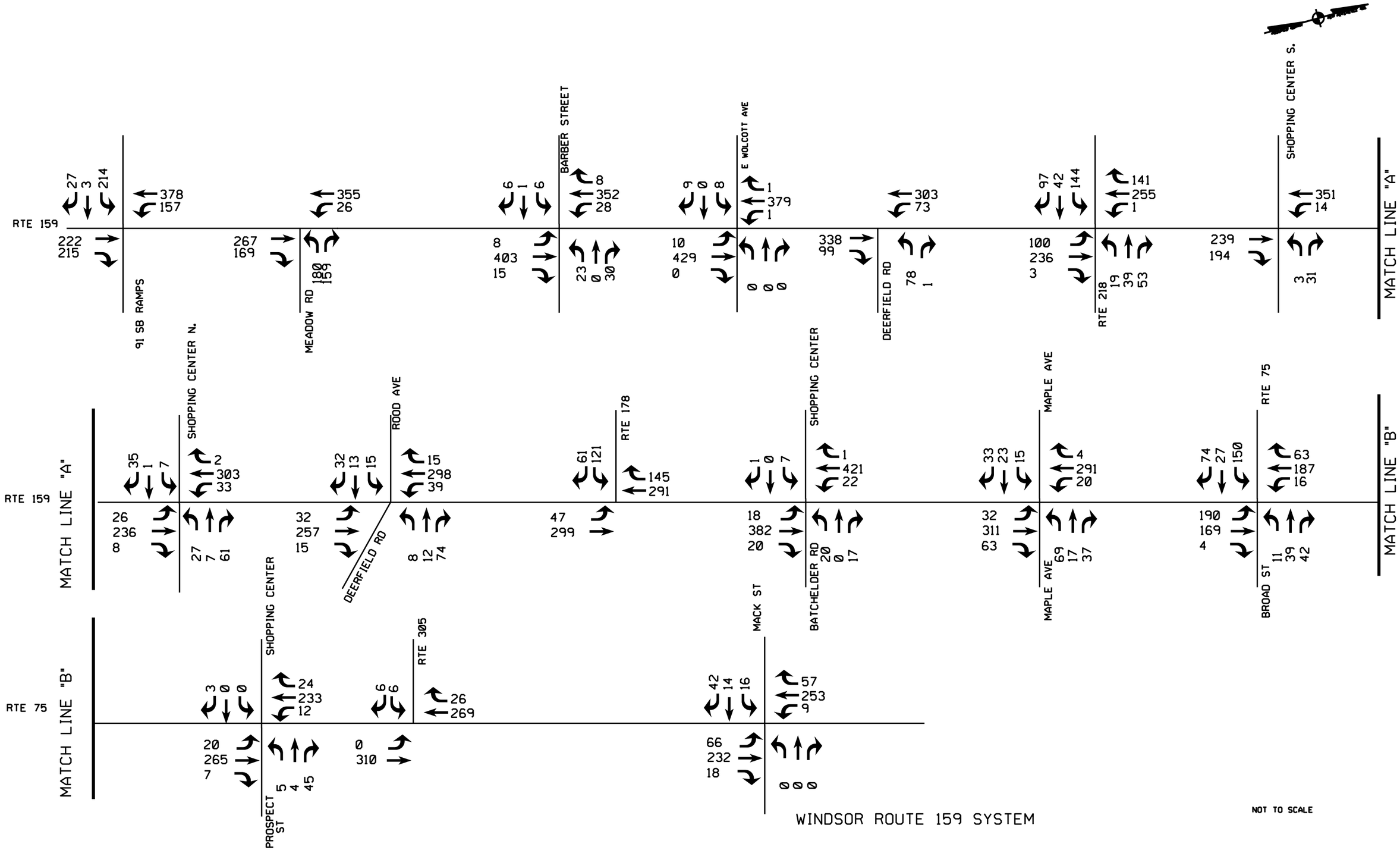
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGIONAL SIGNAL COORDINATION

TOWN: WINDSOR

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-38
SHEET NO.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: $DATE$

DESIGNER/DRAFTER: A. AHUJA
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILE$

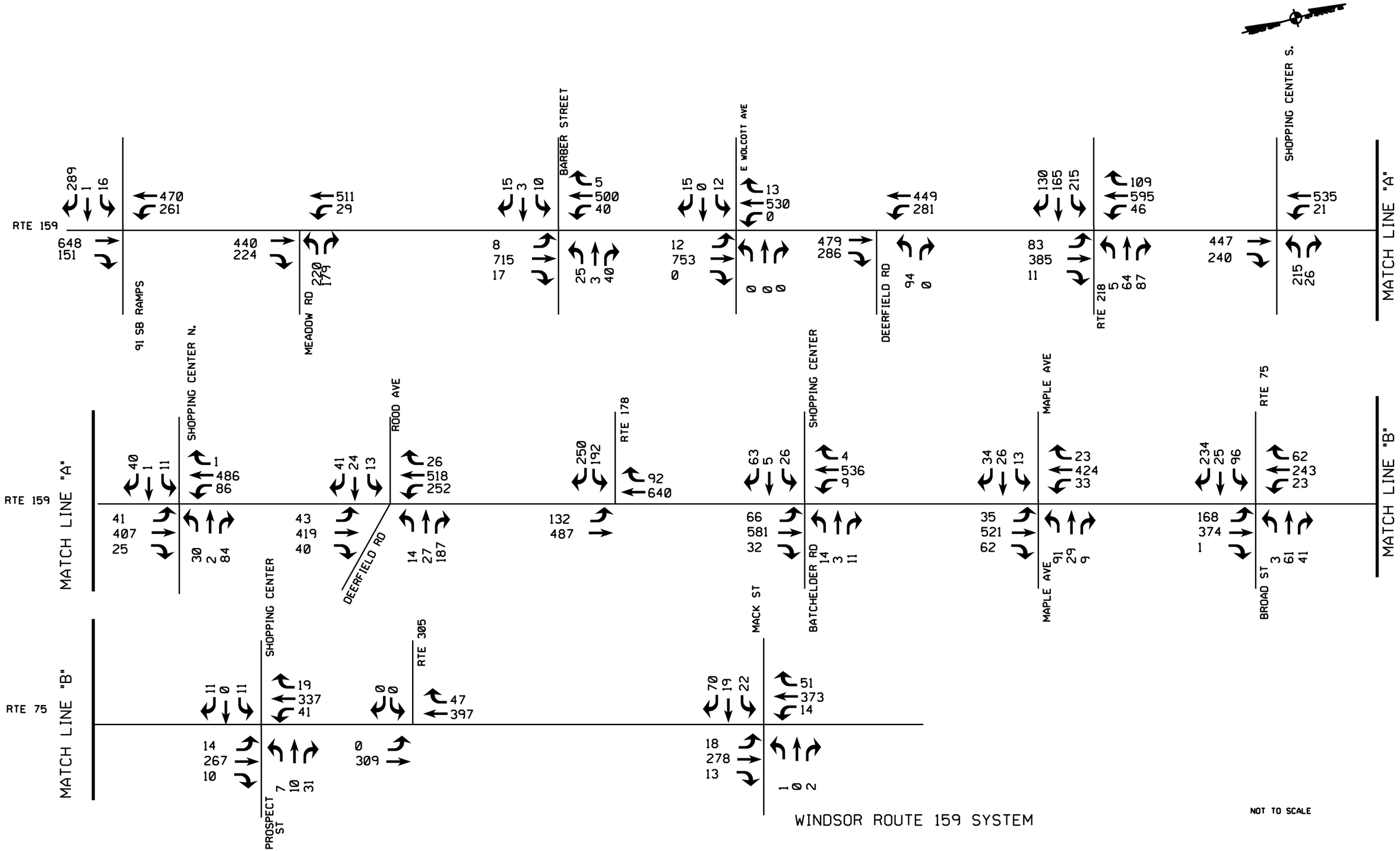
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGIONAL SIGNAL COORDINATION

TOWN: WINDSOR

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-38
SHEET NO.



WINDSOR ROUTE 159 SYSTEM

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date:DATE$

DESIGNER/DRAFTER: A. AHUJA
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

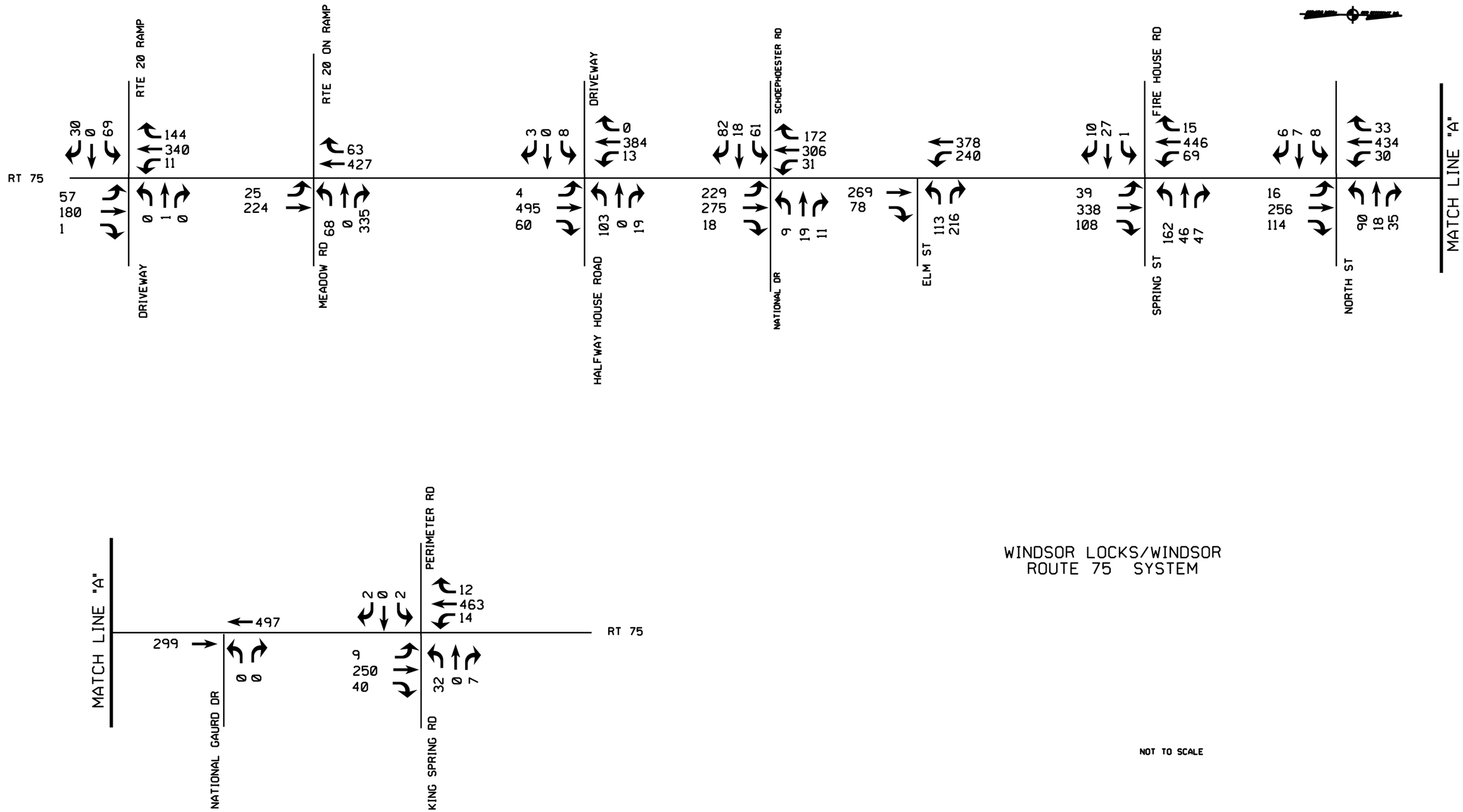
SIGNATURE BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: CRCOG REGIONAL SIGNAL COORDINATION

TOWN: WINDSOR

DRAWING TITLE: 2018 - 2020 TRAFFIC VOLUMES PM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-38
SHEET NO.



WINDSOR LOCKS/WINDSOR
ROUTE 75 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: A. AHUJA
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

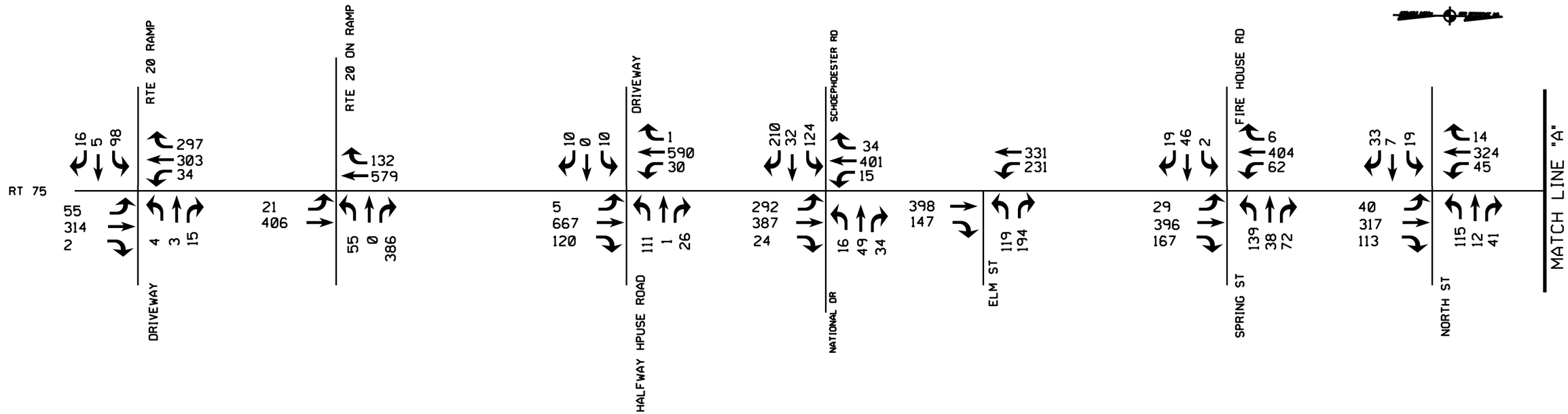
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

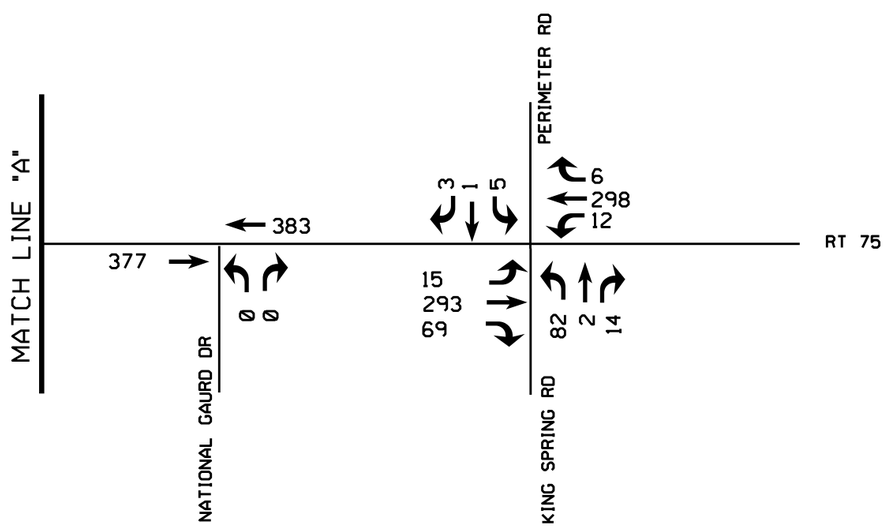
PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN:
WINDSOR LOCKS
WINDSOR

DRAWING TITLE:
2018-2020 TRAFFIC VOLUMES
AM PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 1





WINDSOR LOCKS/WINDSOR
ROUTE 75 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: A. AHUJA
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

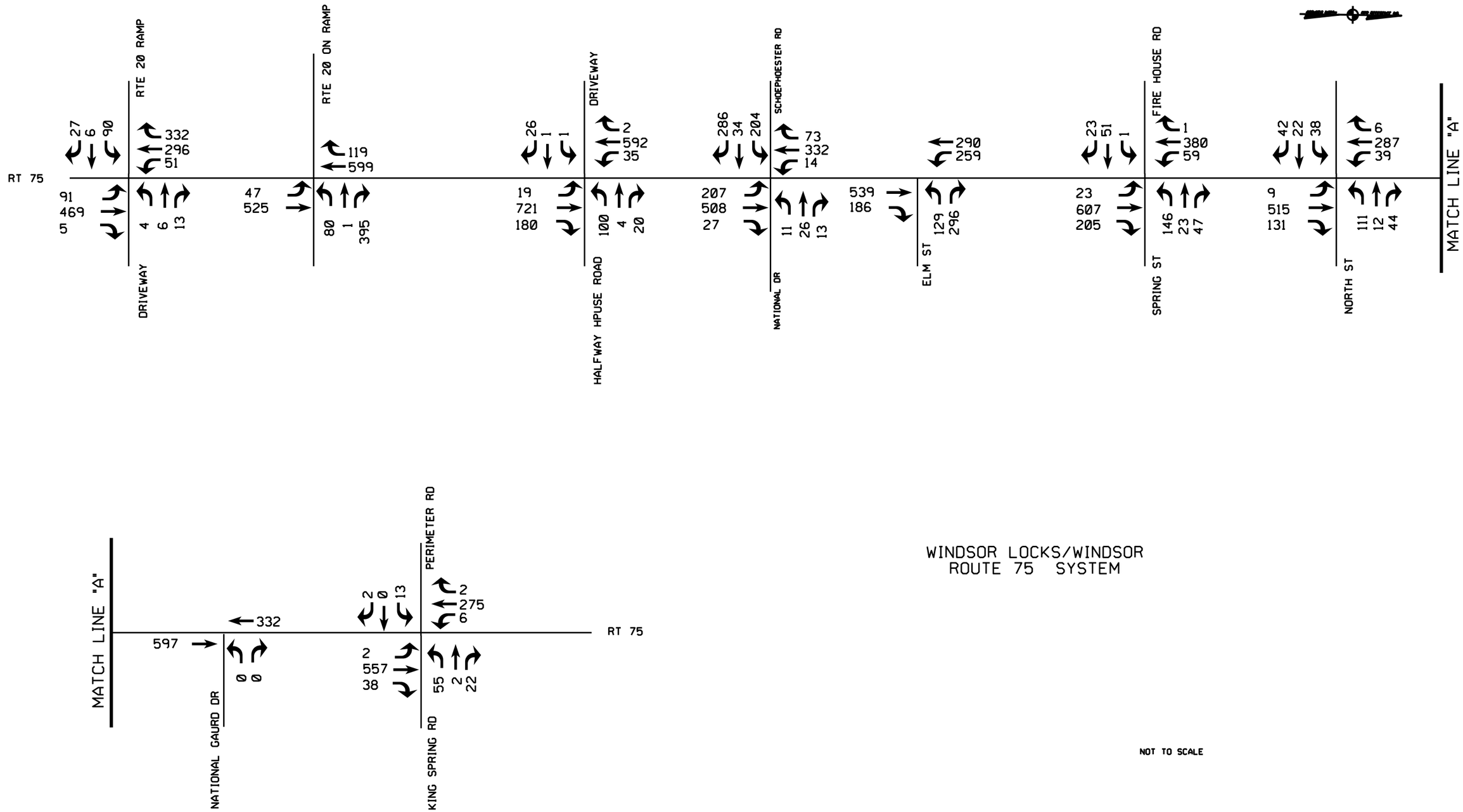
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

TOWN:
WINDSOR LOCKS
WINDSOR

DRAWING TITLE:
2018-2020 TRAFFIC VOLUMES
MIDDAY PEAK HOUR

PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 2



WINDSOR LOCKS/WINDSOR
ROUTE 75 SYSTEM

NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date:DATE$

DESIGNER/DRAFTER: A. AHUJA
CHECKED BY: J. KEISER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: $FILEA$

SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

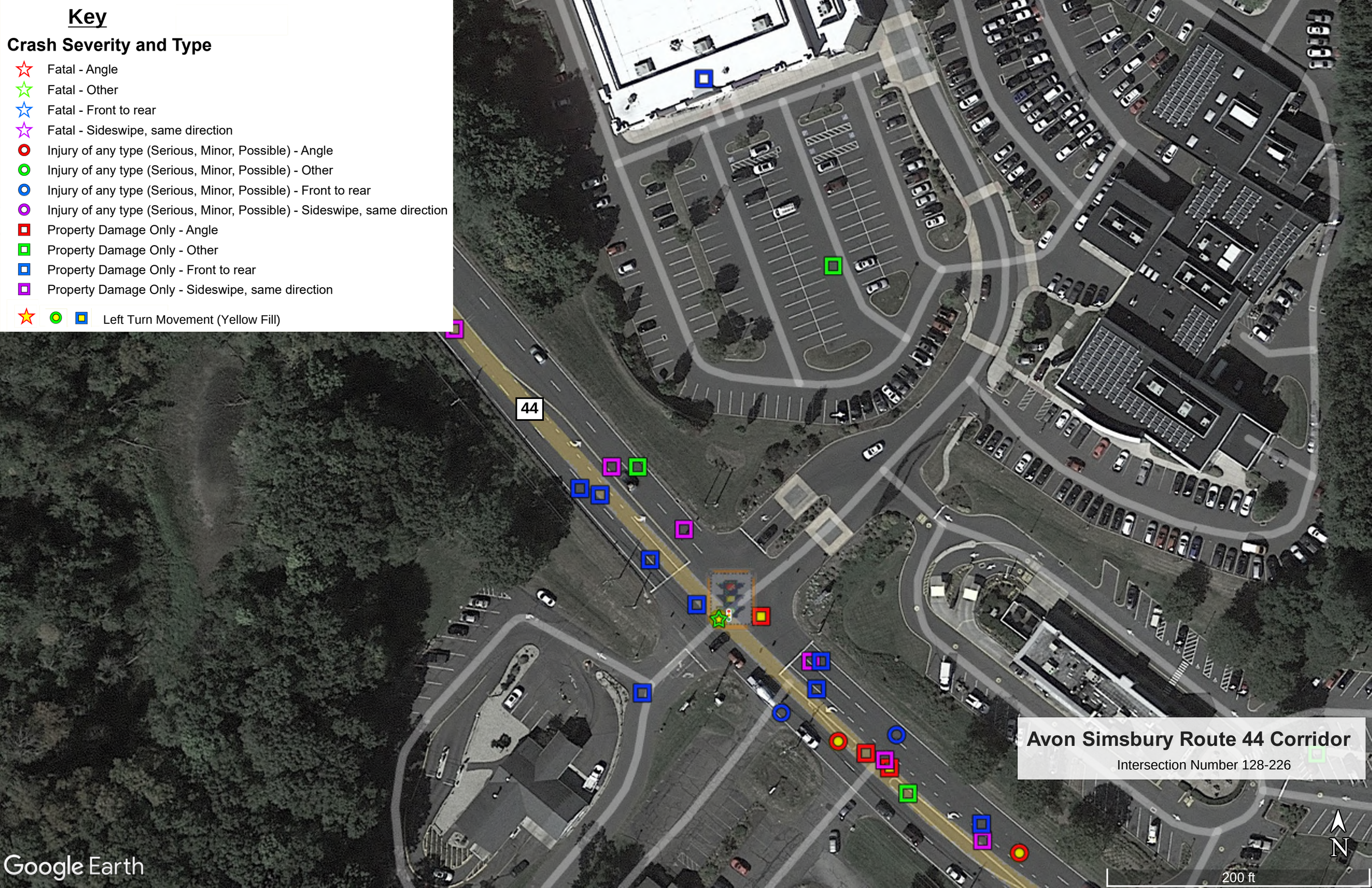
PROJECT TITLE:
CRCOG REGION SIGNAL COORDINATION

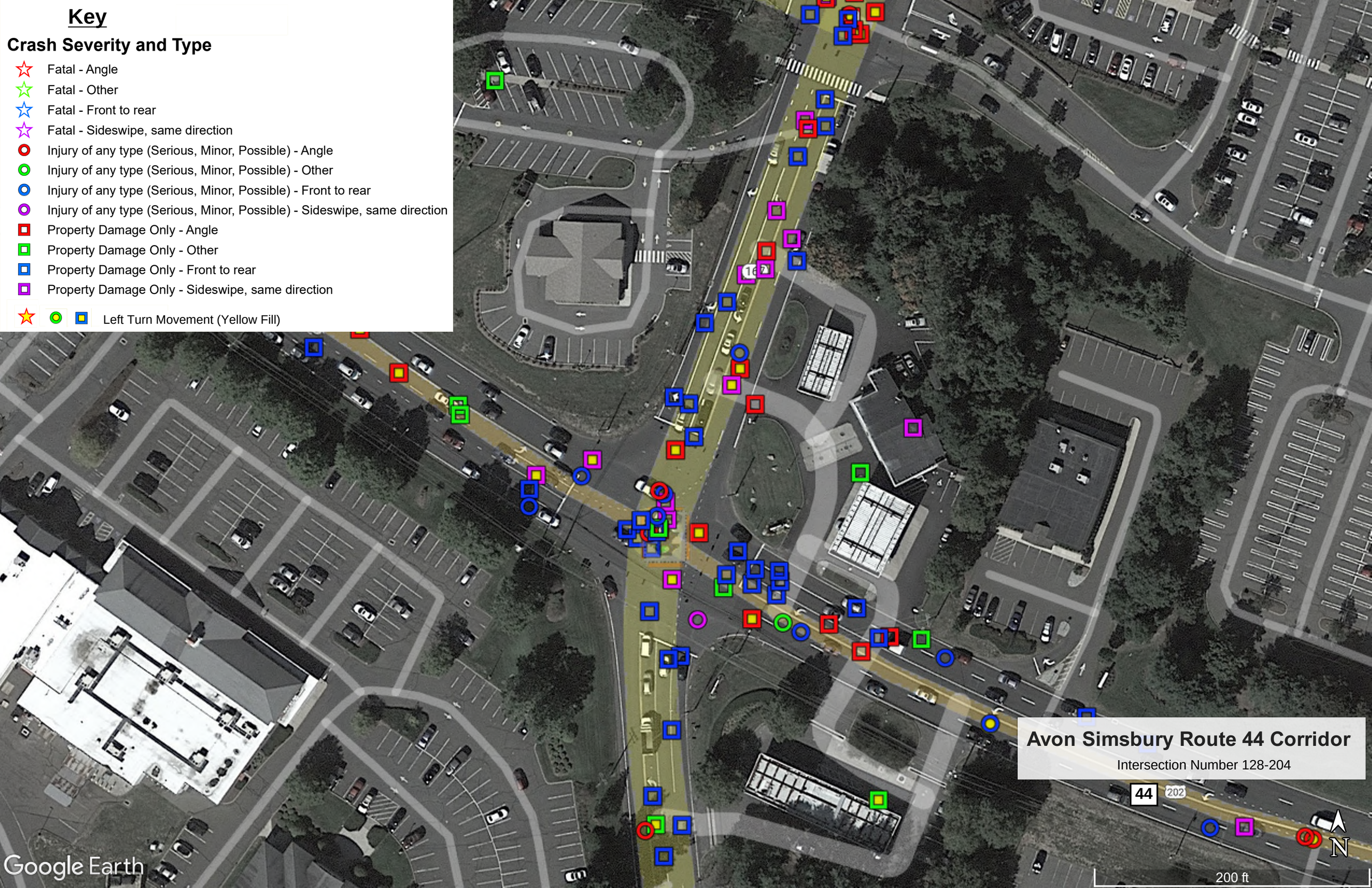
TOWN:
WINDSOR LOCKS
WINDSOR

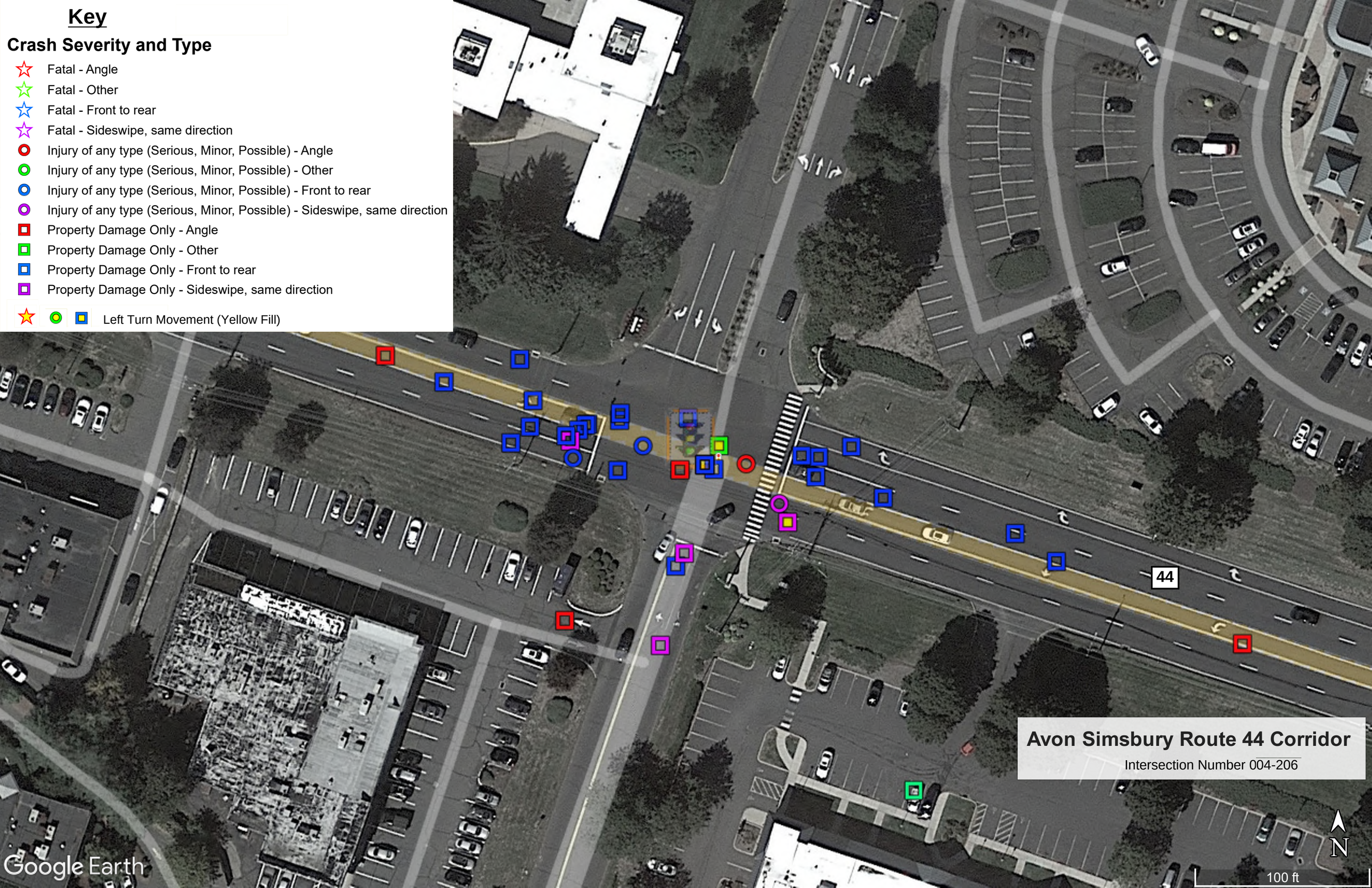
DRAWING TITLE:
2018-2020 TRAFFIC VOLUMES
PM PEAK HOUR

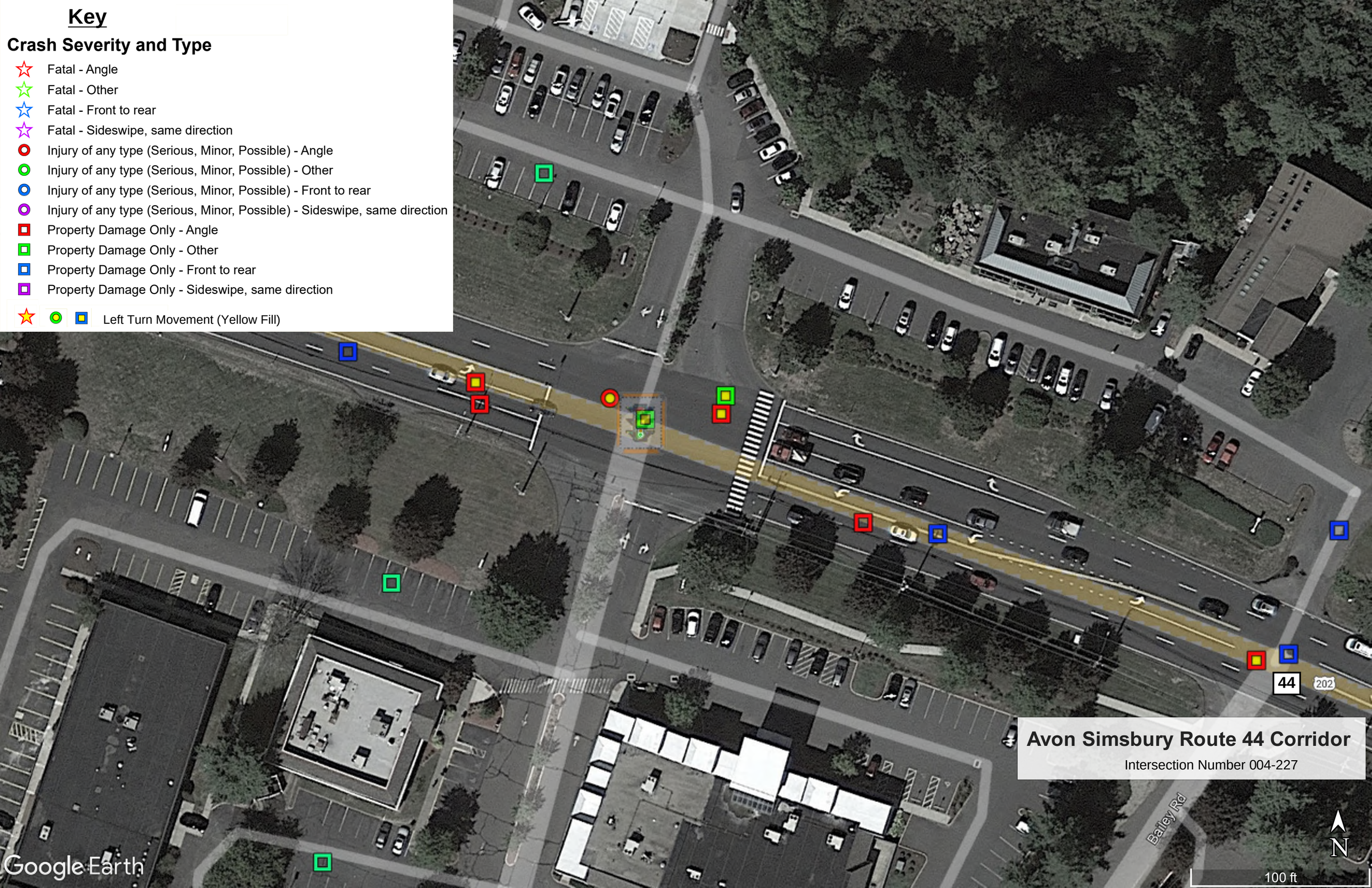
PROJECT NO. 0171-0421
DRAWING NO. TMC-43
SHEET NO. 3

Appendix D
Phase 2 Crash Diagrams


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
44
Avon Simsbury Route 44 Corridor
Intersection Number 128-226
N
200 ft
Google Earth

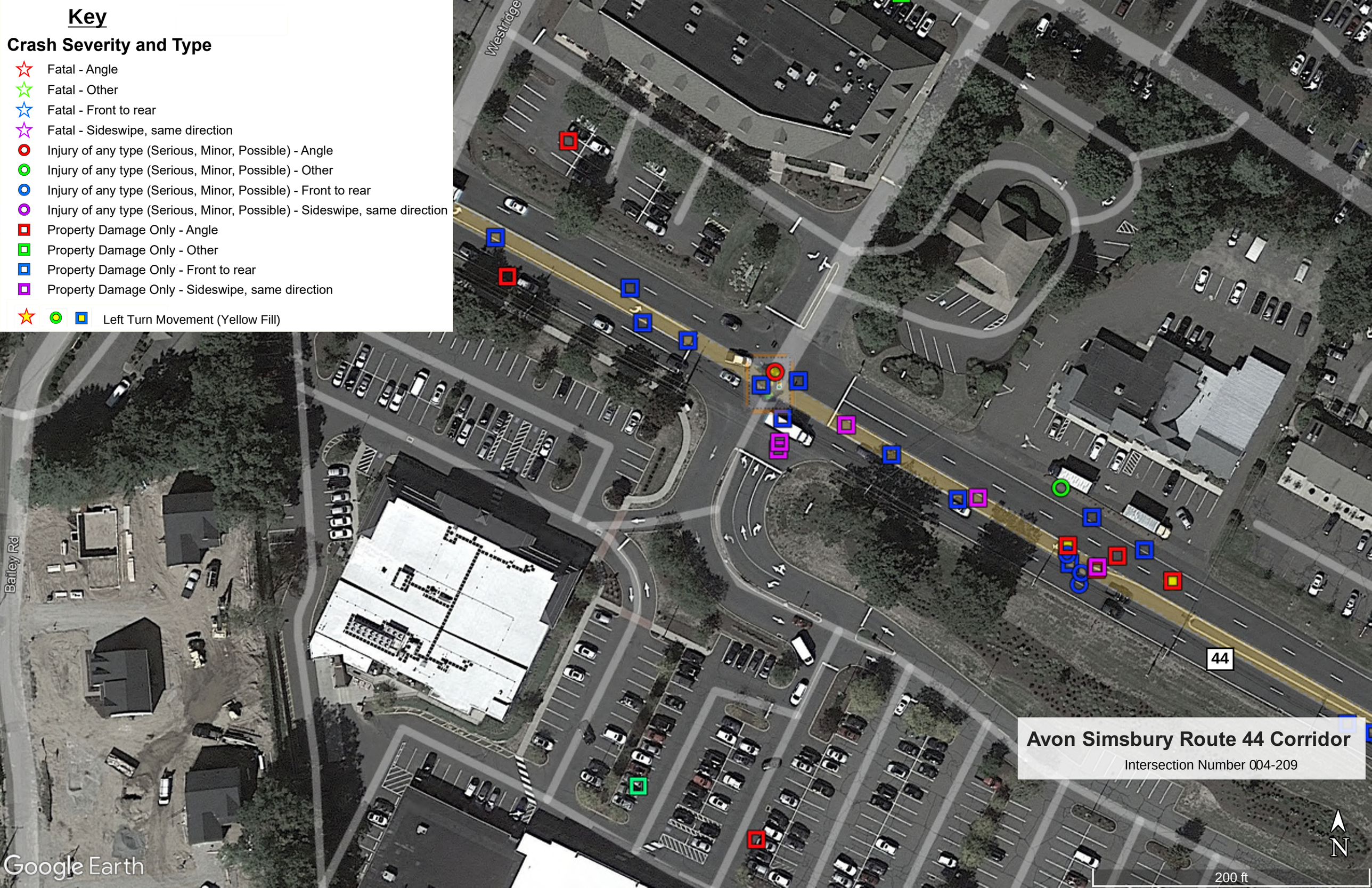

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Avon Simsbury Route 44 Corridor
Intersection Number 128-204
44
202
N
200 ft
Google Earth

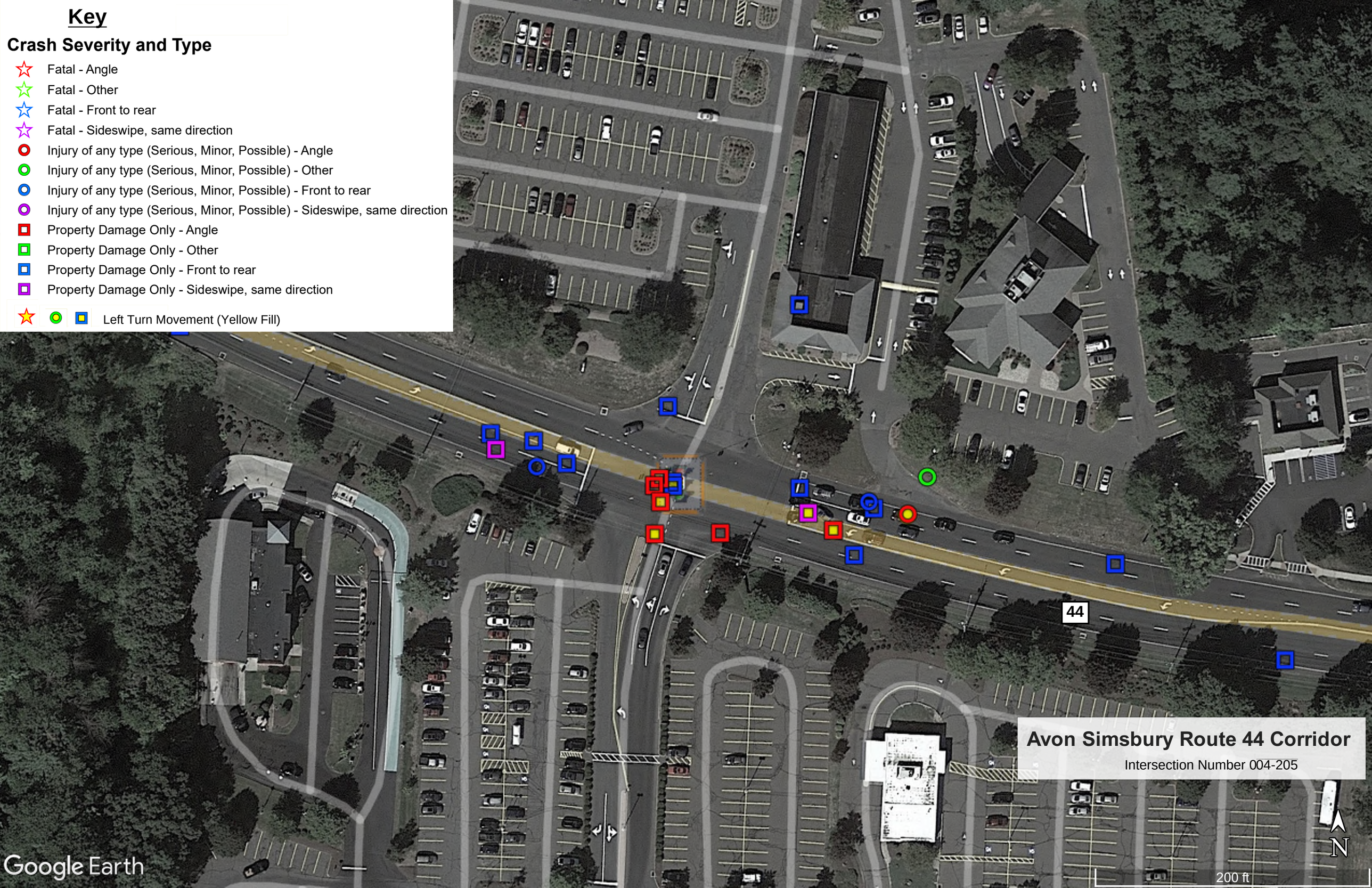

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
44
Avon Simsbury Route 44 Corridor
Intersection Number 004-206
N
100 ft
Google Earth

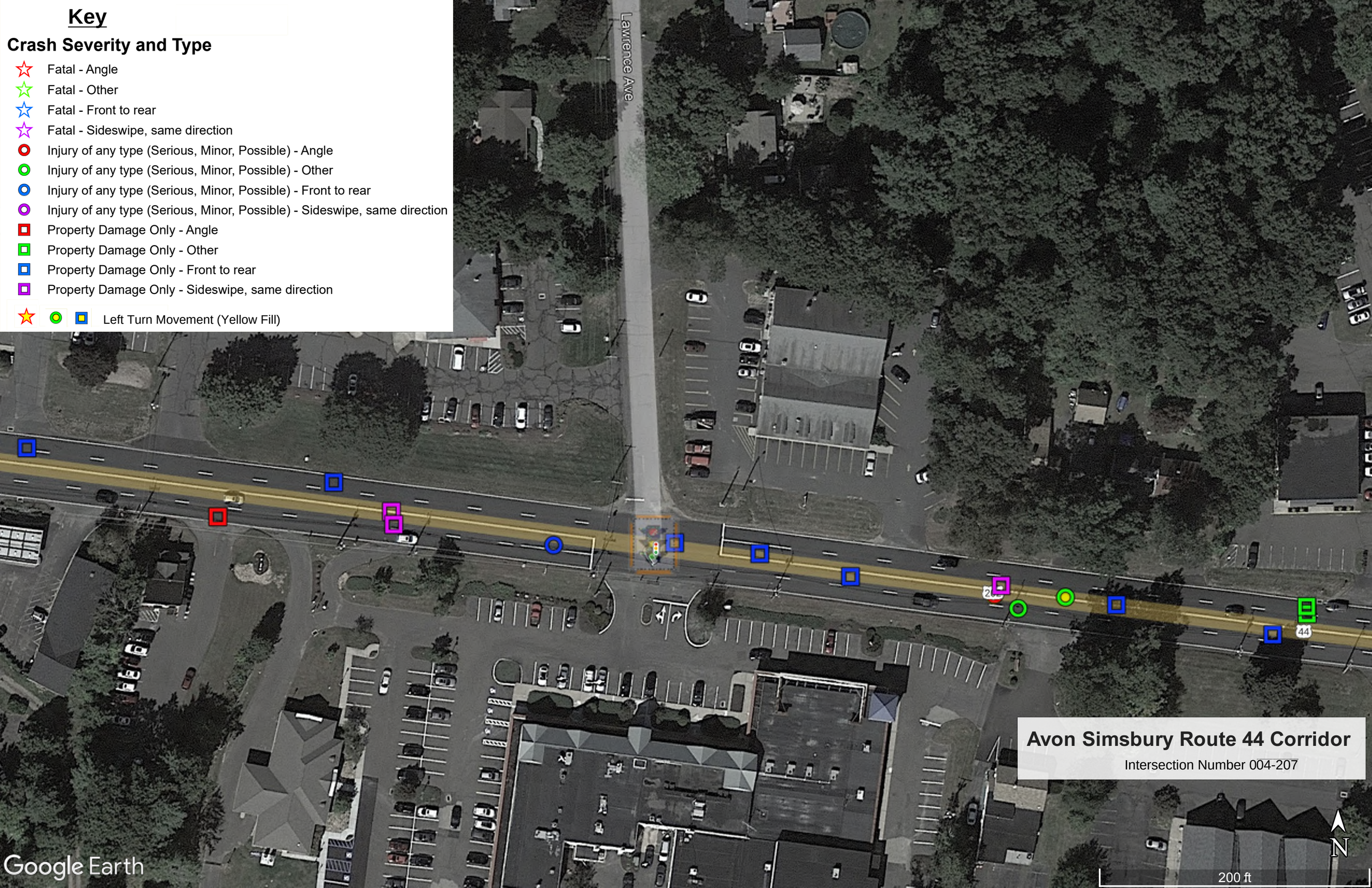


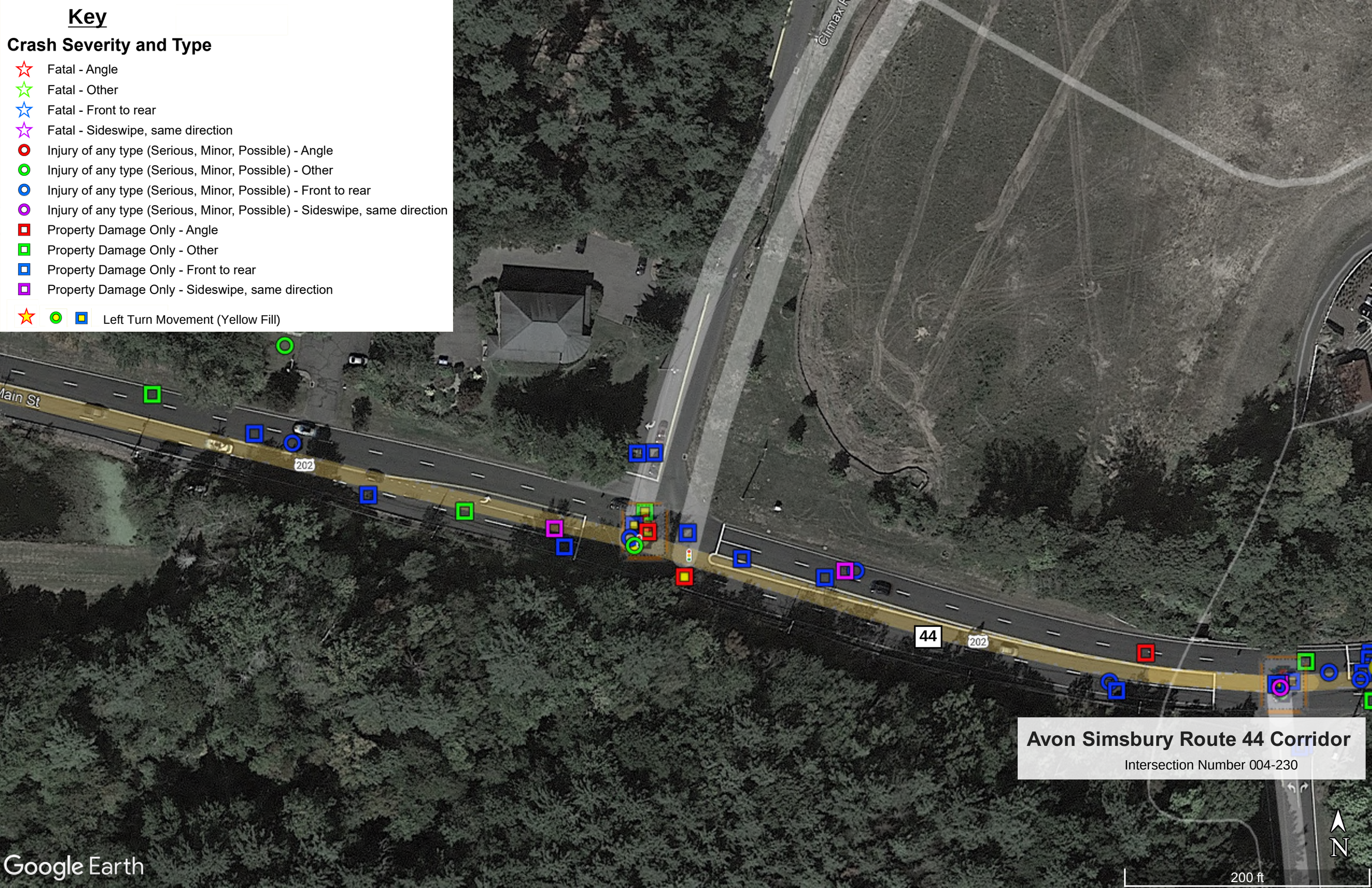
Avon Simsbury Route 44 Corridor

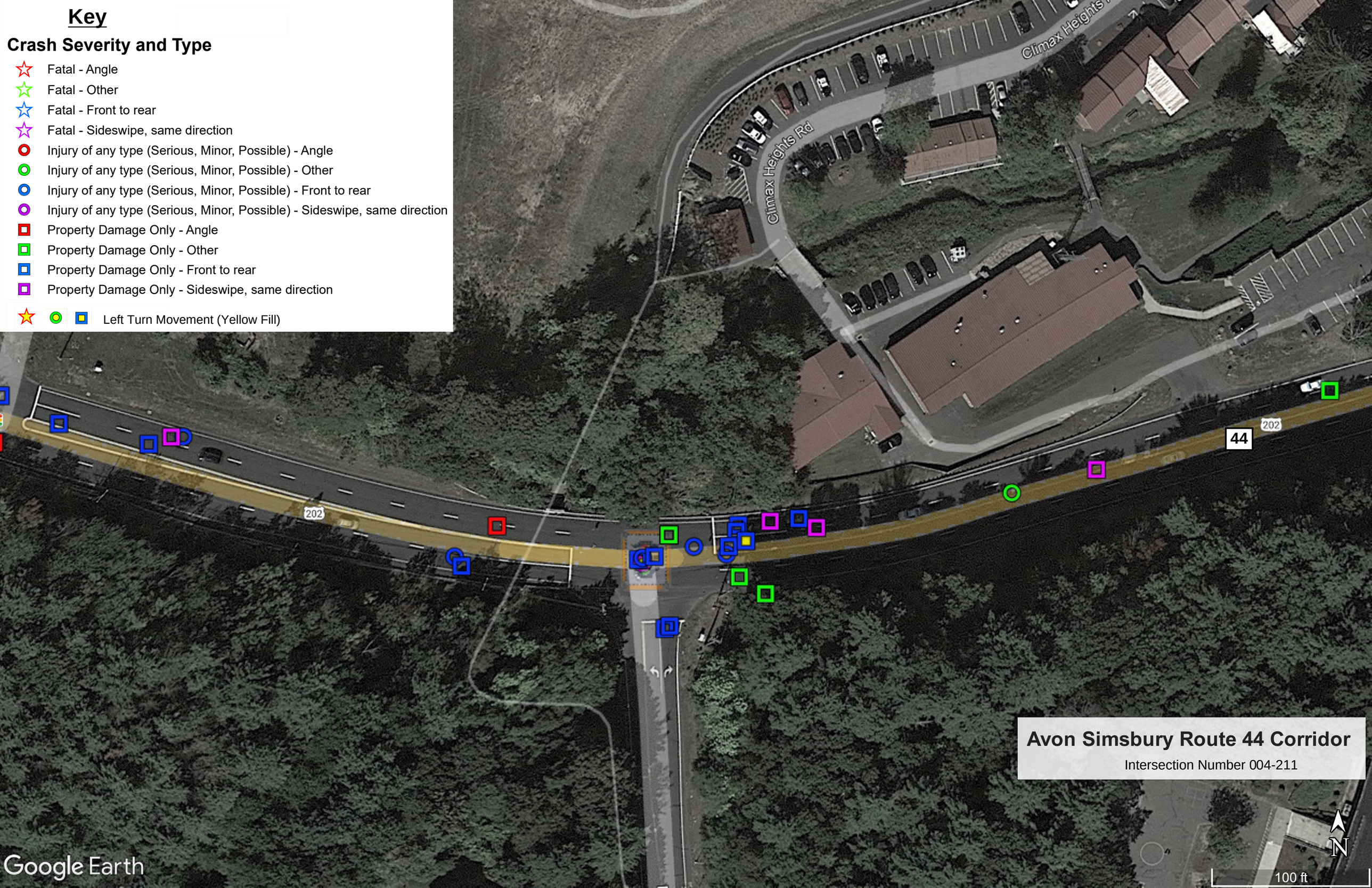
Intersection Number 004-227

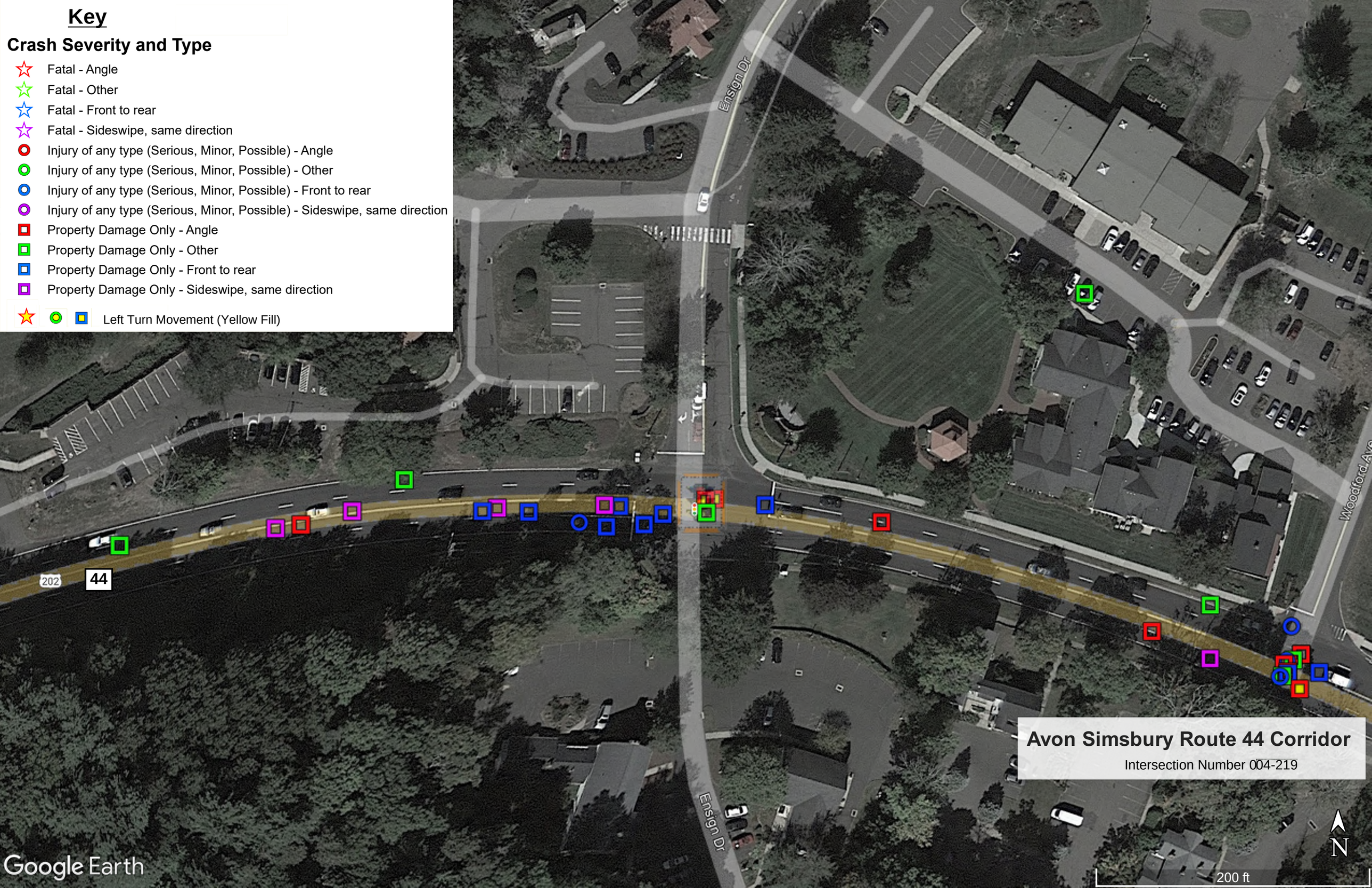

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Westridge
Bailey Rd
44
Avon Simsbury Route 44 Corridor
Intersection Number 004-209
N
200 ft
Google Earth

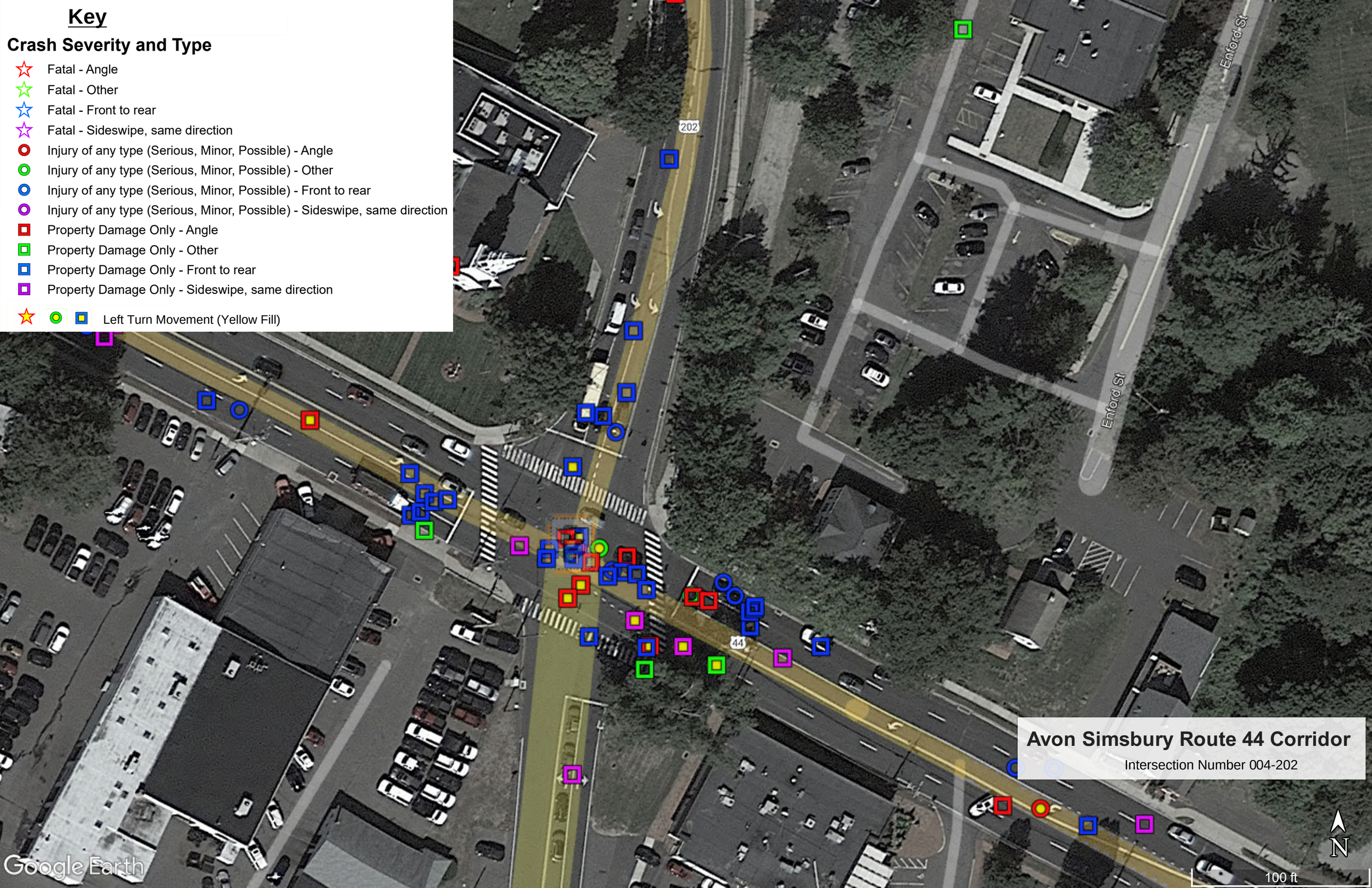

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
44
Avon Simsbury Route 44 Corridor
Intersection Number 004-205
N
200 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Lawrence Ave
44
Avon Simsbury Route 44 Corridor
Intersection Number 004-207
N
200 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Climax R
Main St
202
44
202
Avon Simsbury Route 44 Corridor
Intersection Number 004-230
N
200 ft
Google Earth

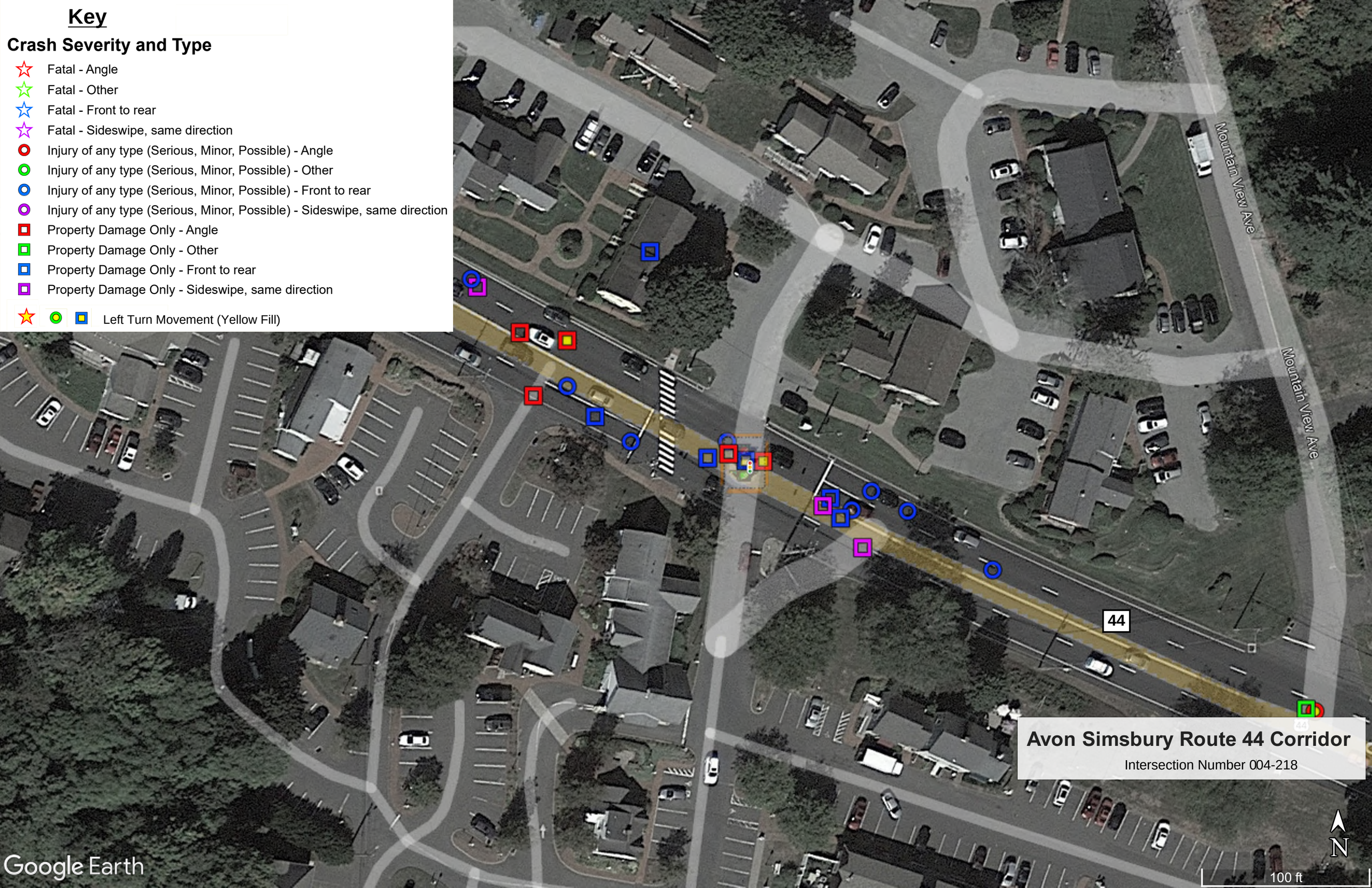

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Climax Heights Rd
Climax Heights
202
44
Avon Simsbury Route 44 Corridor
Intersection Number 004-211
N
100 ft
Google Earth

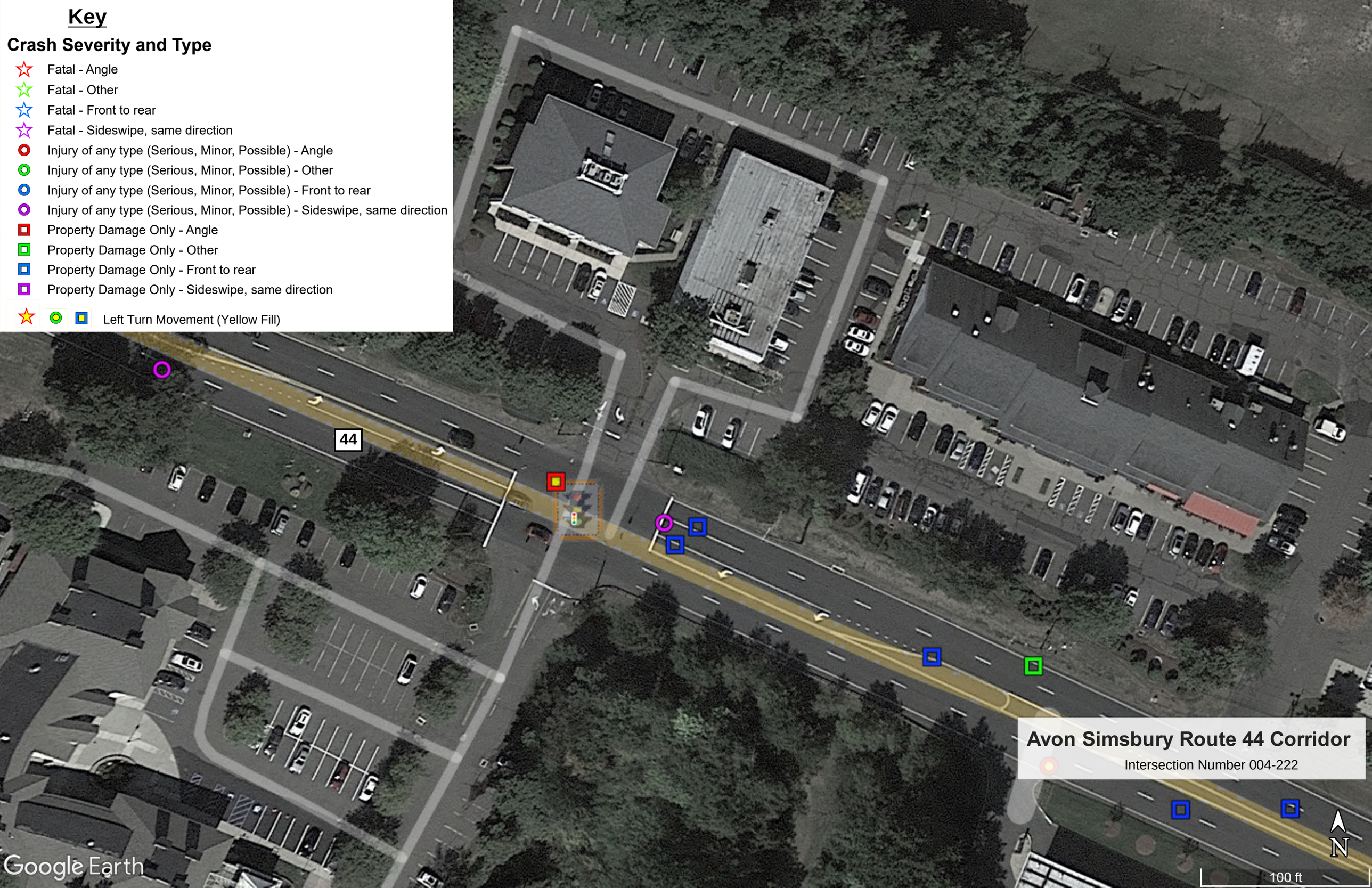

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Ensign Dr
Ensign Dr
Woodford Av
202
44
Avon Simsbury Route 44 Corridor
Intersection Number 004-219
N
200 ft
Google Earth

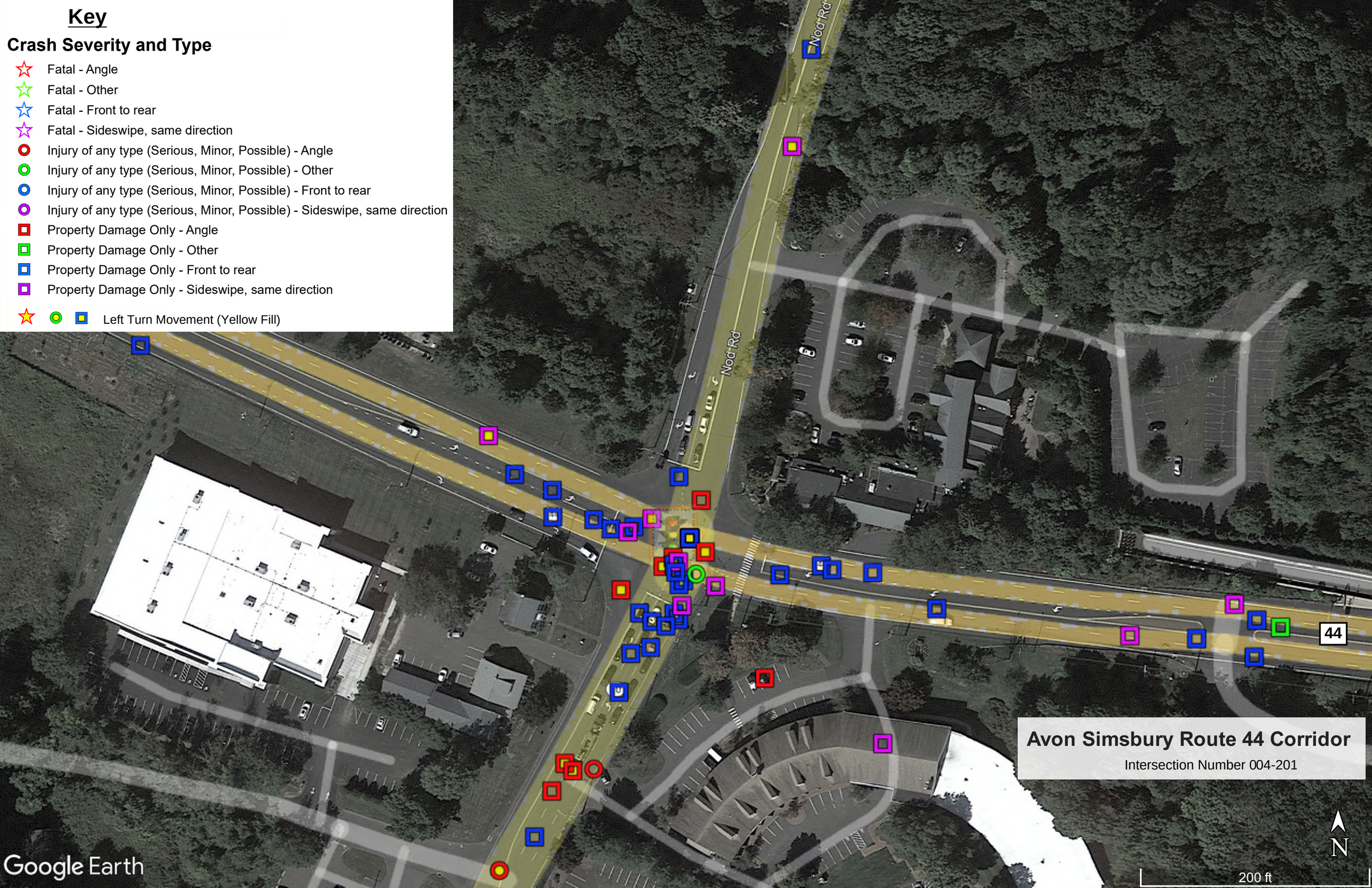


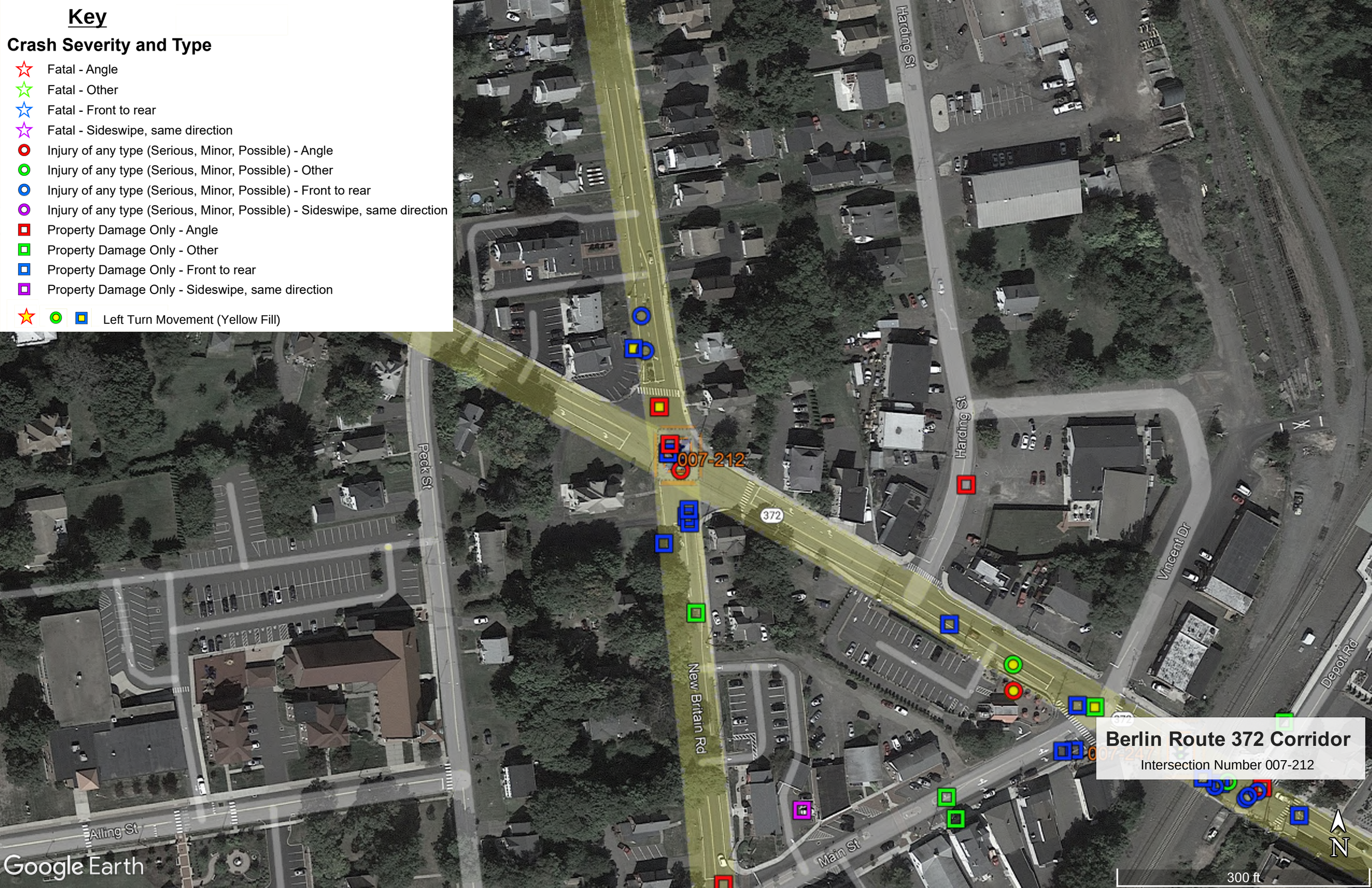
Avon Simsbury Route 44 Corridor

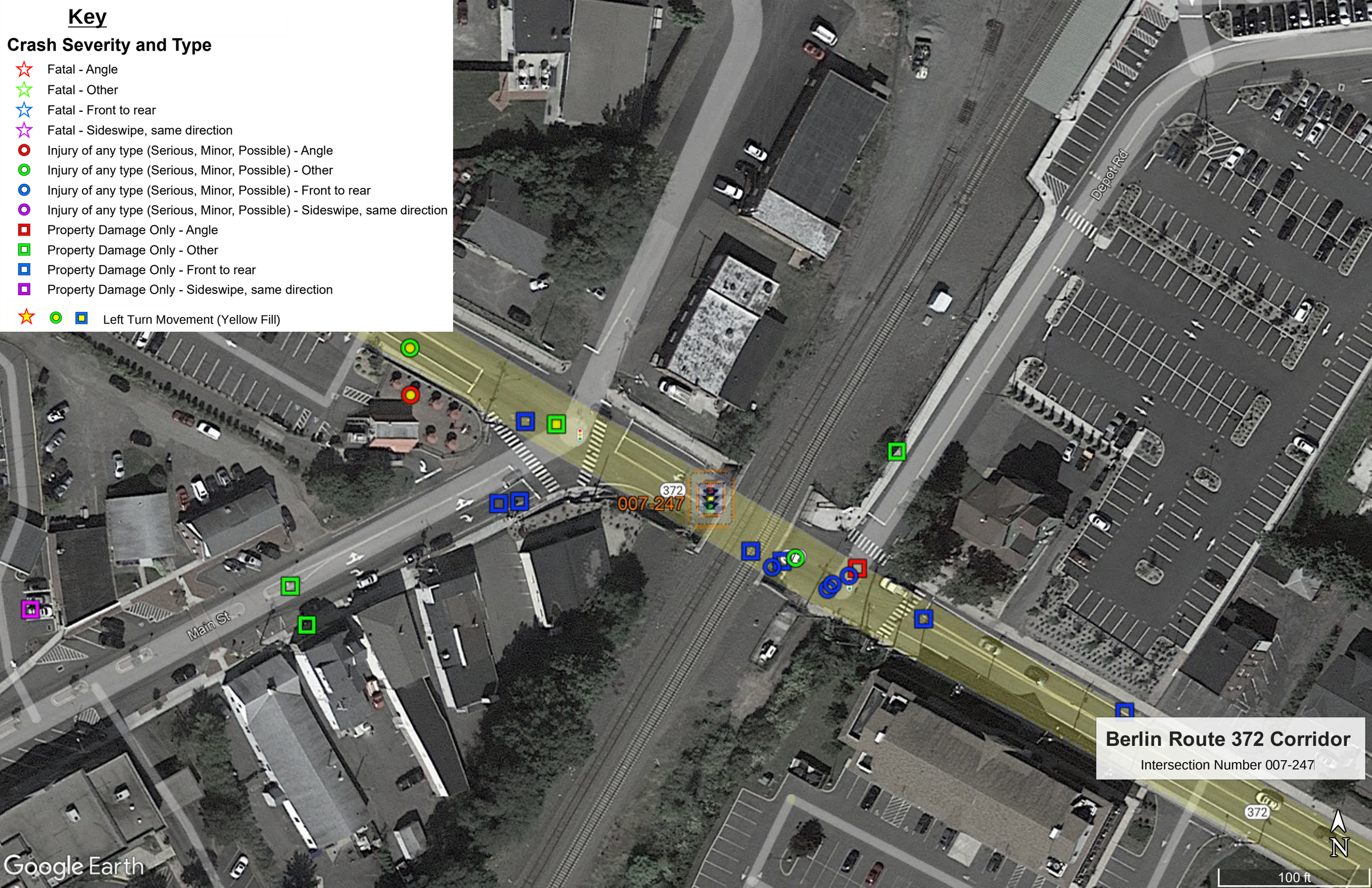
Intersection Number 004-202

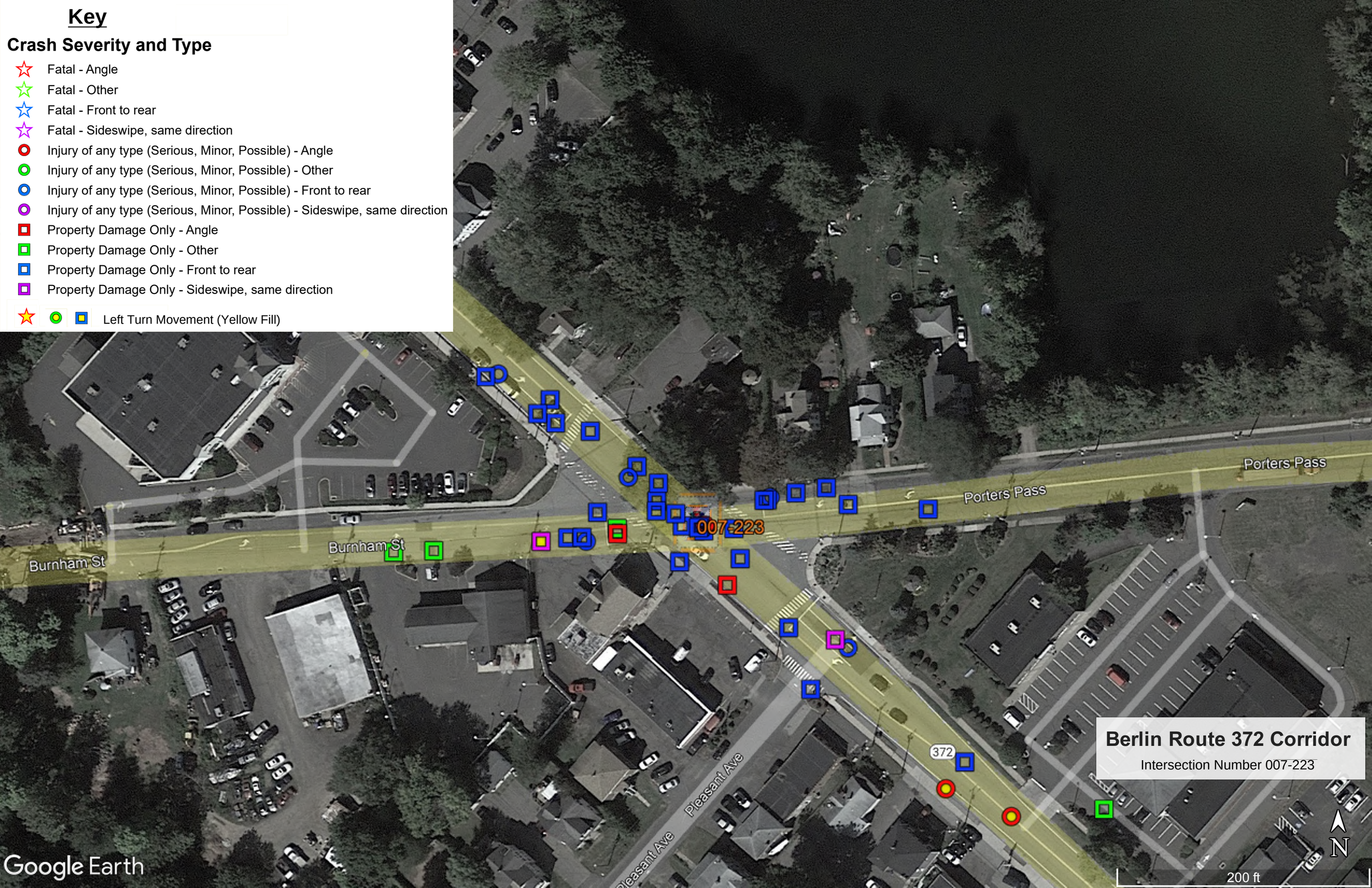

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Mountain View Ave
Mountain View Ave
44
Avon Simsbury Route 44 Corridor
Intersection Number 004-218
N
100 ft
Google Earth

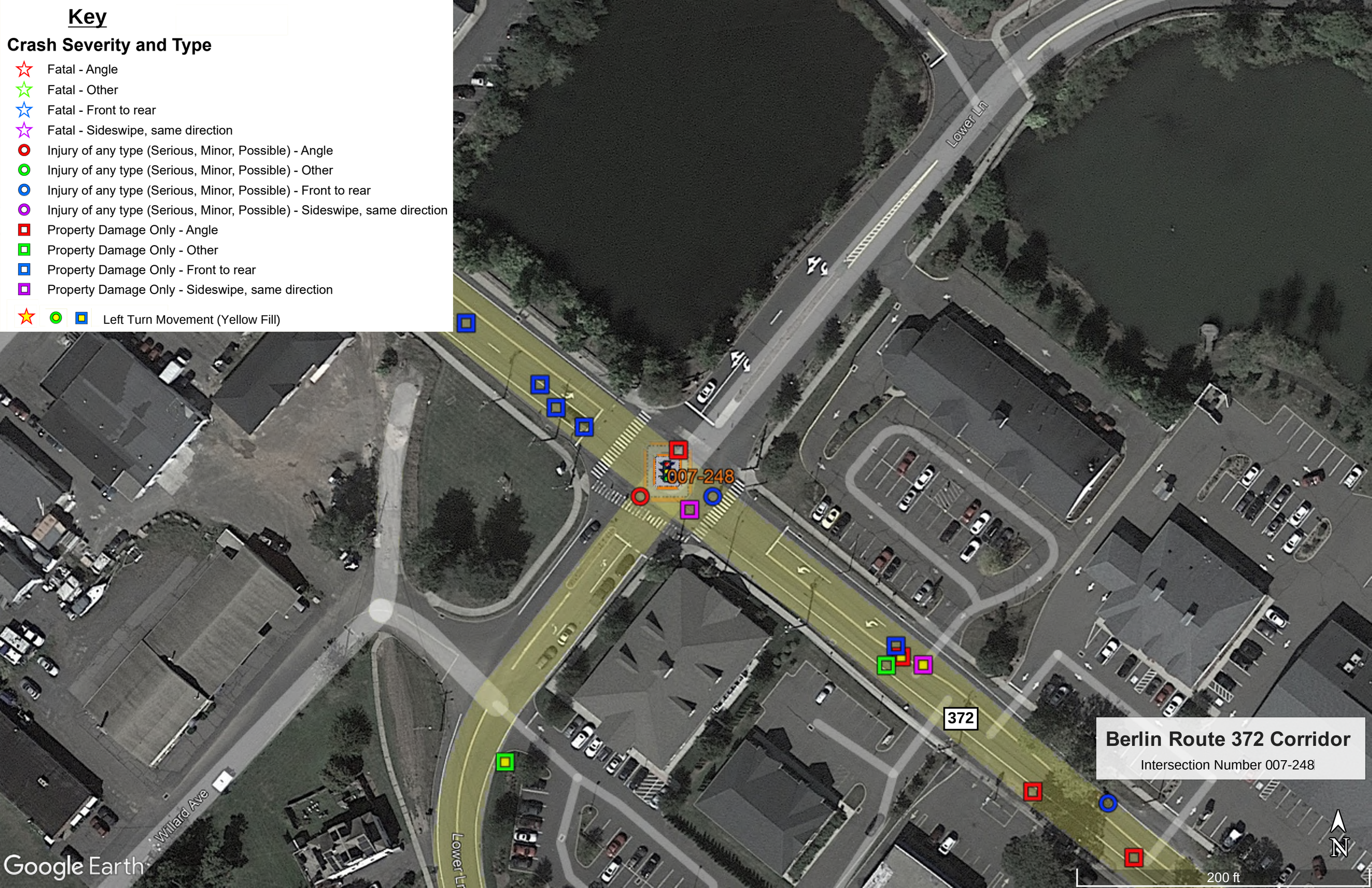

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
44
Avon Simsbury Route 44 Corridor
Intersection Number 004-222
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Nod Rd
Nod Rd
44
Avon Simsbury Route 44 Corridor
Intersection Number 004-201
N
200 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Harding St
Harding St
Peck St
Alling St
New Britain Rd
Main St
Vincent Dr
Depot Rd
372
007-212
007-247
Berlin Route 372 Corridor
Intersection Number 007-212
N
300 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Depot Rd
Main St
372
007-247
Berlin Route 372 Corridor
Intersection Number 007-247
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Burnham St
Burnham St
Porters Pass
Porters Pass
Porters Pass
007-223
372
Pleasant Ave
Pleasant Ave
Berlin Route 372 Corridor
Intersection Number 007-223
N
200 ft
Google Earth

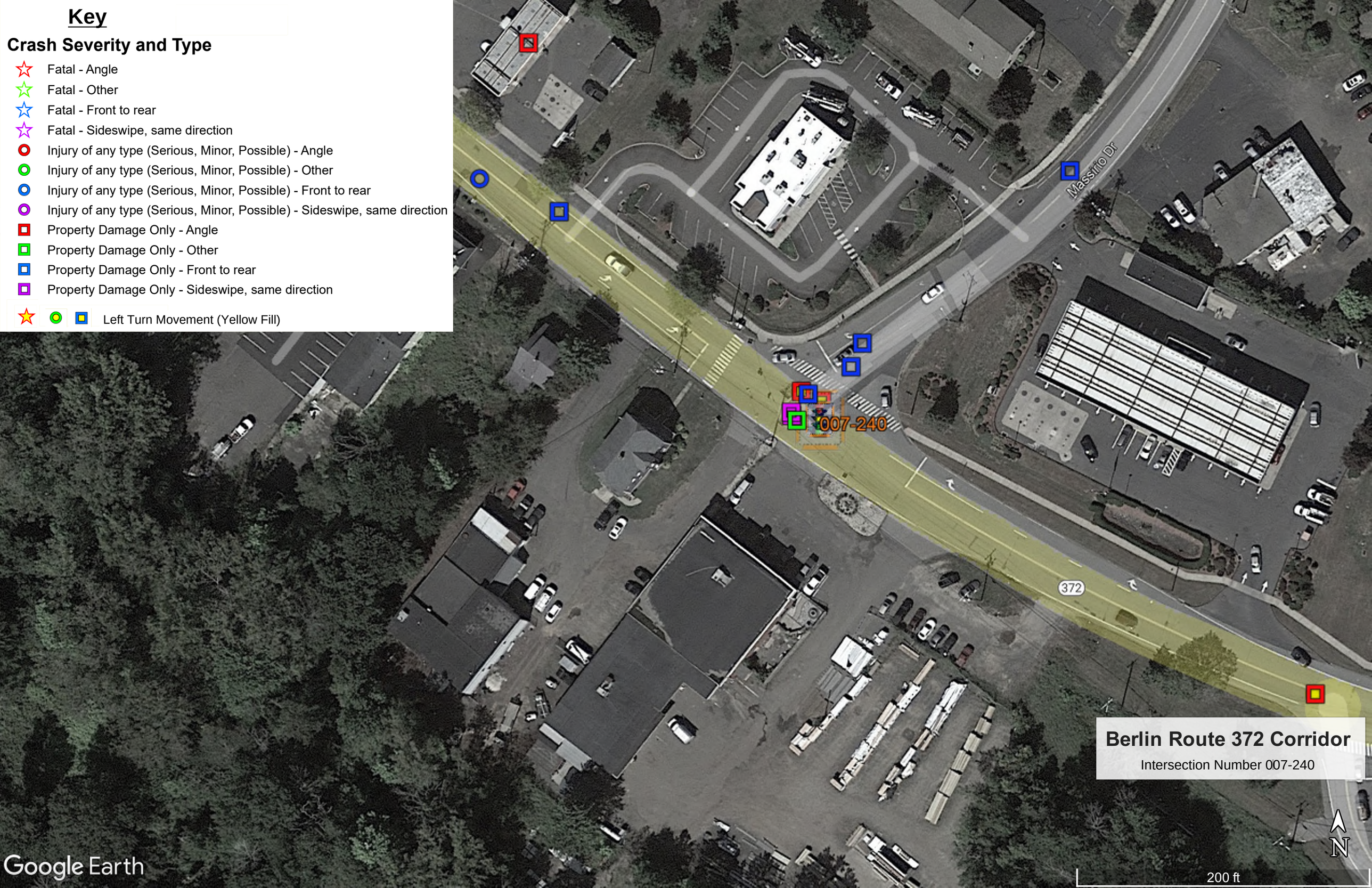

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Lower Ln
007-248
372
Willard Ave
Lower Ln
Google Earth
Berlin Route 372 Corridor
Intersection Number 007-248
N
200 ft

Key

Crash Severity and Type

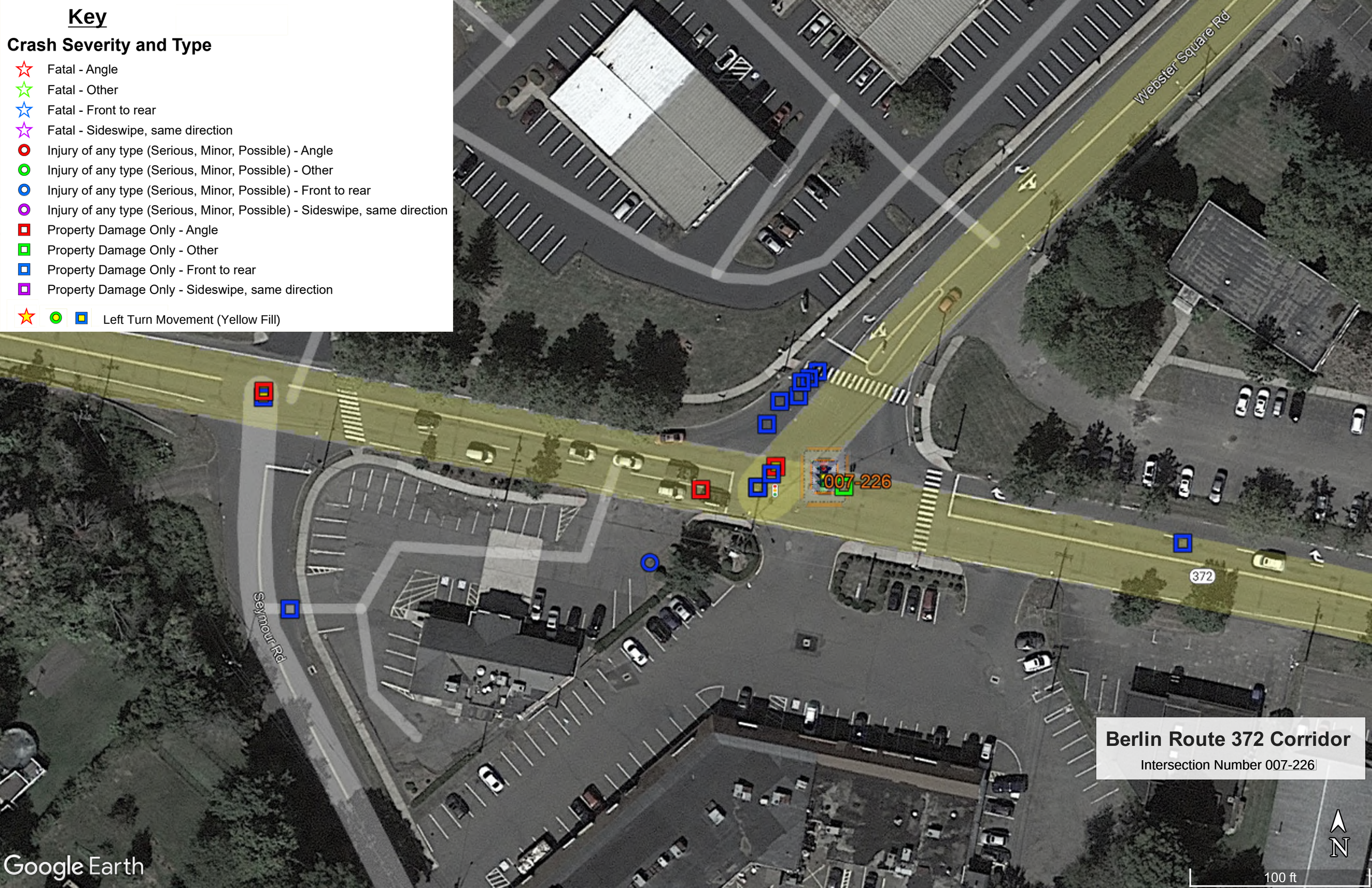
- Fatal - Angle
- Fatal - Other
- Fatal - Front to rear
- Fatal - Sideswipe, same direction
- Injury of any type (Serious, Minor, Possible) - Angle
- Injury of any type (Serious, Minor, Possible) - Other
- Injury of any type (Serious, Minor, Possible) - Front to rear
- Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
- Property Damage Only - Angle
- Property Damage Only - Other
- Property Damage Only - Front to rear
- Property Damage Only - Sideswipe, same direction

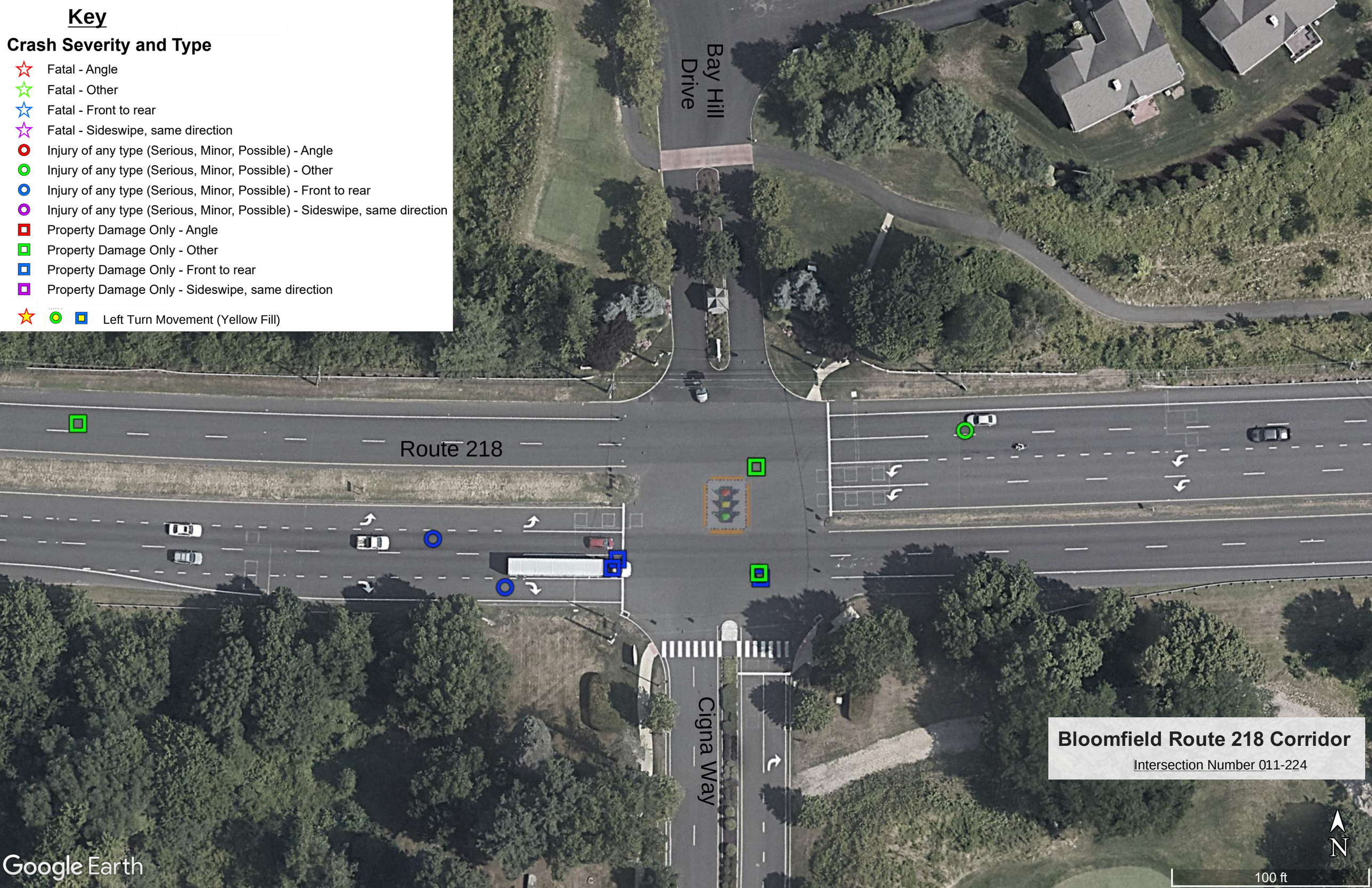
Left Turn Movement (Yellow Fill)

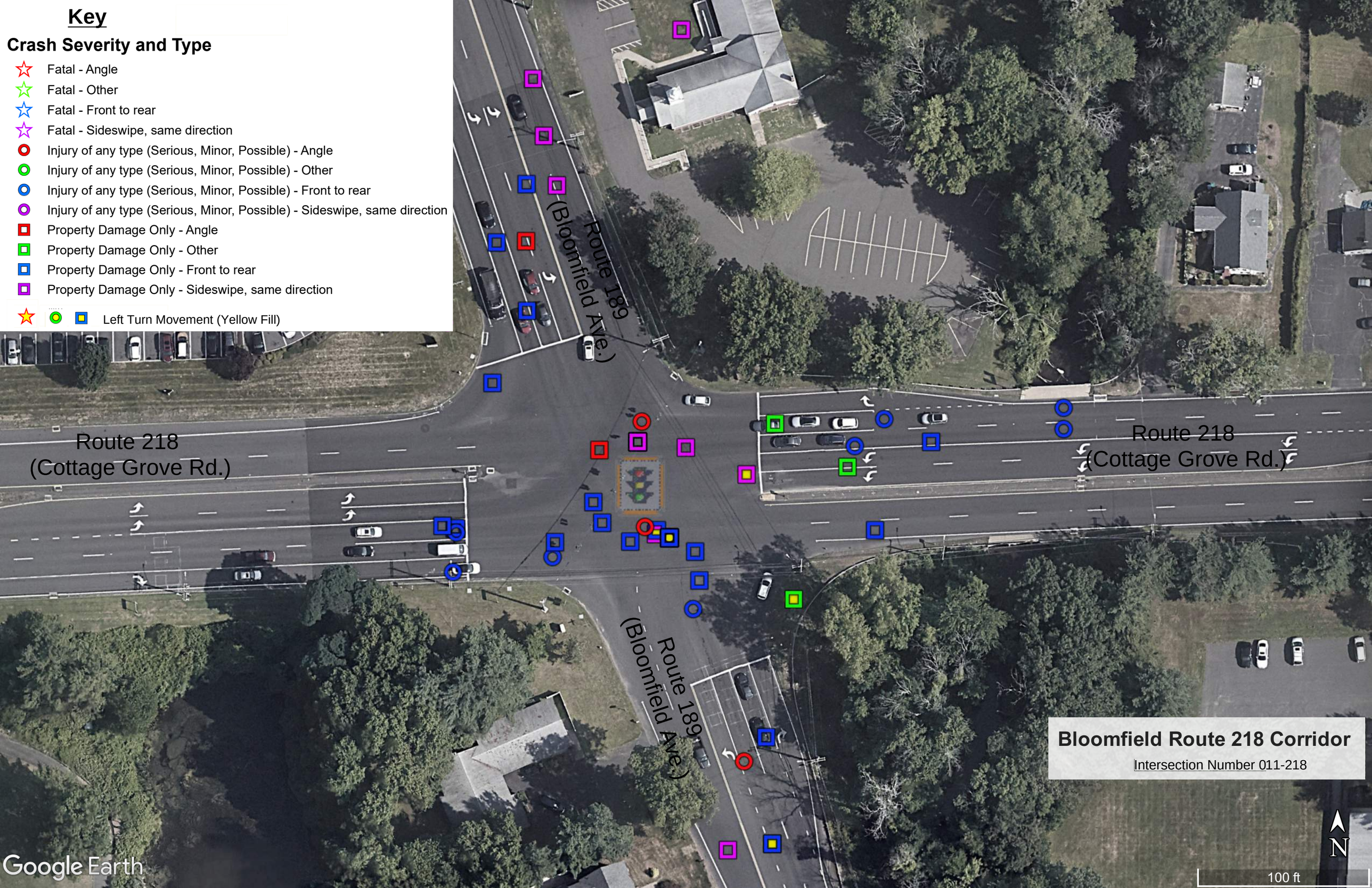


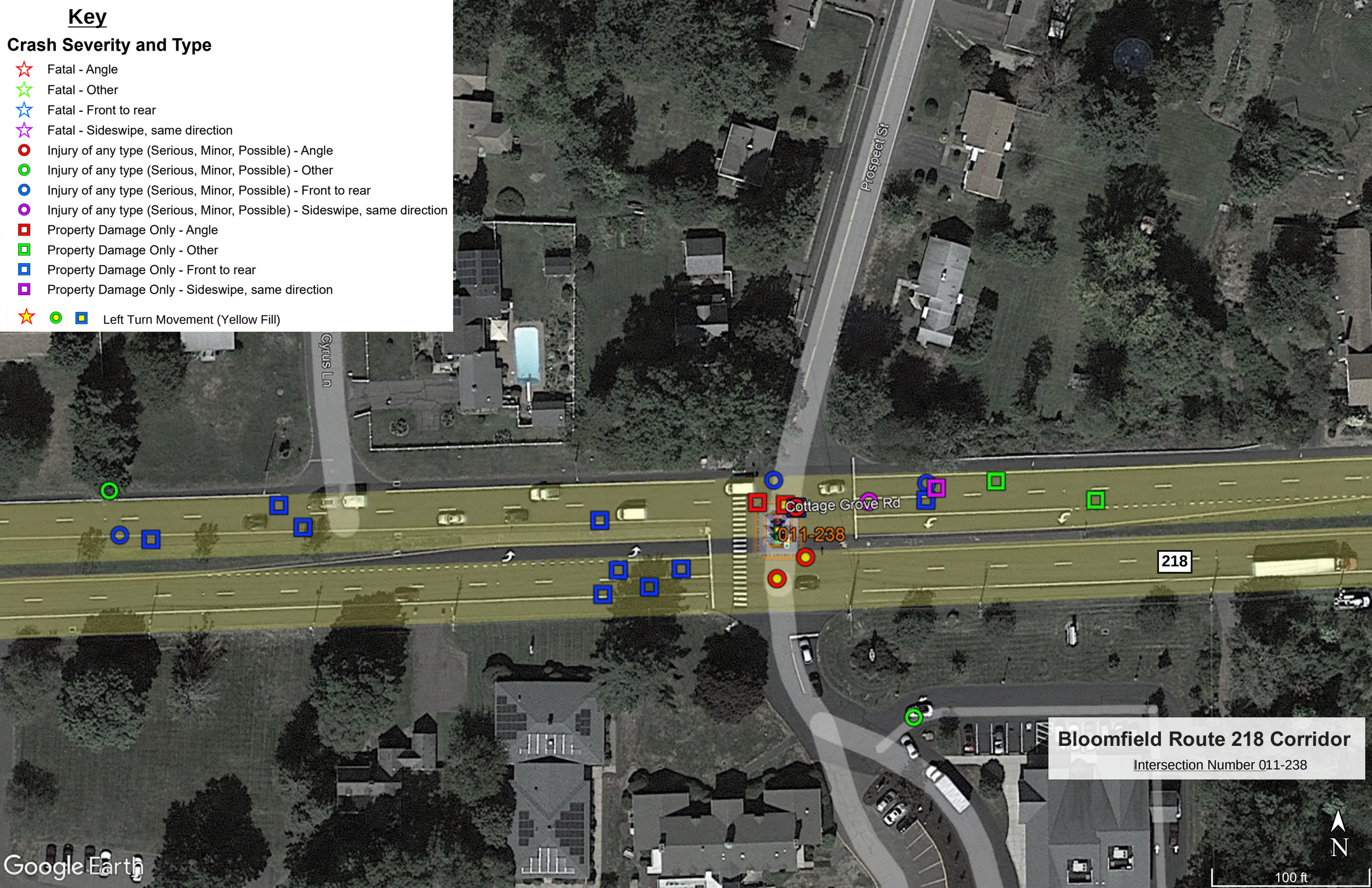
Berlin Route 372 Corridor

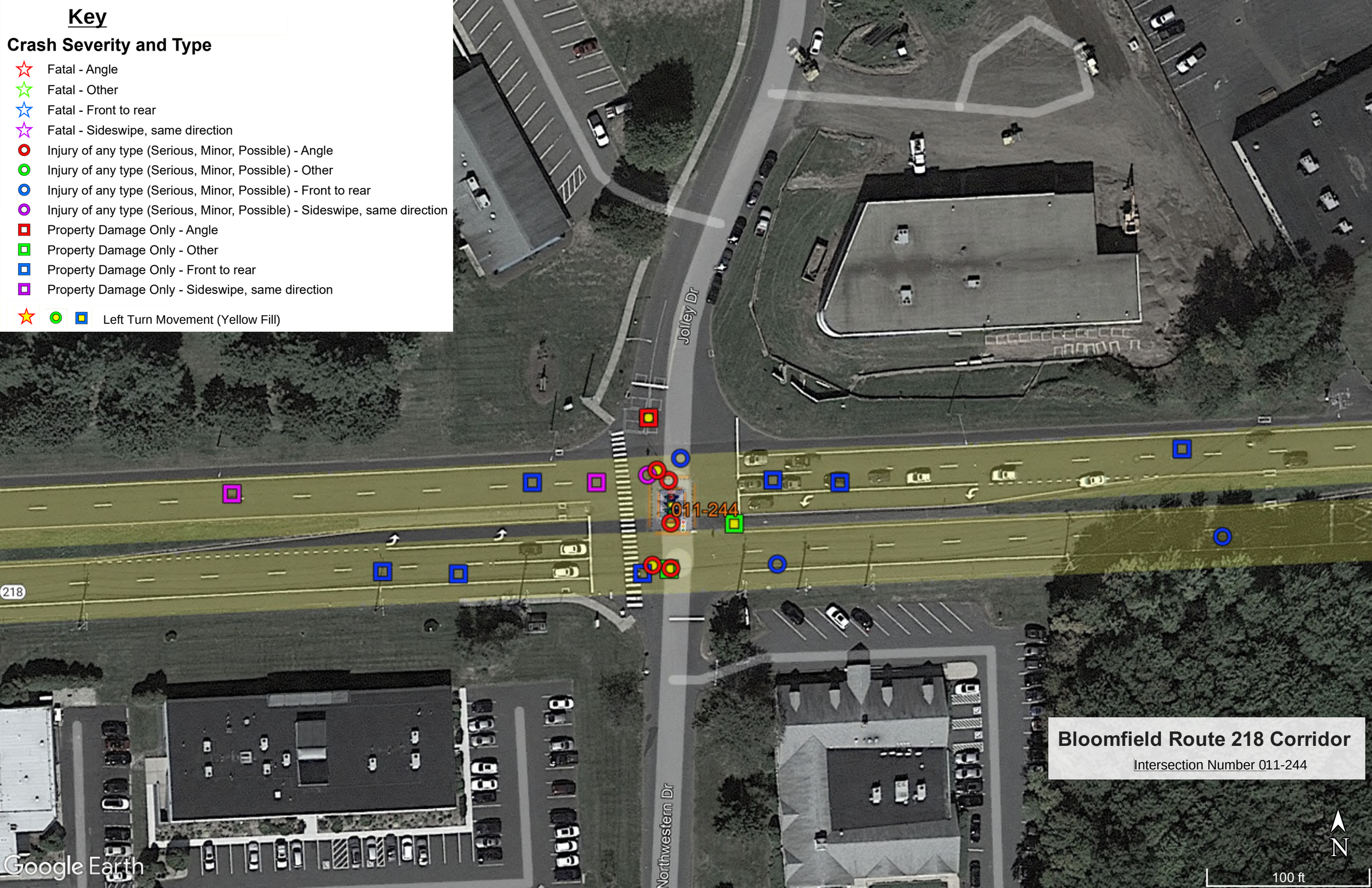
Intersection Number 007-240

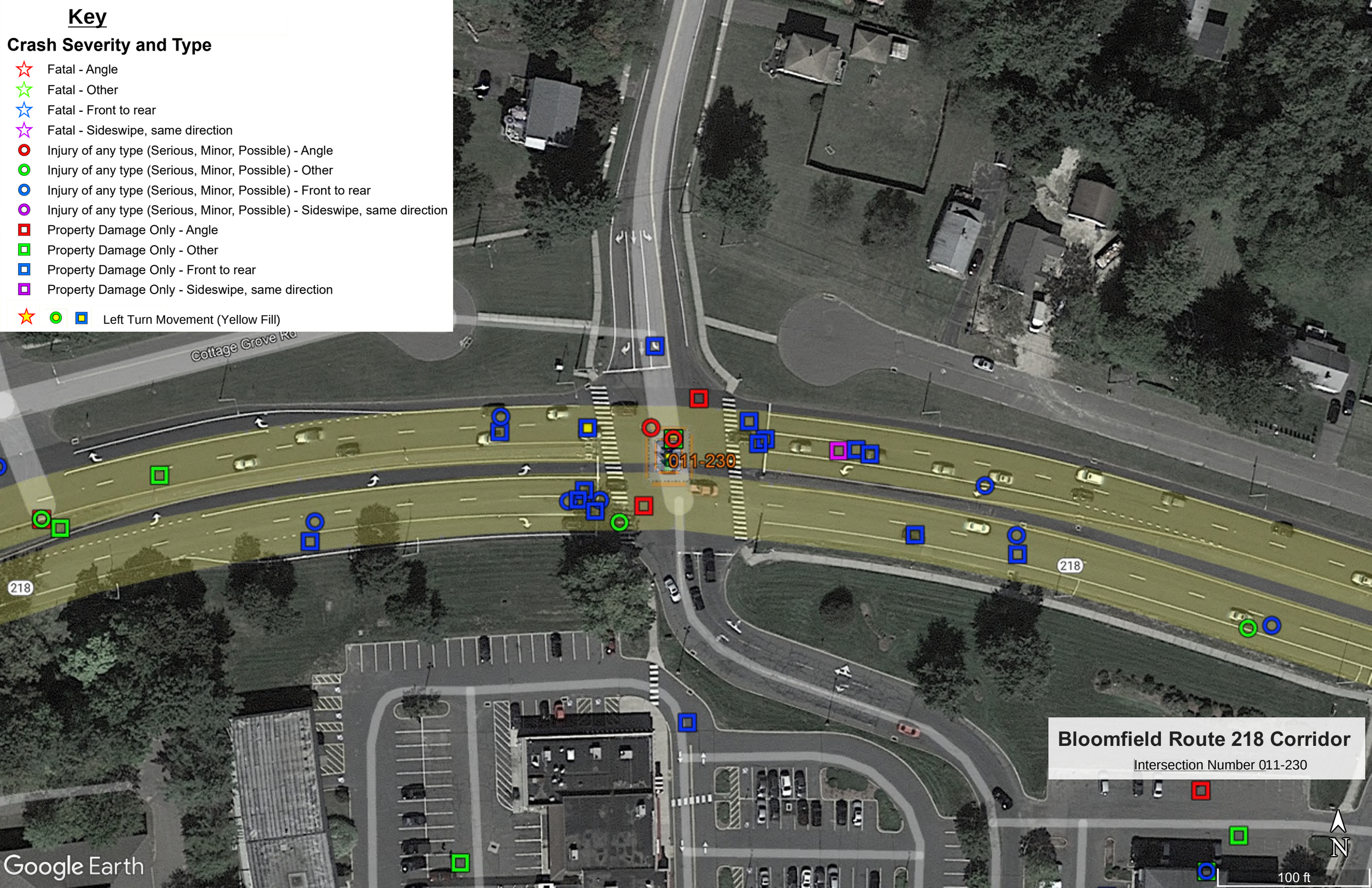

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Webster Square Rd
Seymour Rd
007-226
372
Berlin Route 372 Corridor
Intersection Number 007-226
N
100 ft
Google Earth

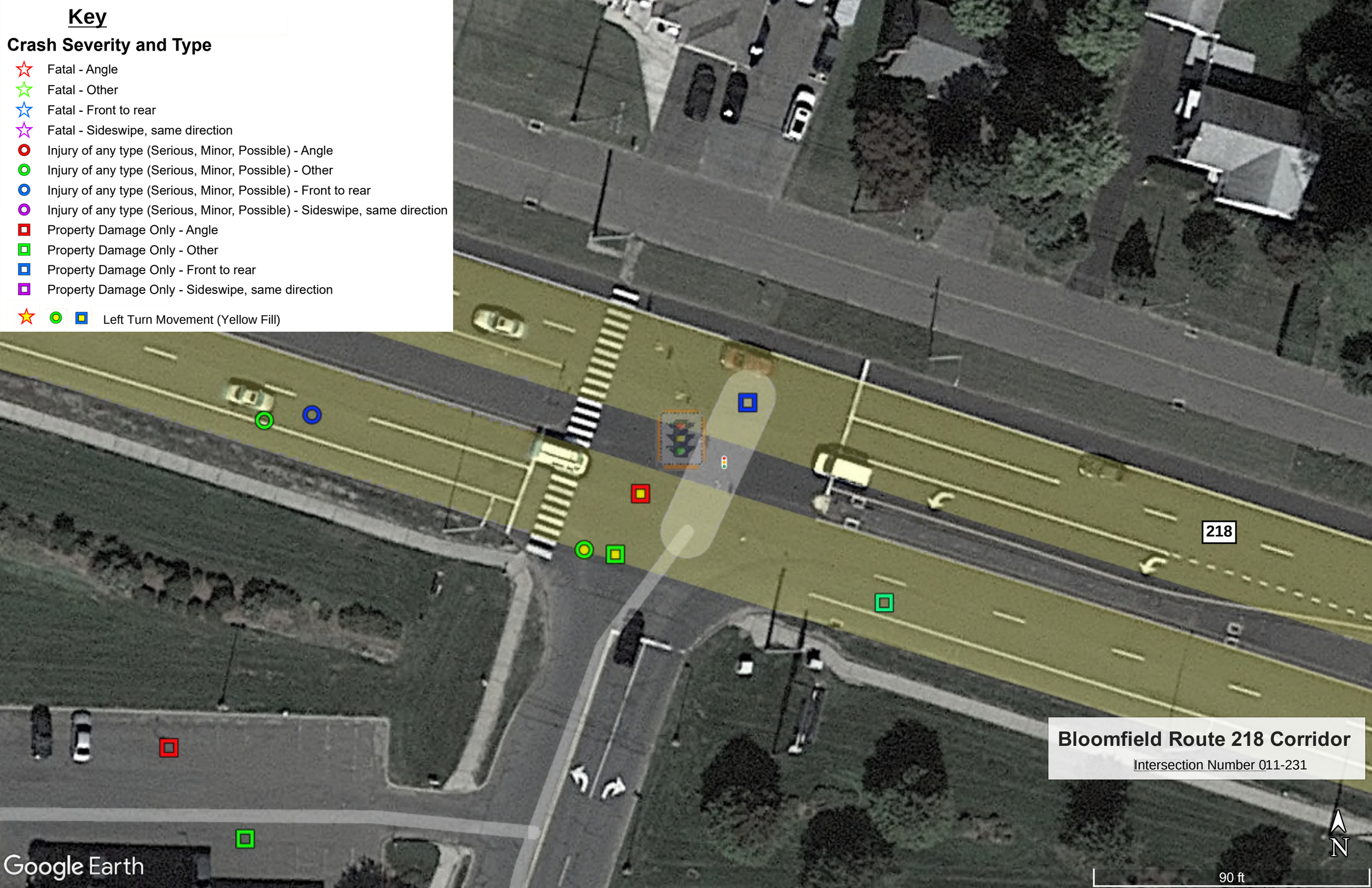

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Bay Hill Drive
Route 218
Cigna Way
Bloomfield Route 218 Corridor
Intersection Number 011-224
N
100 ft
Google Earth

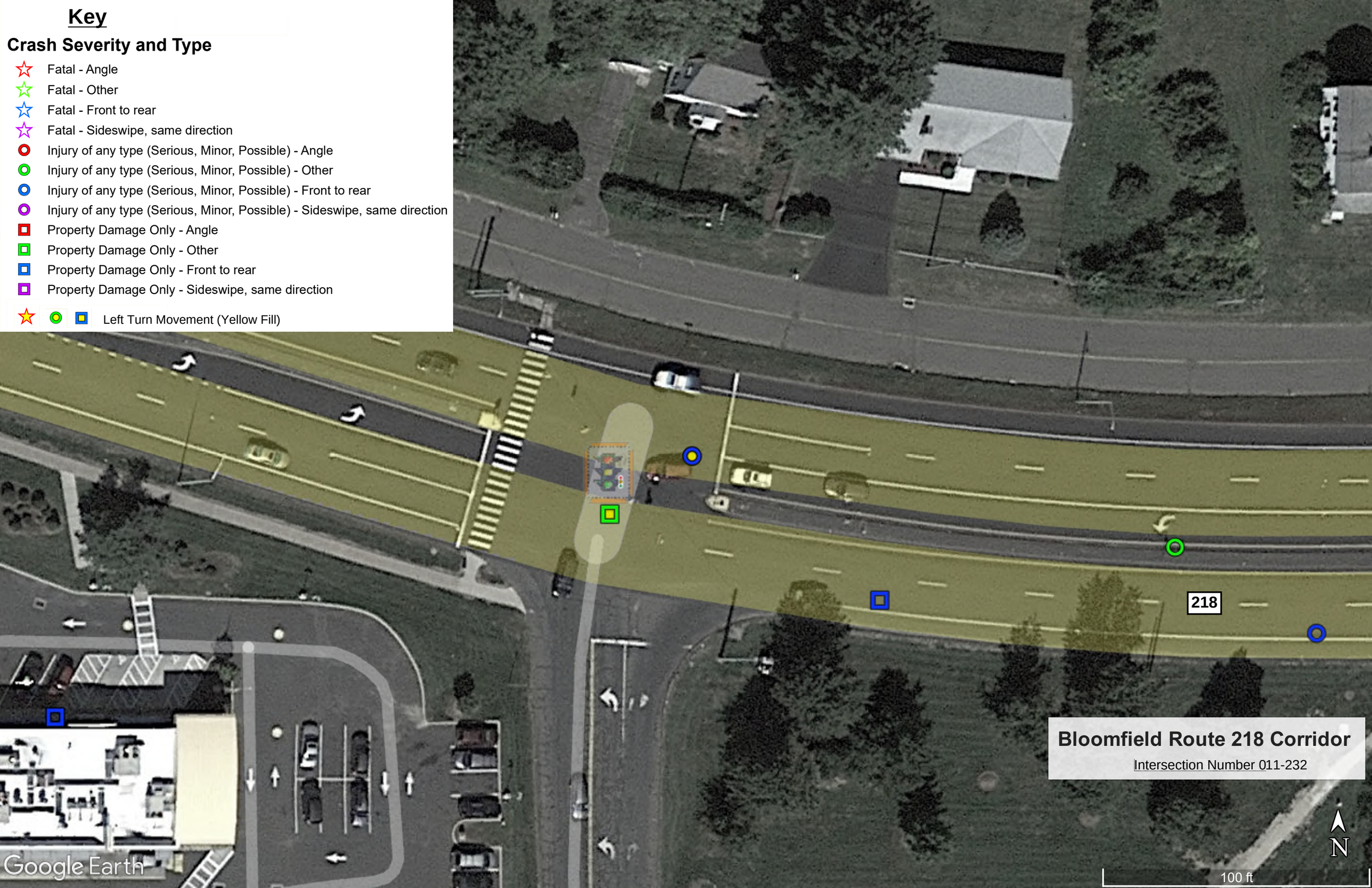

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Route 189
(Bloomfield Ave.)
Route 218
(Cottage Grove Rd.)
Route 218
(Cottage Grove Rd.)
Route 189
(Bloomfield Ave.)
Bloomfield Route 218 Corridor
Intersection Number 011-218
N
100 ft
Google Earth

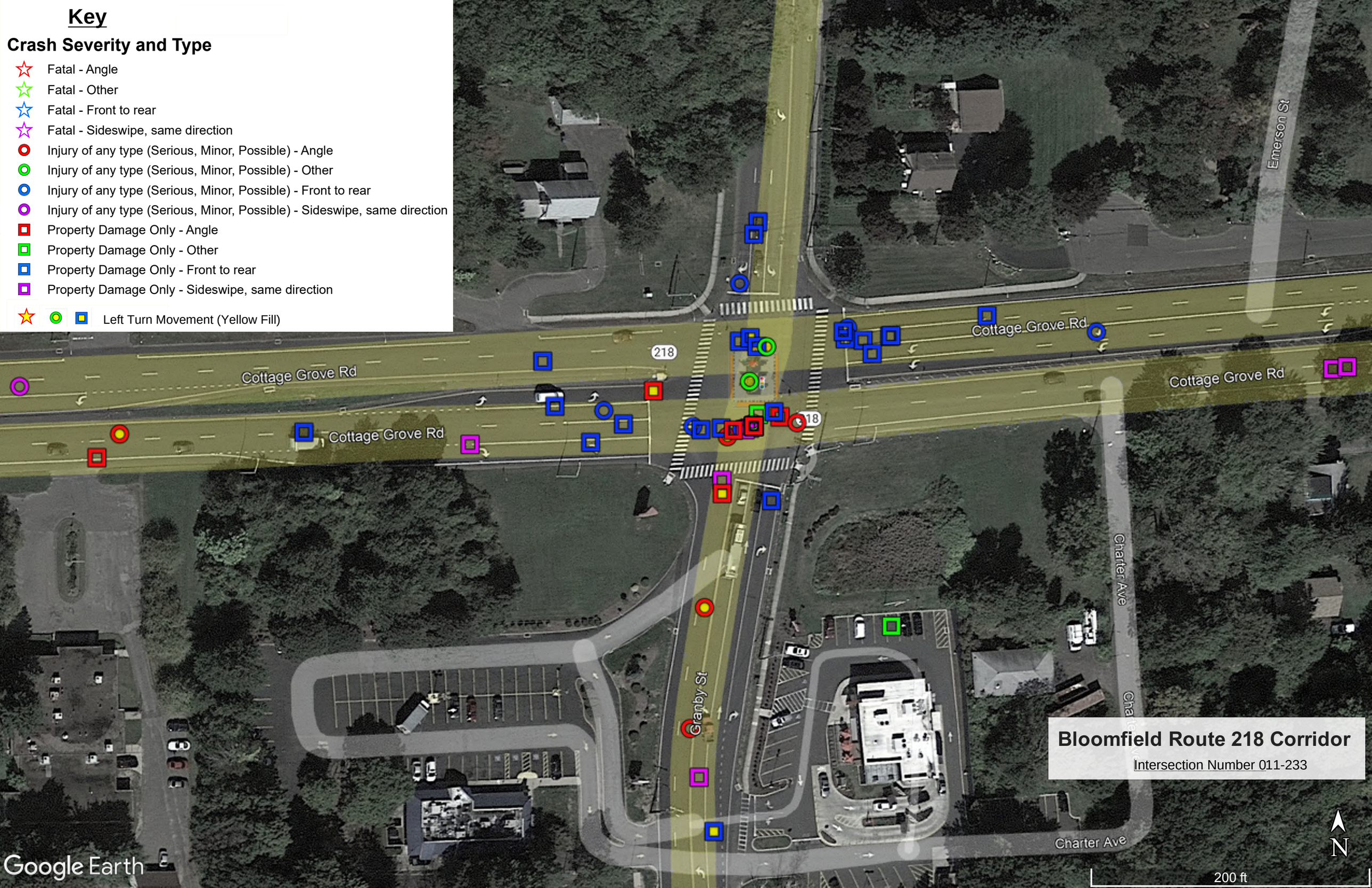

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Prospect St
Cyrus Ln
Cottage Grove Rd
011-238
218
Bloomfield Route 218 Corridor
Intersection Number 011-238
N
100 ft
Google Earth

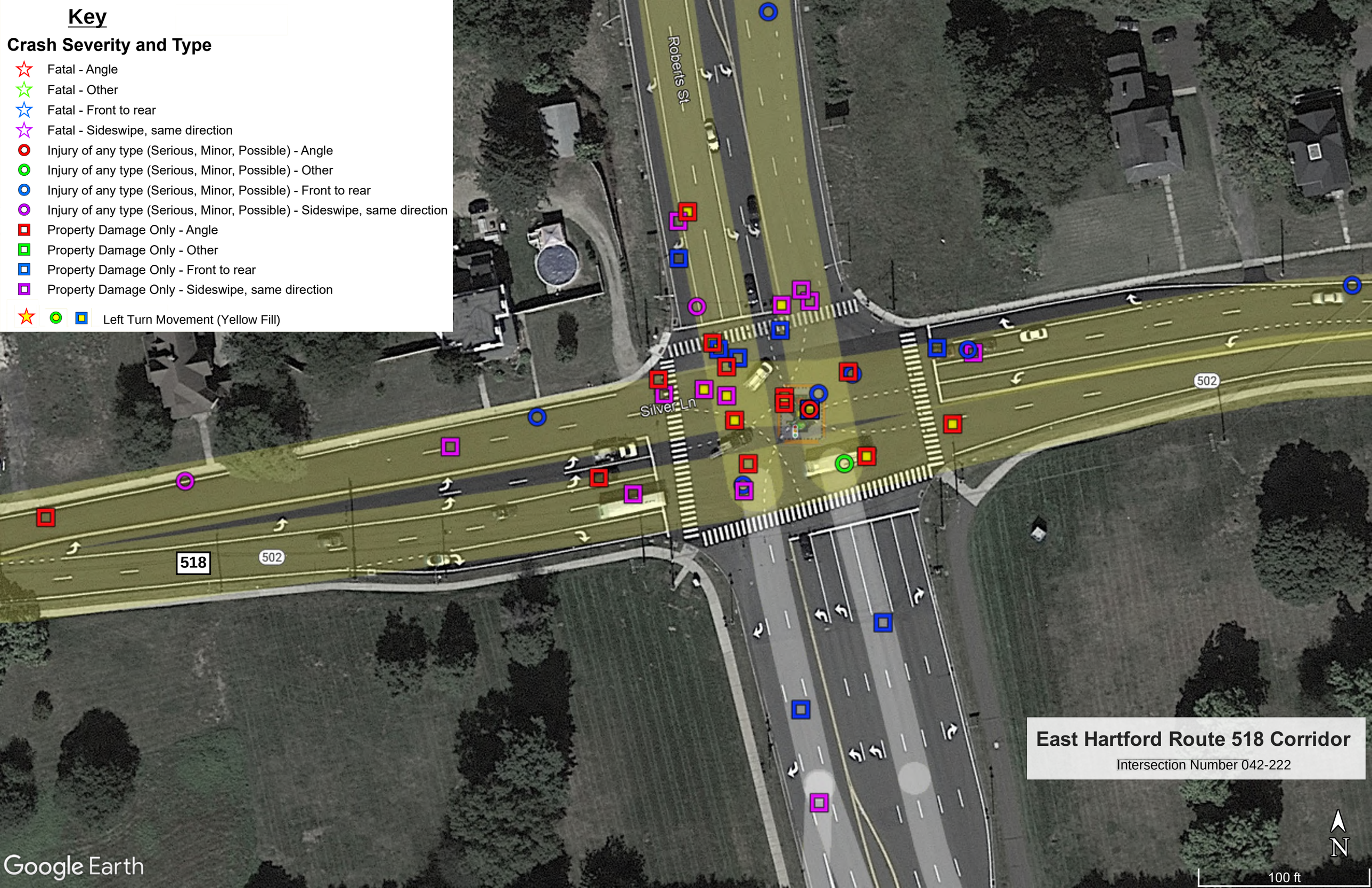

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Jolley Dr
011-244
218
Northwestern Dr
Google Earth
Bloomfield Route 218 Corridor
Intersection Number 011-244
N
100 ft


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Cottage Grove Rd
011-230
218
218
Bloomfield Route 218 Corridor
Intersection Number 011-230
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
218
Bloomfield Route 218 Corridor
Intersection Number 011-231
N
90 ft
Google Earth

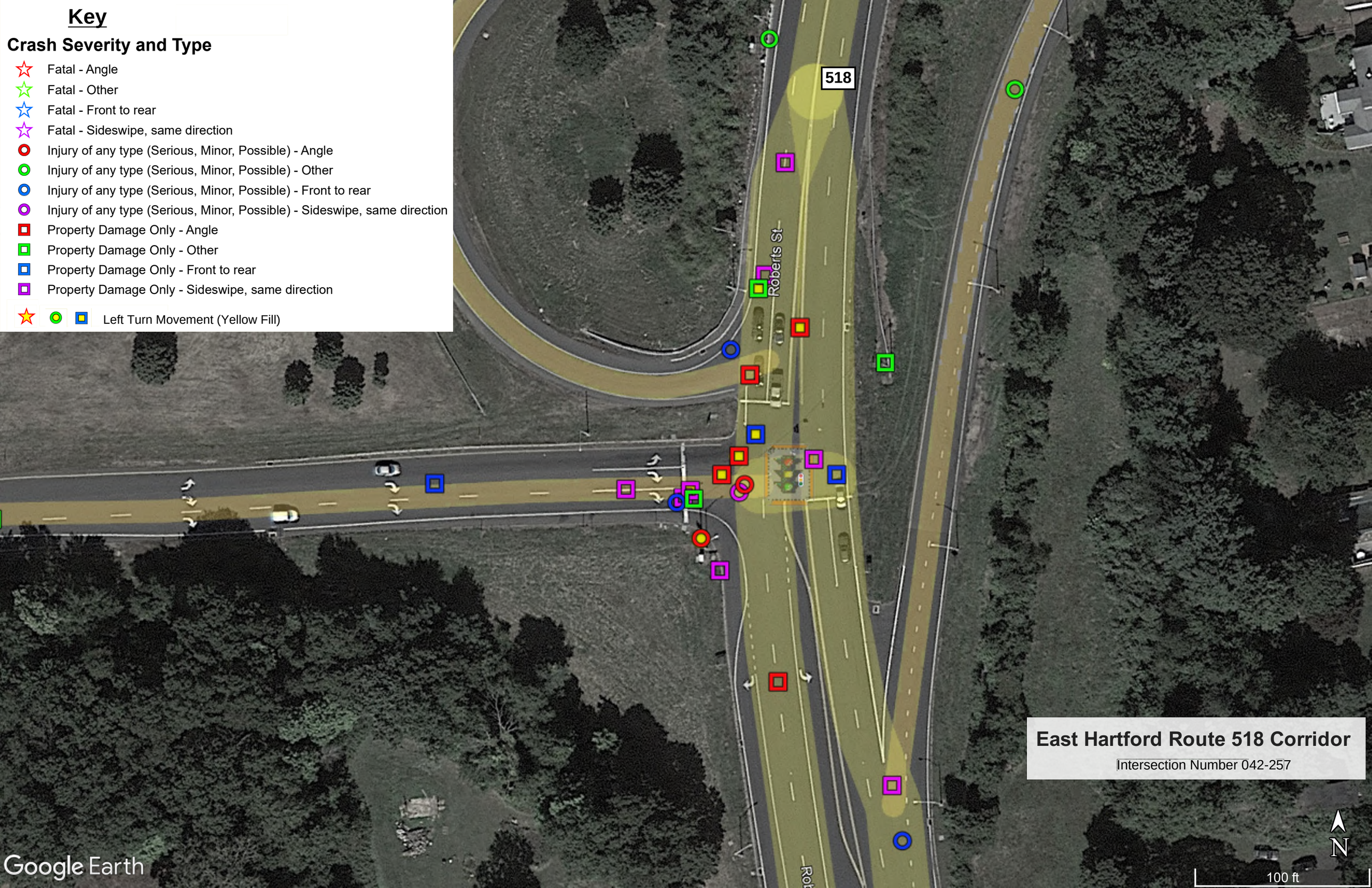

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
218
Bloomfield Route 218 Corridor
Intersection Number 011-232
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Cottage Grove Rd
Cottage Grove Rd
Cottage Grove Rd
Cottage Grove Rd
218
218
Emerson St
Granby St
Charter Ave
Charter Ave
Bloomfield Route 218 Corridor
Intersection Number 011-233
N
200 ft
Google Earth



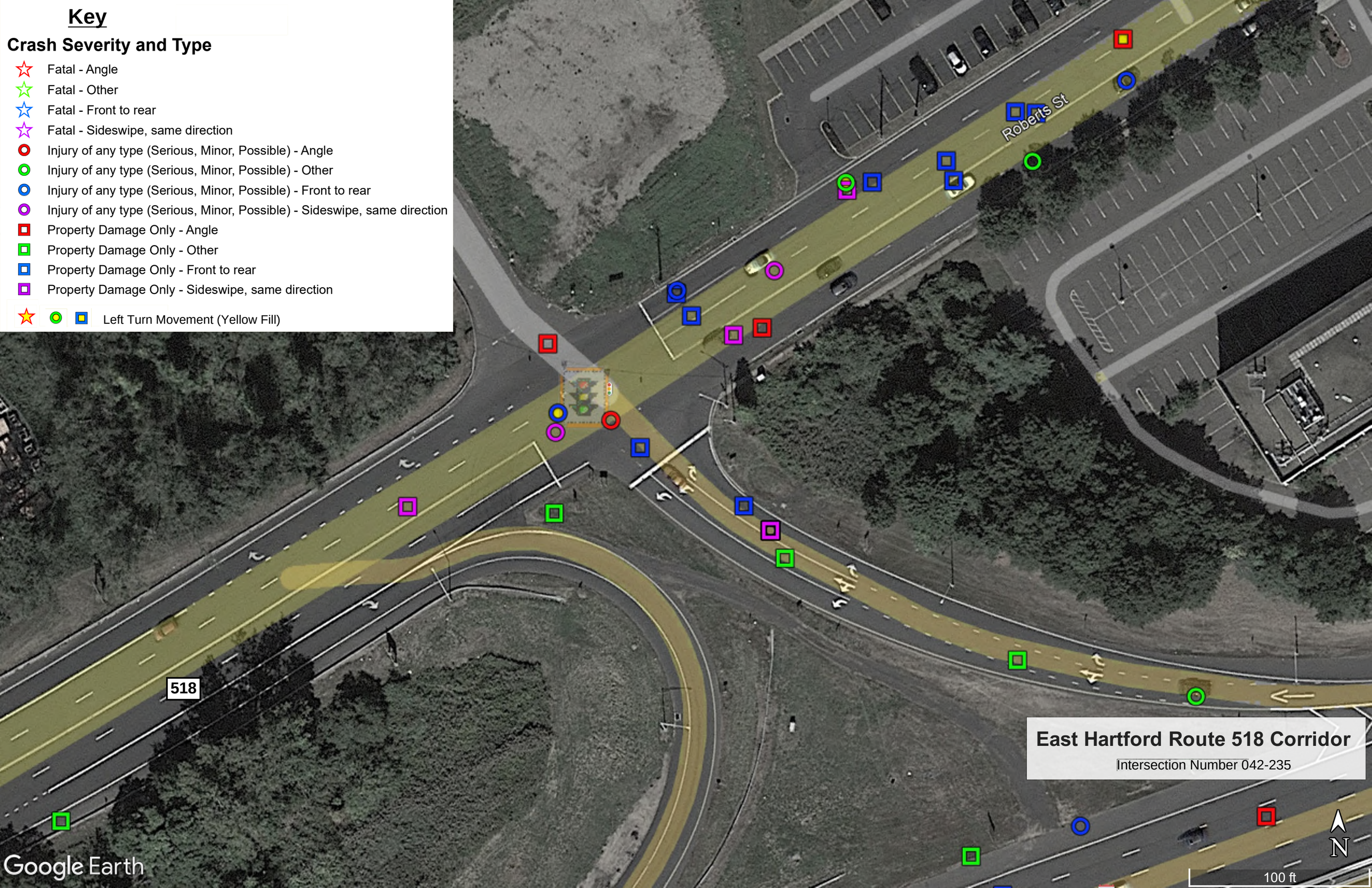
East Hartford Route 518 Corridor

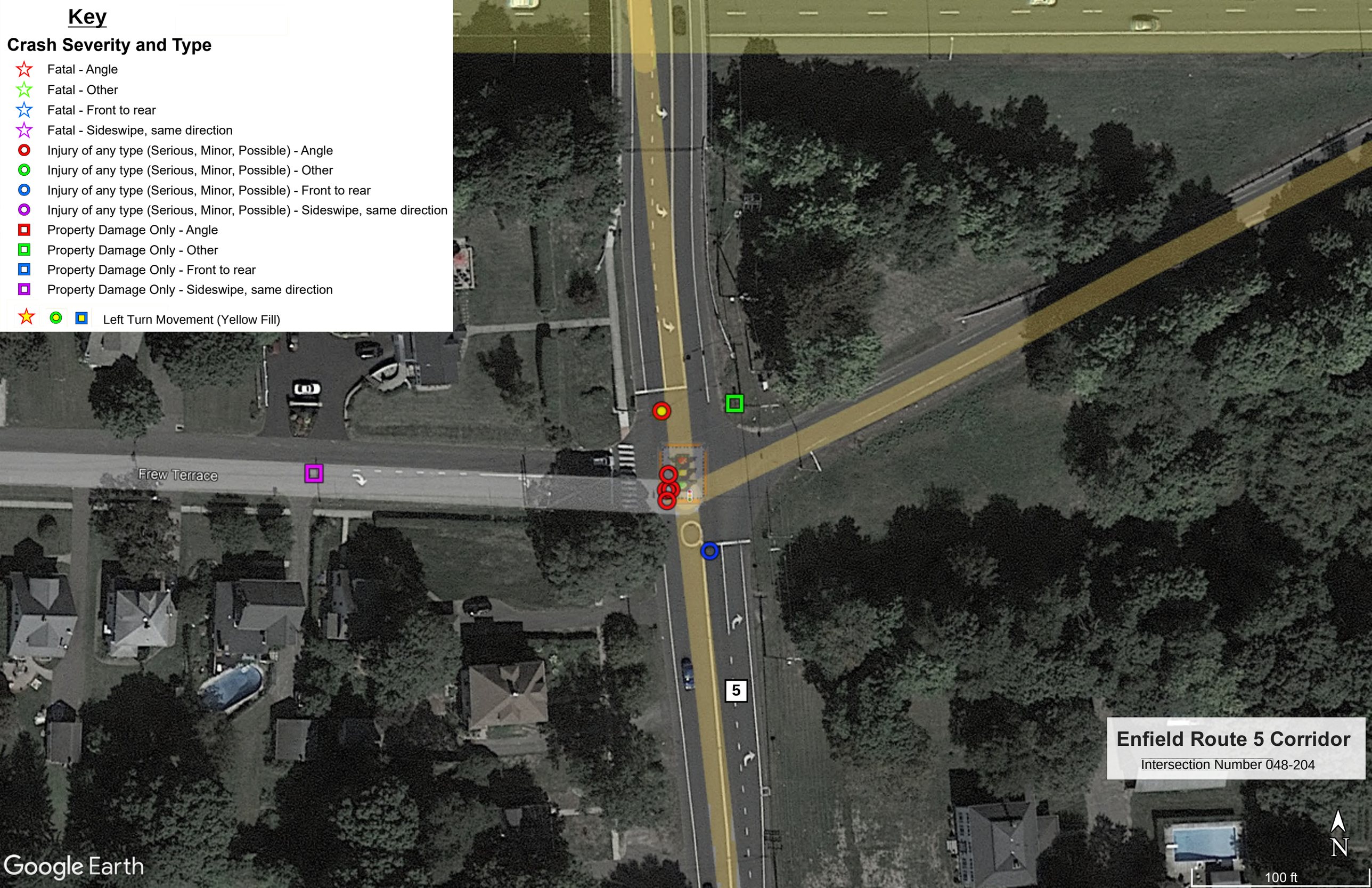
Intersection Number 042-222



East Hartford Route 518 Corridor

Intersection Number 042-257

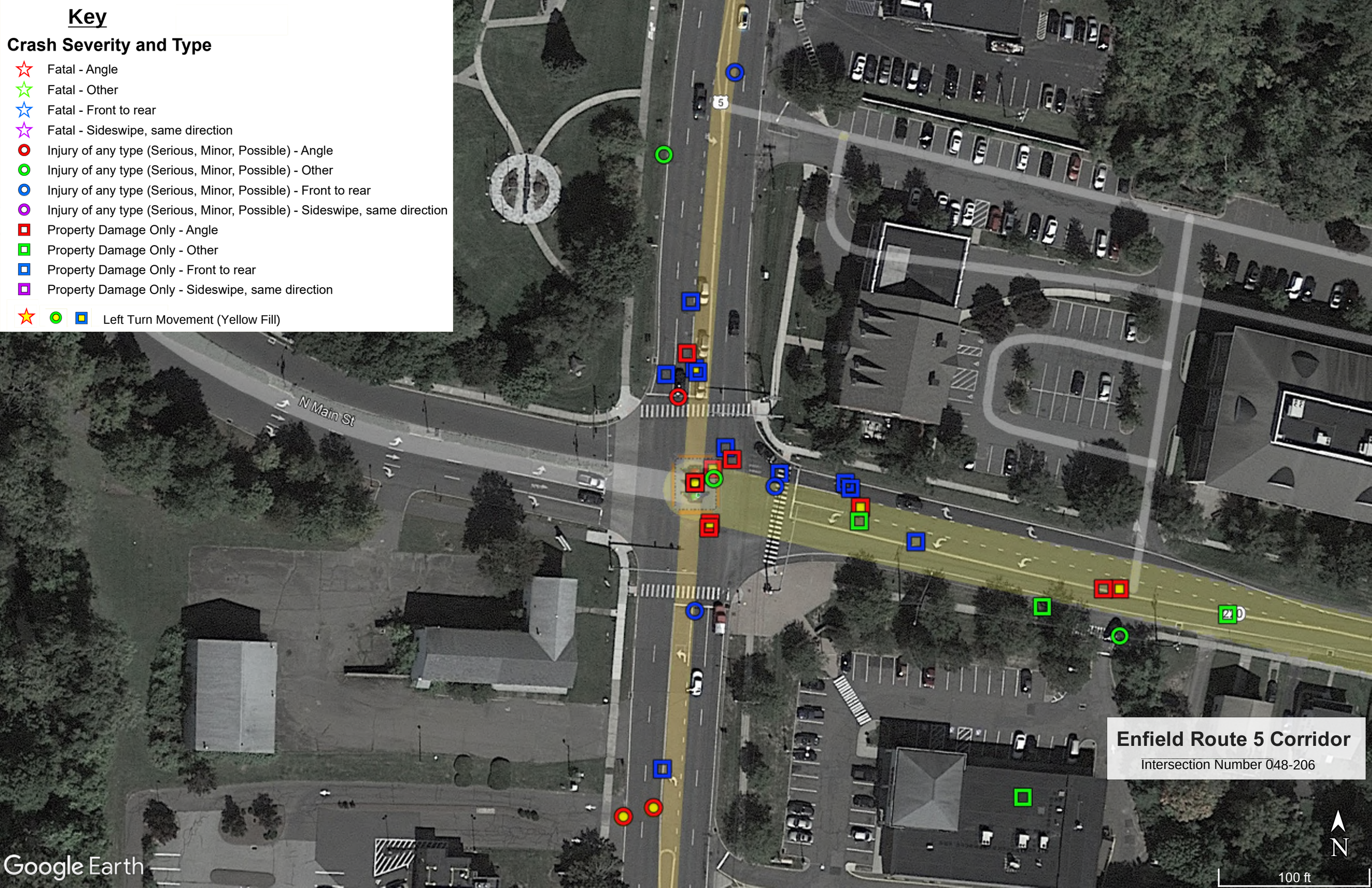

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Roberts St
518
East Hartford Route 518 Corridor
Intersection Number 042-235
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Frew Terrace
5
Enfield Route 5 Corridor
Intersection Number 048-204
N
100 ft
Google Earth

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Claremont Ave
Claremont Ave
5
Franklin St
Enfield Route 5 Corridor
Intersection Number 048-203
N
200 ft
Google Earth

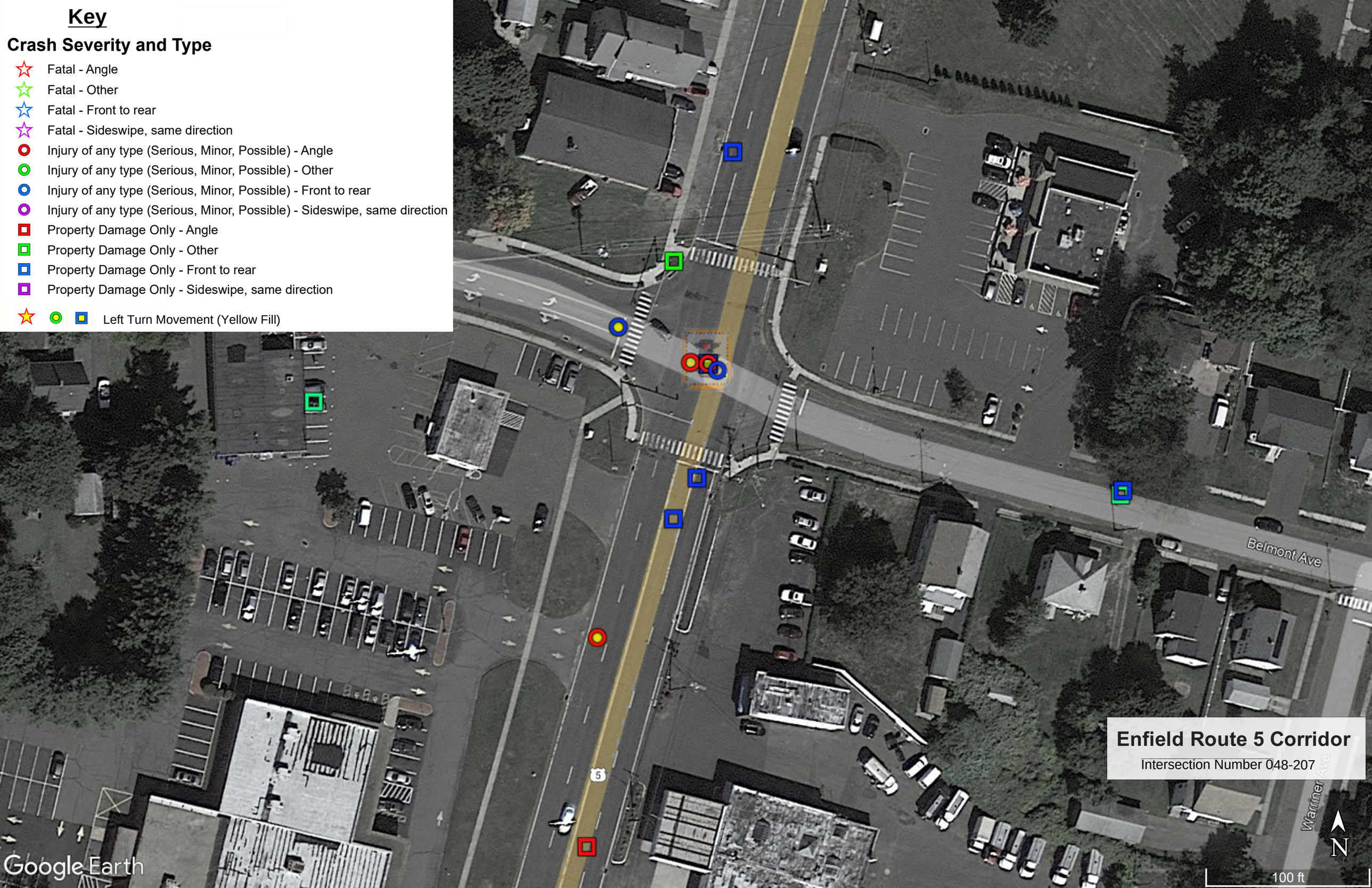
Enfield Route 5 Corridor

Intersection Number 048-205



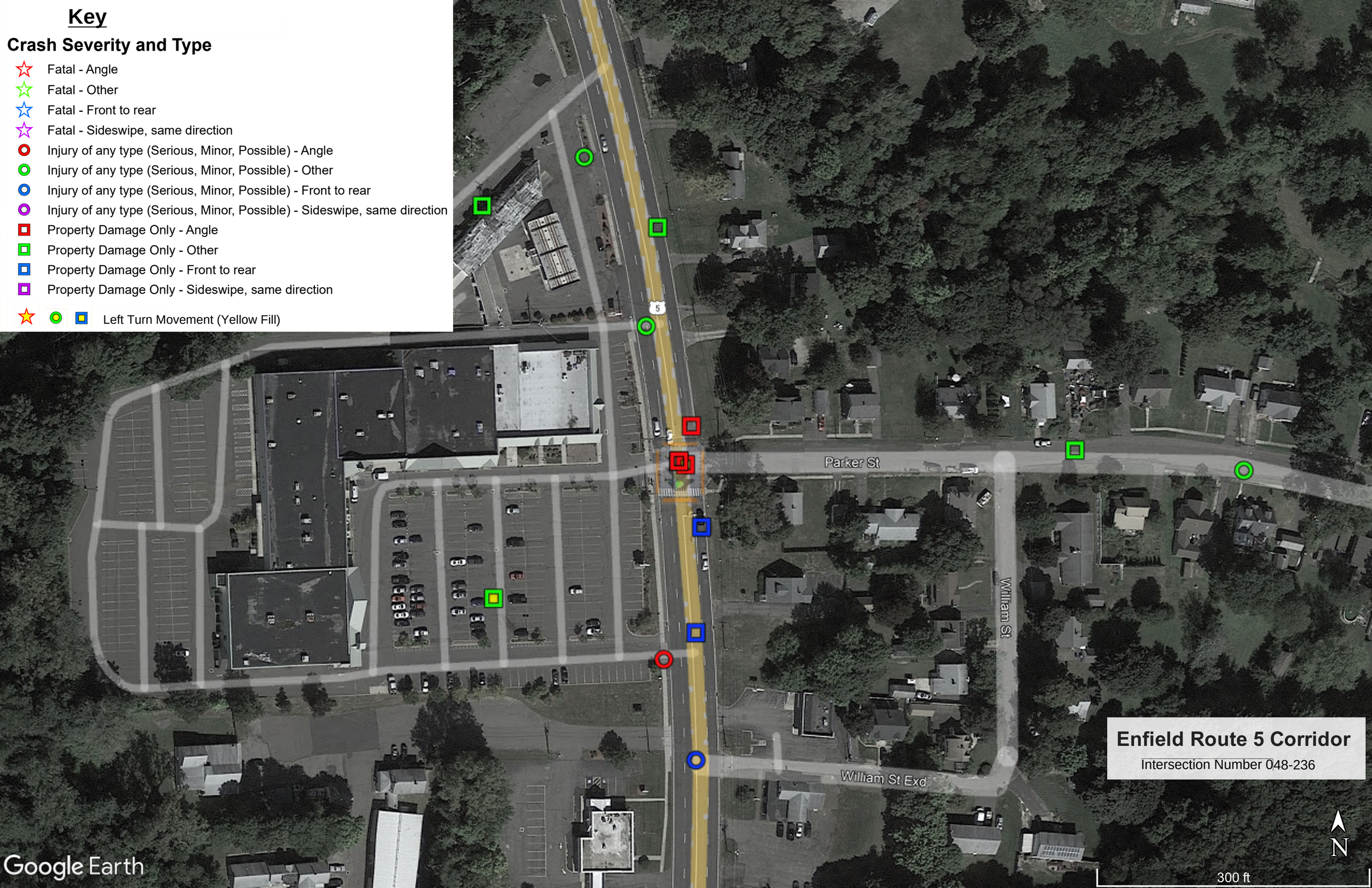
Enfield Route 5 Corridor

Intersection Number 048-206



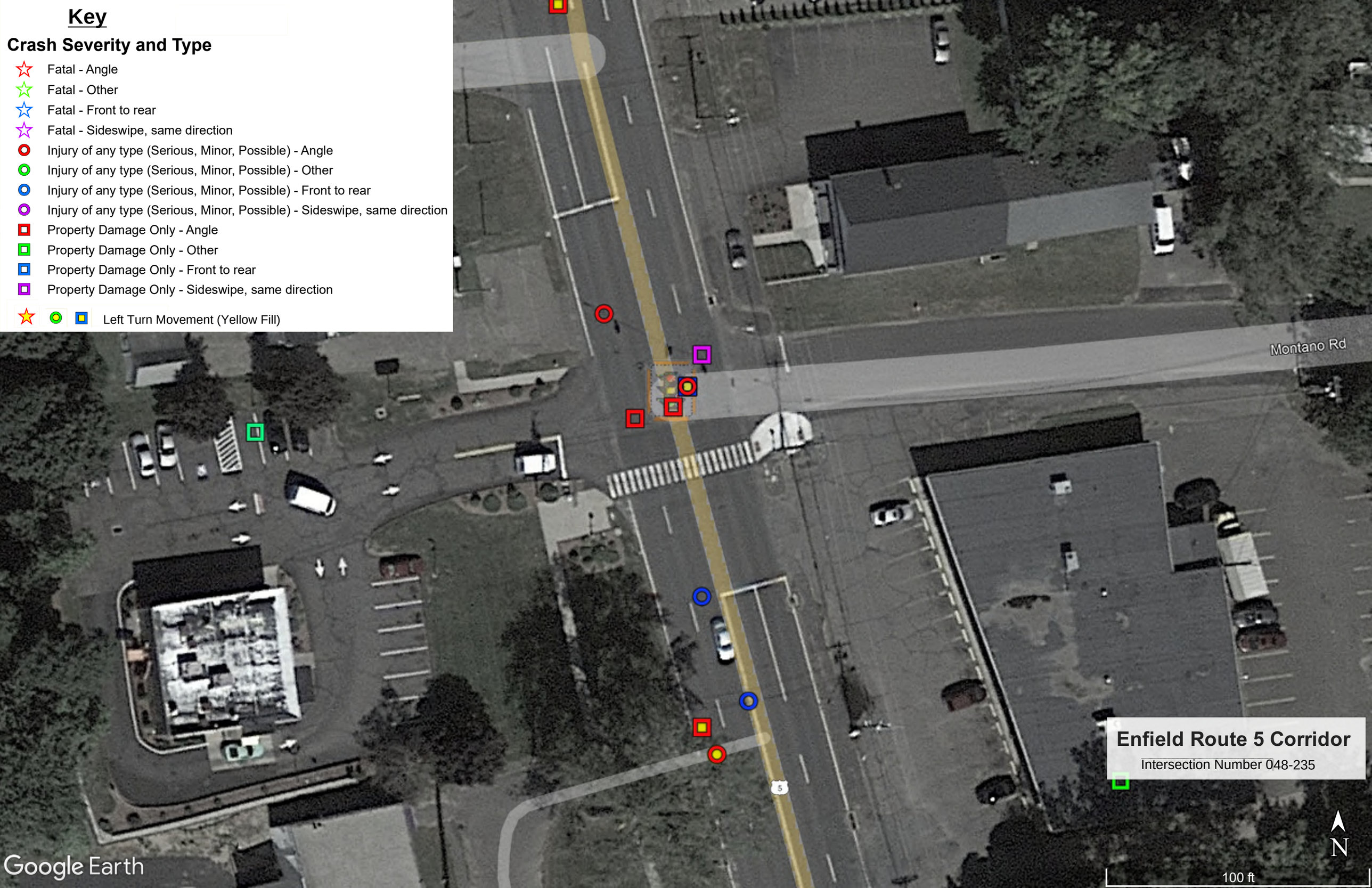
Enfield Route 5 Corridor

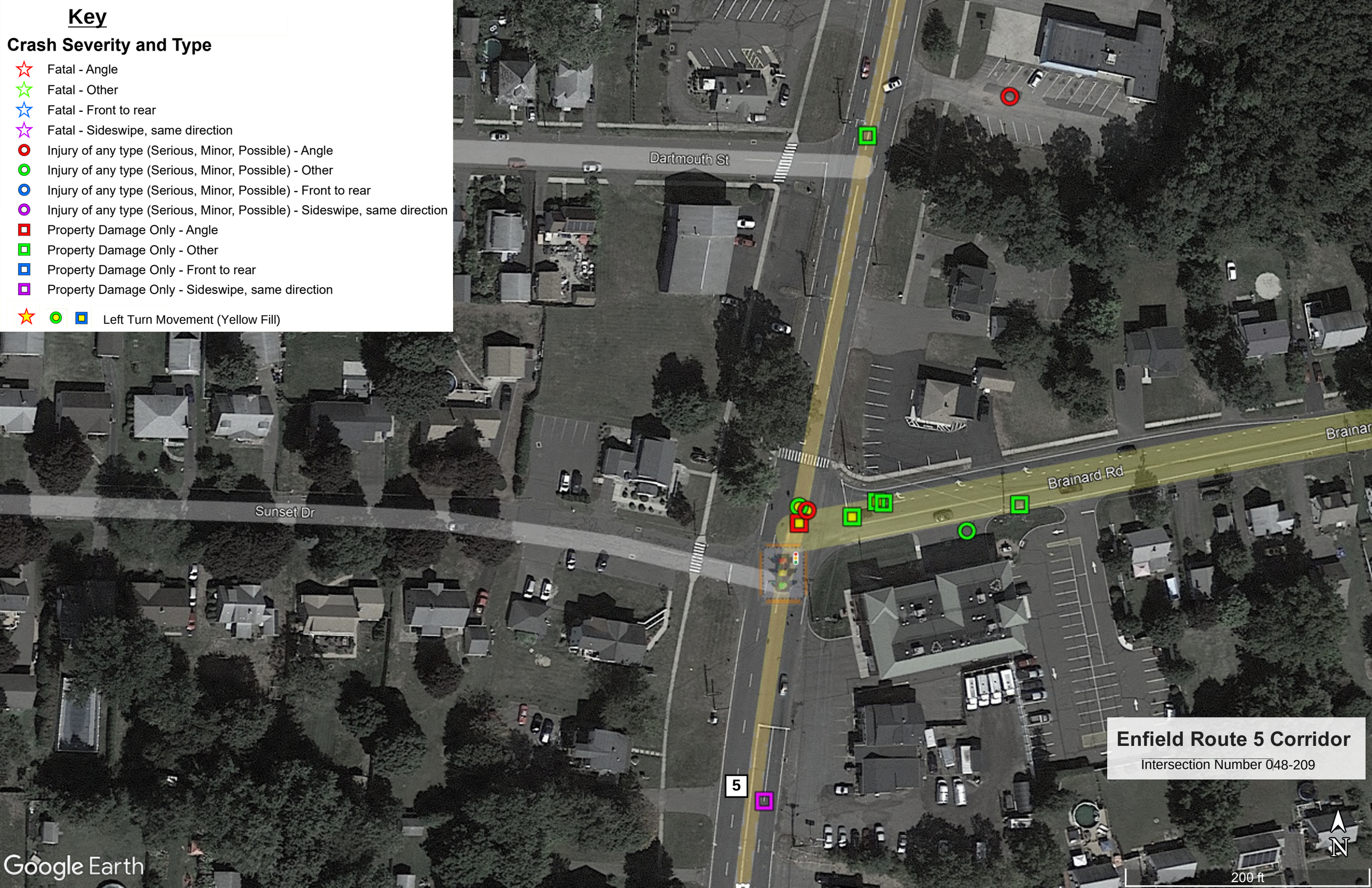
Intersection Number 048-207

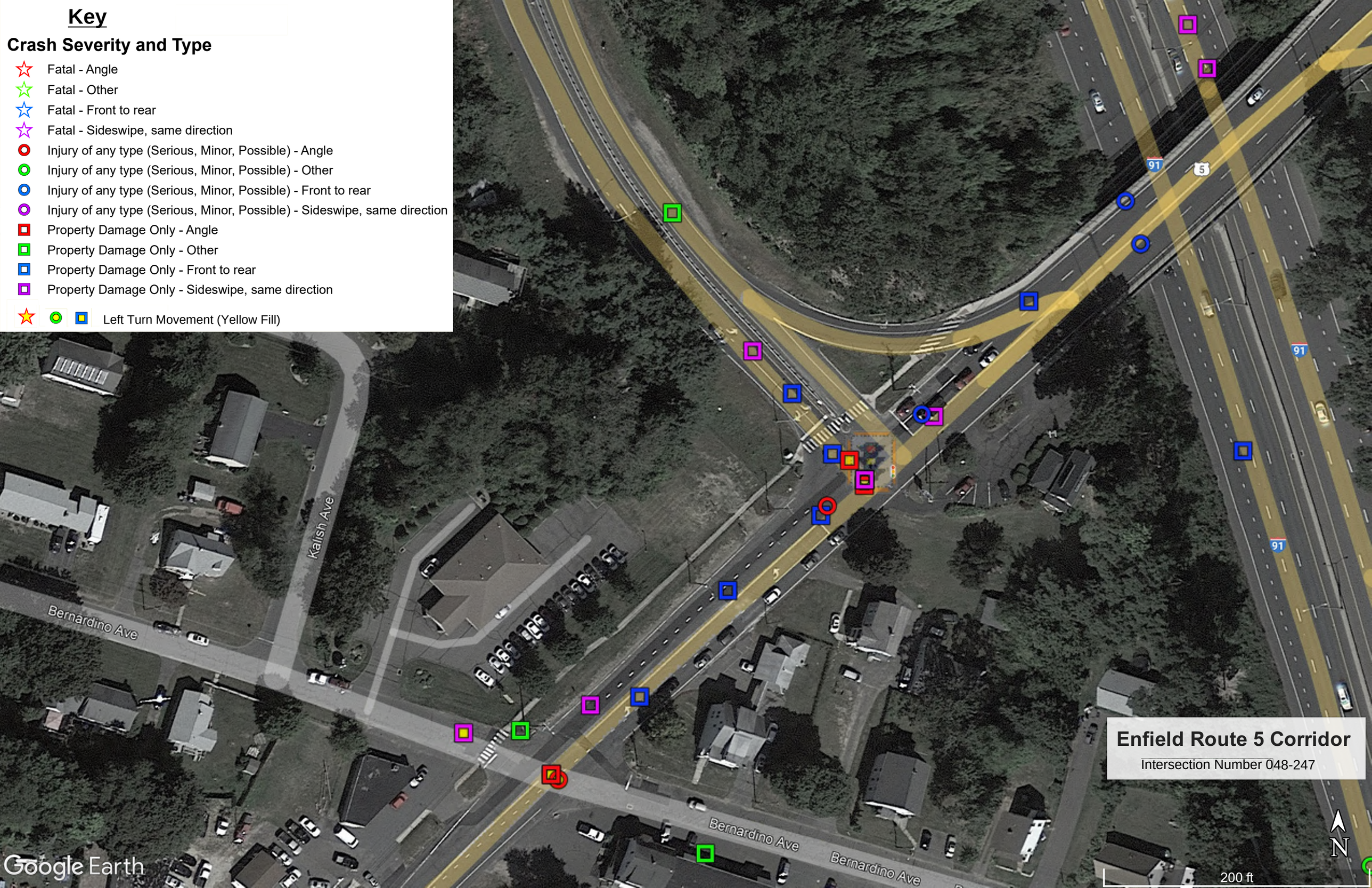


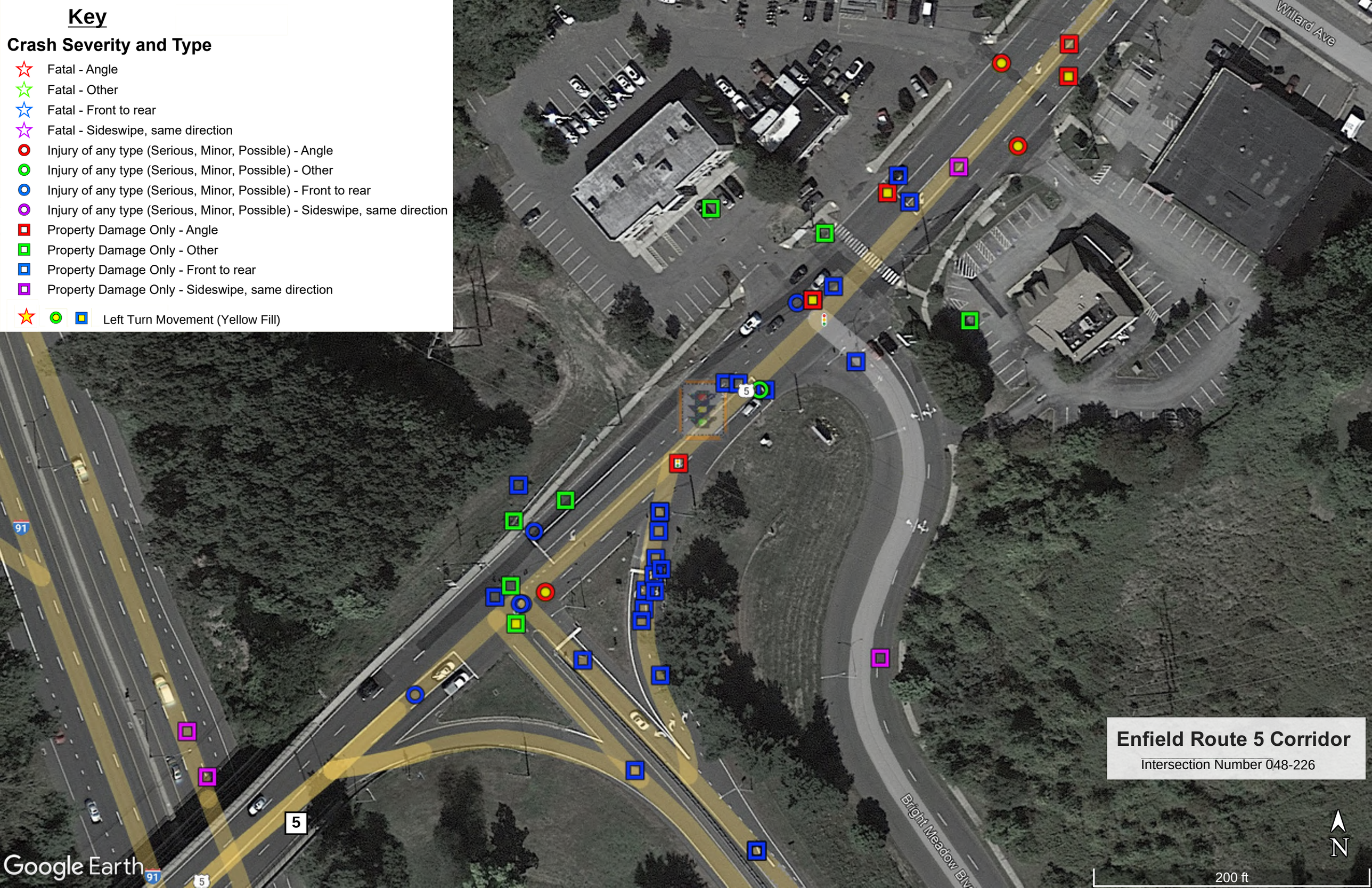
Enfield Route 5 Corridor

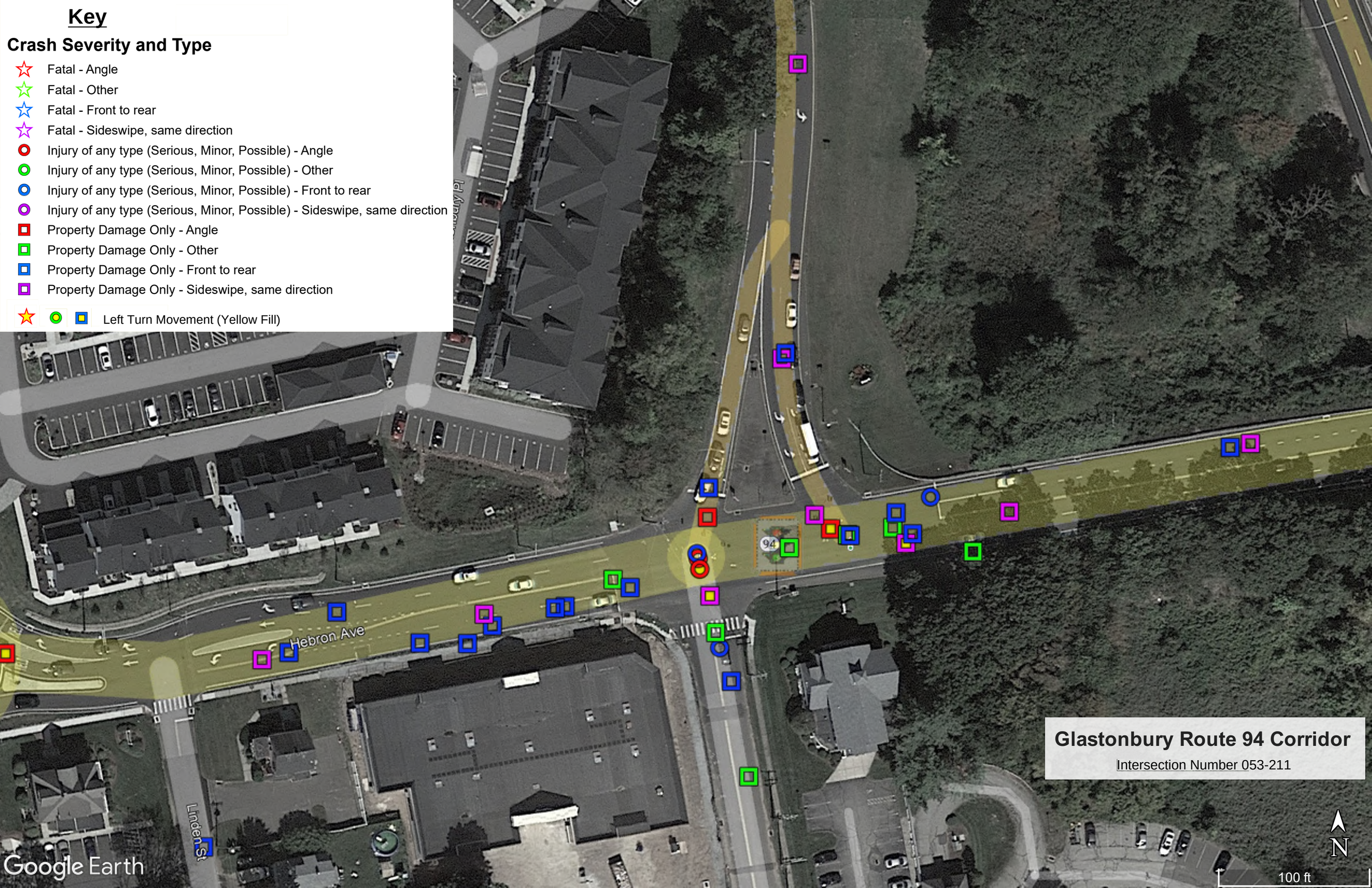
Intersection Number 048-236


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Montano Rd
Enfield Route 5 Corridor
Intersection Number 048-235
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Dartmouth St
Sunset Dr
Brainard Rd
5
Enfield Route 5 Corridor
Intersection Number 048-209
N
200 ft
Google Earth

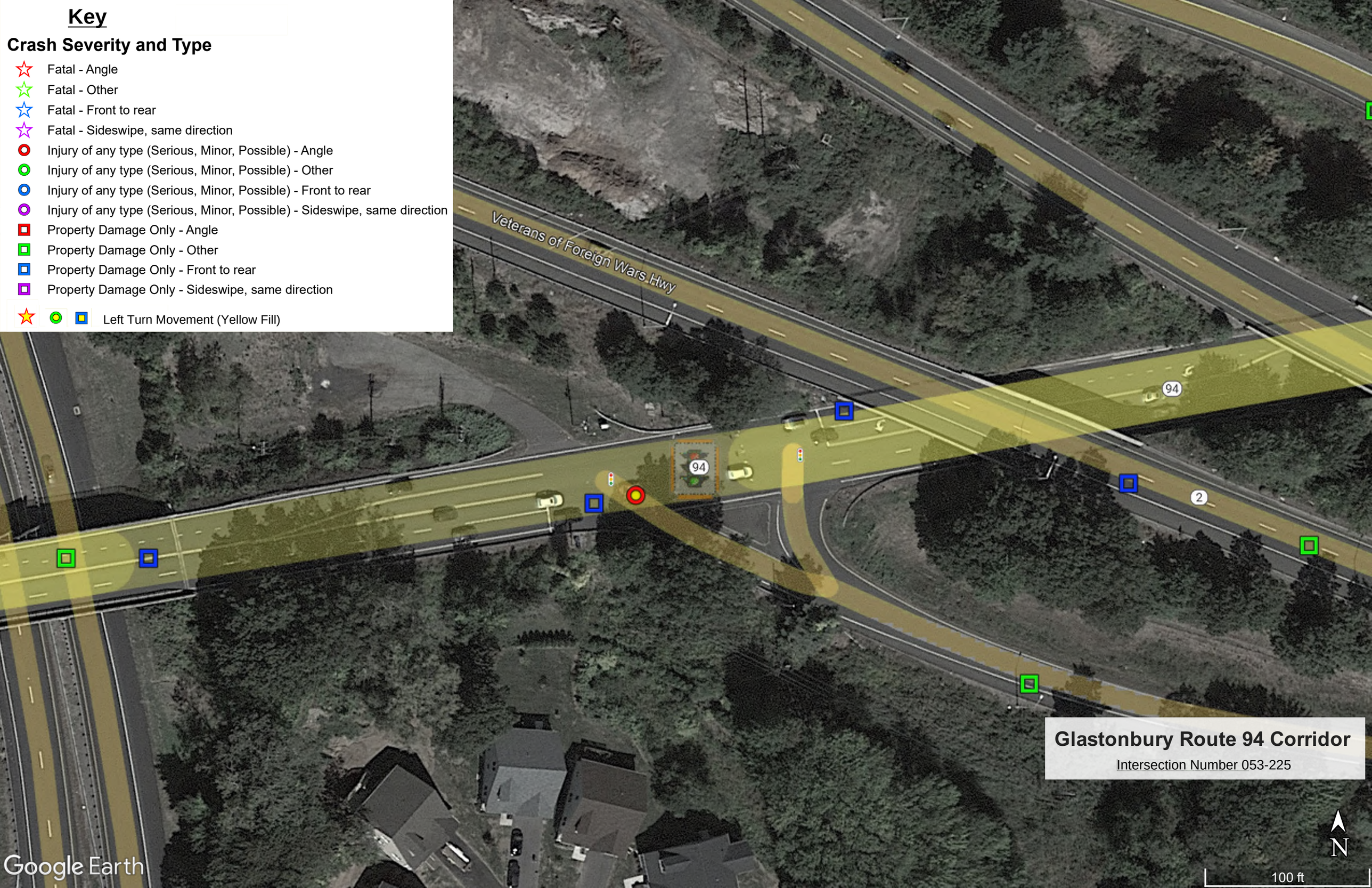

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Enfield Route 5 Corridor
Intersection Number 048-247
Kalish Ave
Bernardino Ave
Bernardino Ave
Bernardino Ave
91
5
91
91
N
200 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Willard Ave
Bright Meadow Blvd
5
91
Google Earth
Enfield Route 5 Corridor
Intersection Number 048-226
N
200 ft



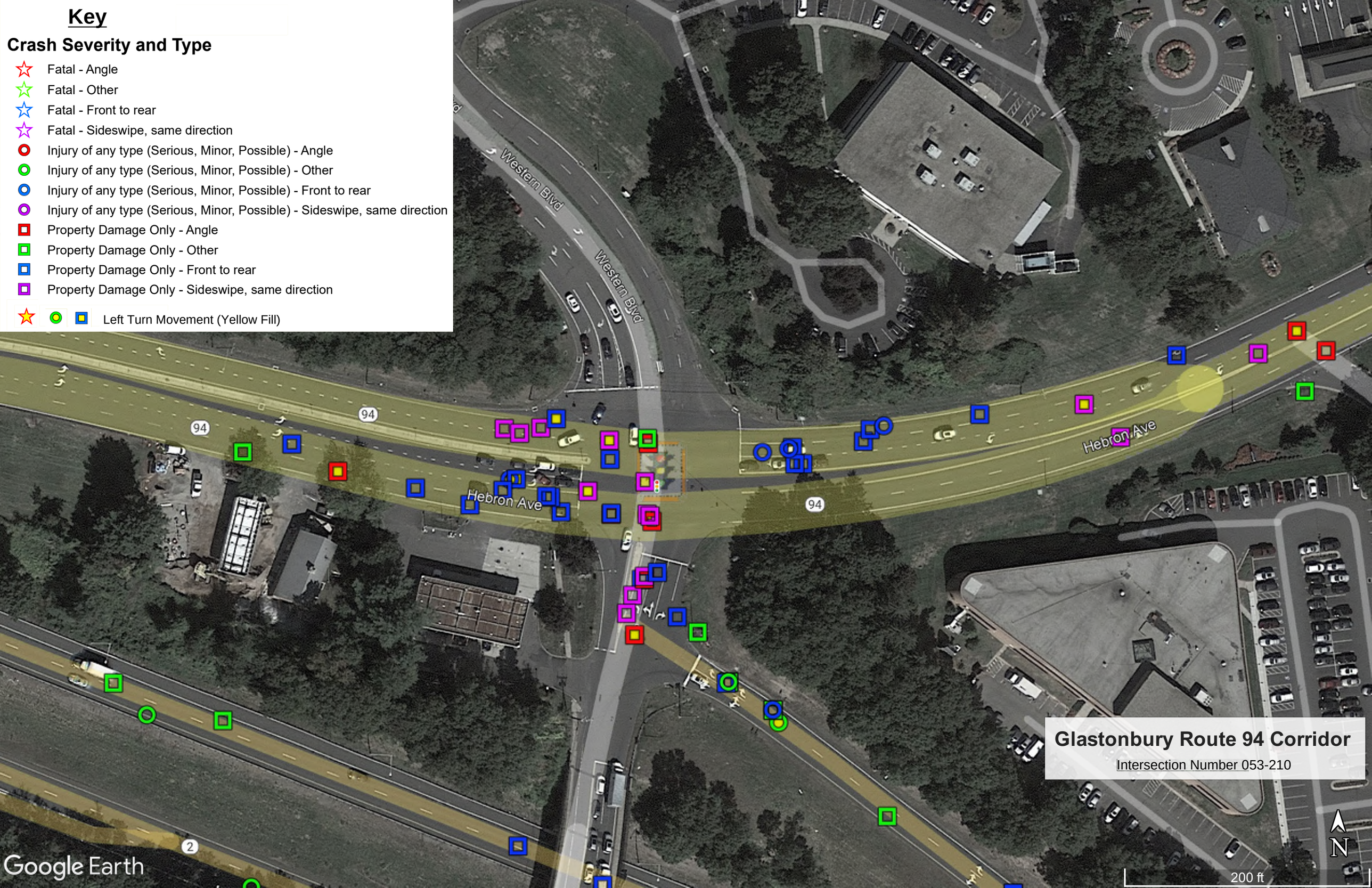
Glastonbury Route 94 Corridor

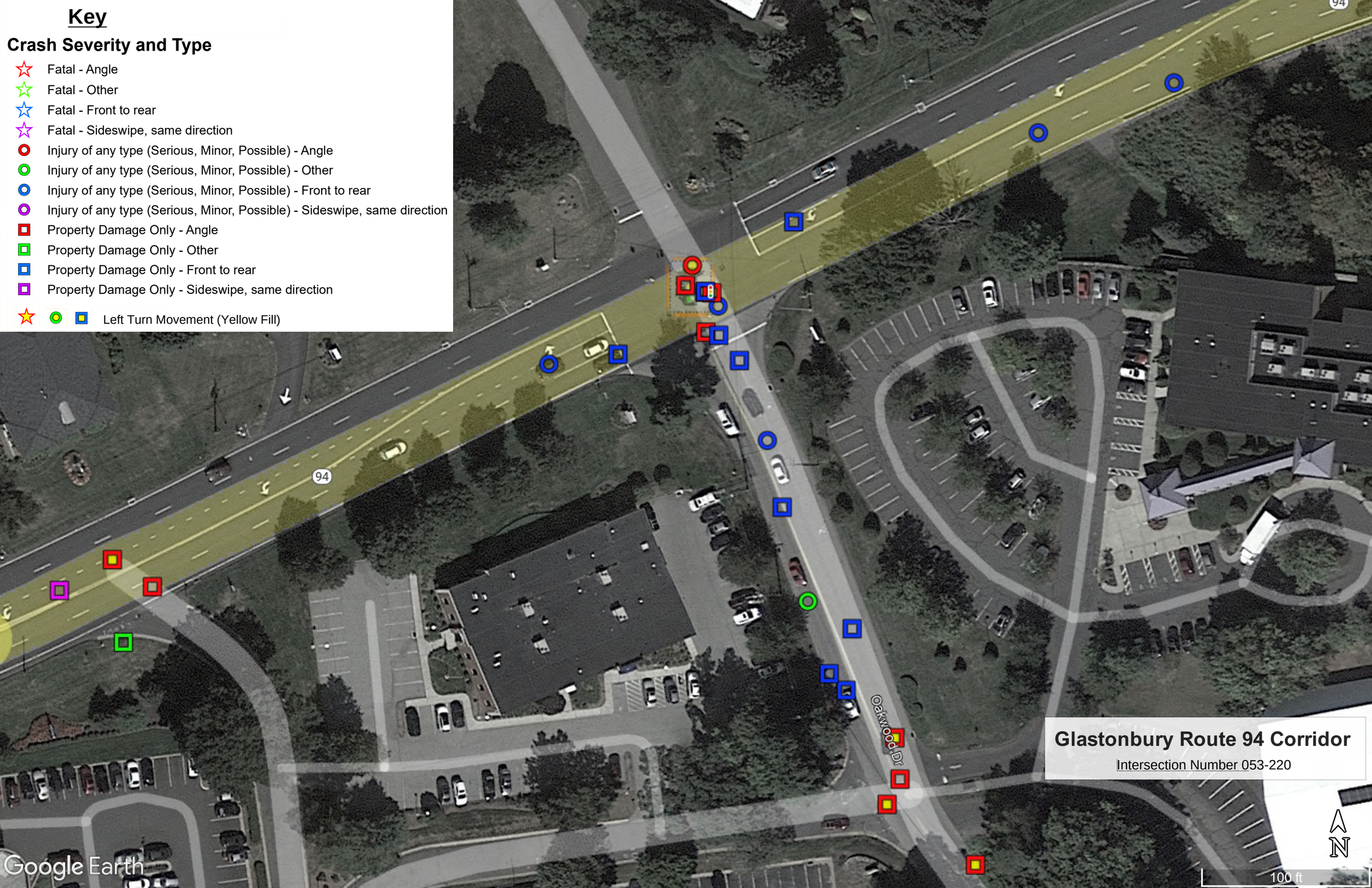
Intersection Number 053-211



Glastonbury Route 94 Corridor

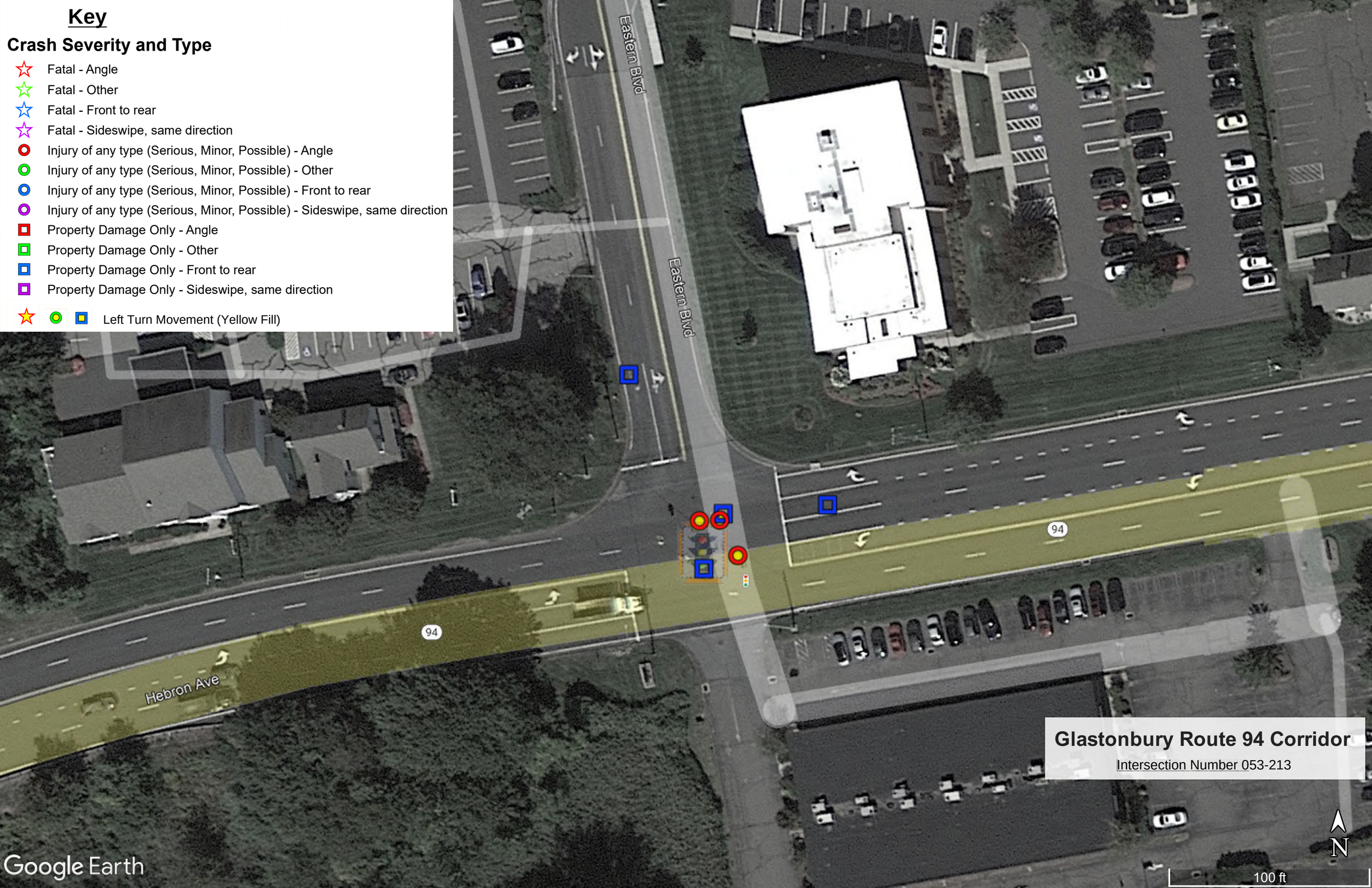
Intersection Number 053-225


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Western Blvd
Western Blvd
Hebron Ave
Hebron Ave
94
94
94
2
Google Earth
Glastonbury Route 94 Corridor
Intersection Number 053-210
N
200 ft



Glastonbury Route 94 Corridor

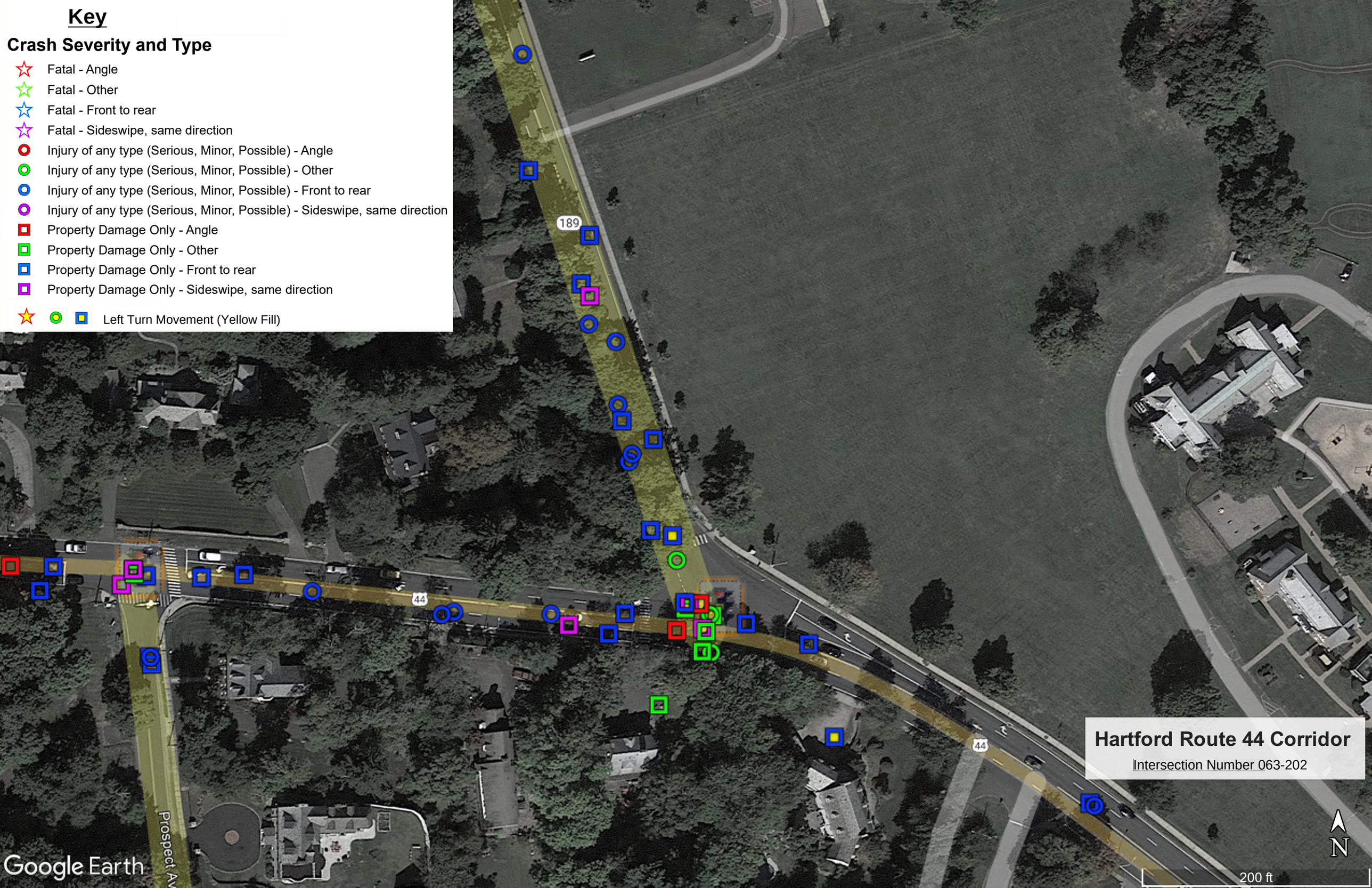
Intersection Number 053-220

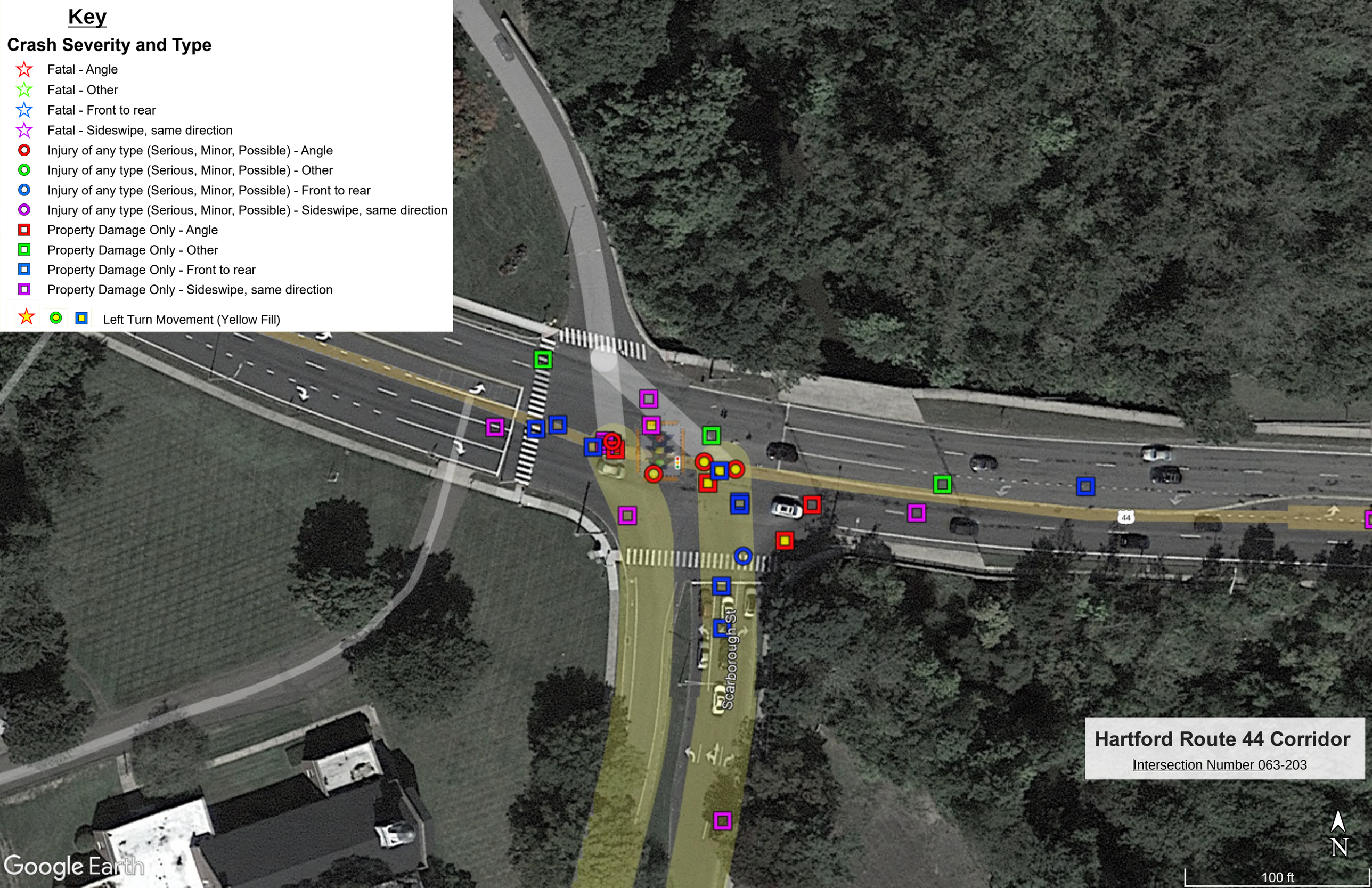


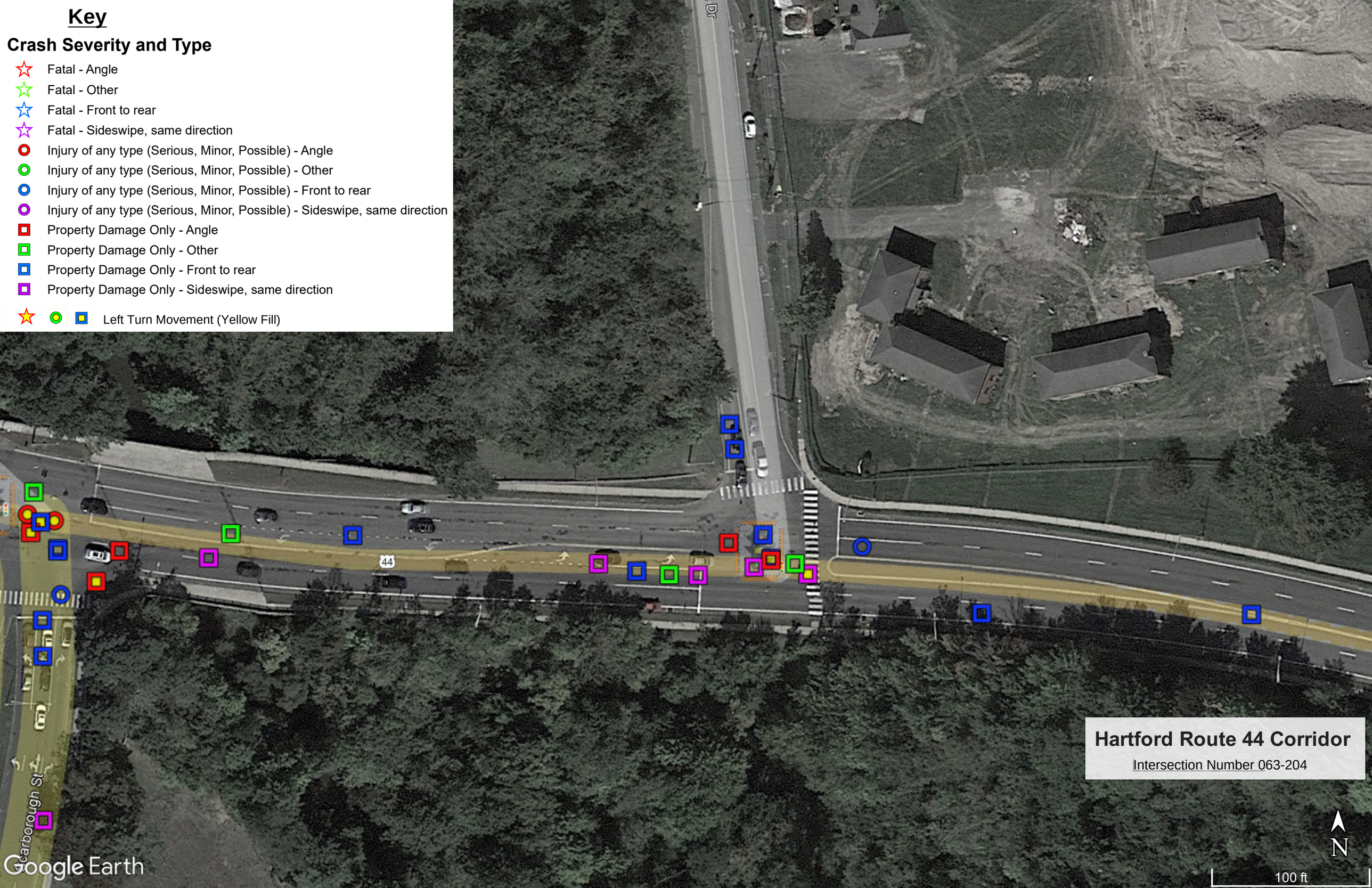
Glastonbury Route 94 Corridor

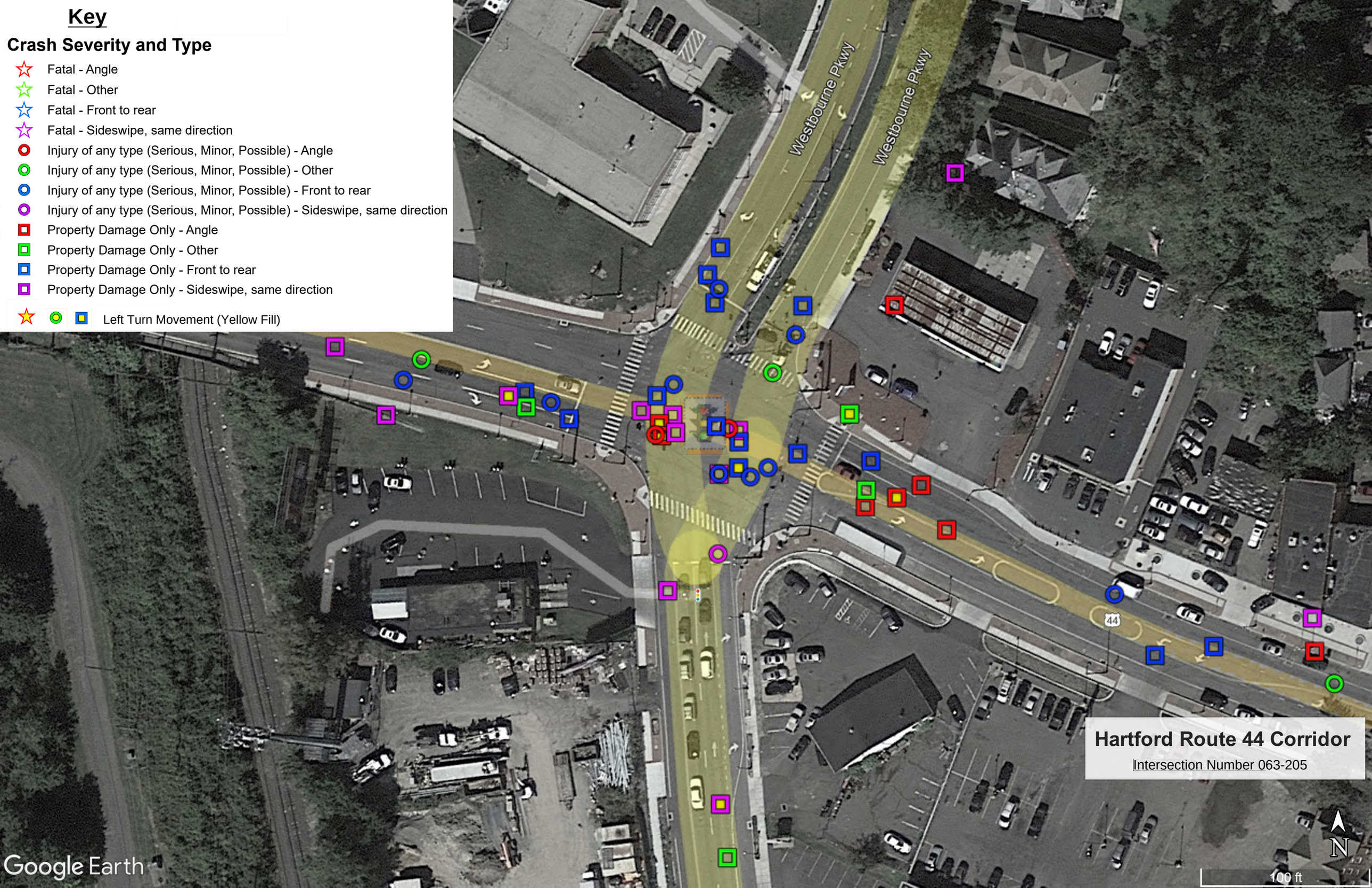
Intersection Number 053-213

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
189
44
Hartford Route 44 Corridor
Intersection Number 063-246
N
200 ft
Google Earth

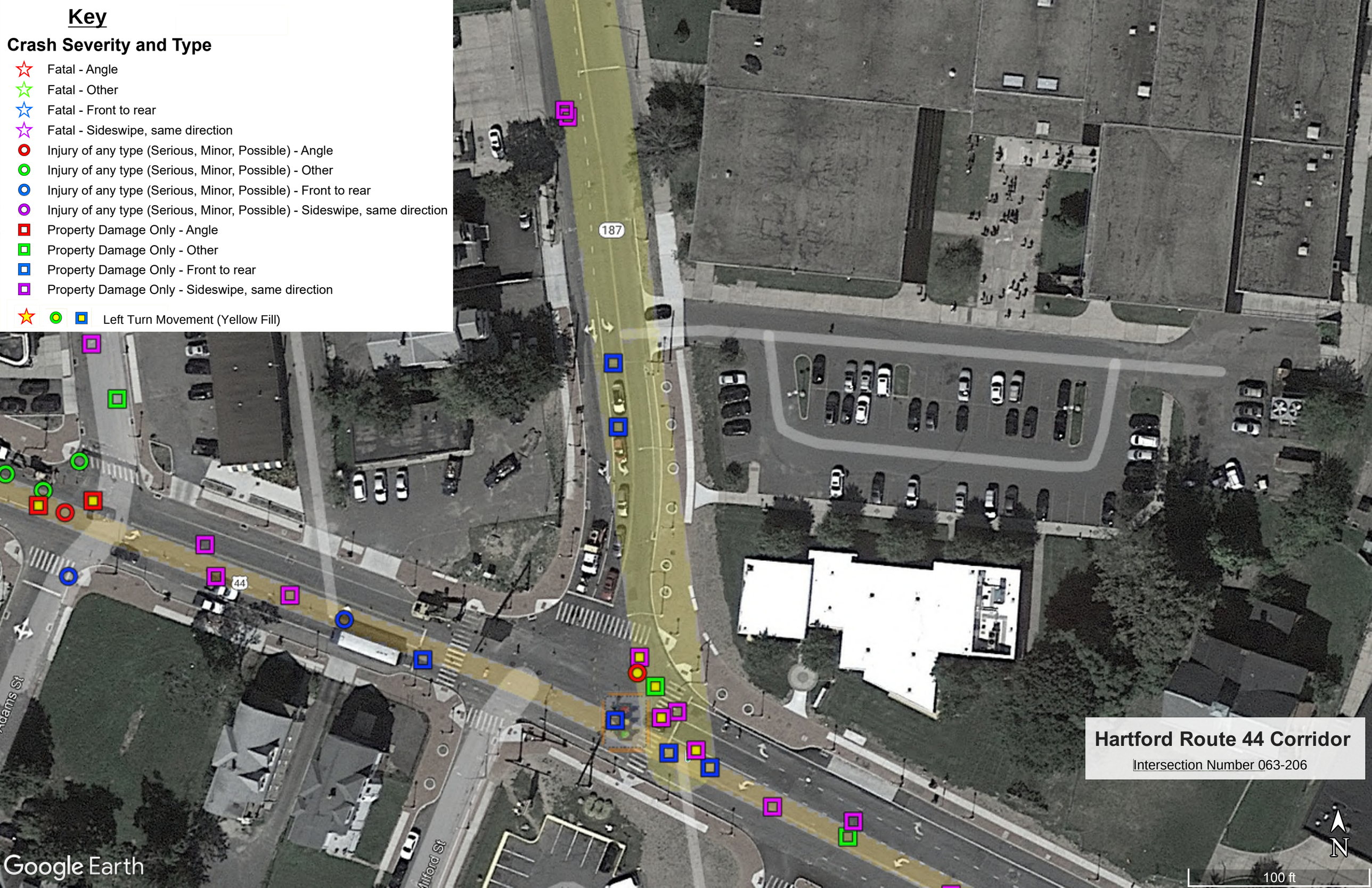

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
189
44
44
Prospect Av
Google Earth
Hartford Route 44 Corridor
Intersection Number 063-202
N
200 ft


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Scarborough St
44
Hartford Route 44 Corridor
Intersection Number 063-203
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Dr
44
Carborough St
Google Earth
Hartford Route 44 Corridor
Intersection Number 063-204
N
100 ft

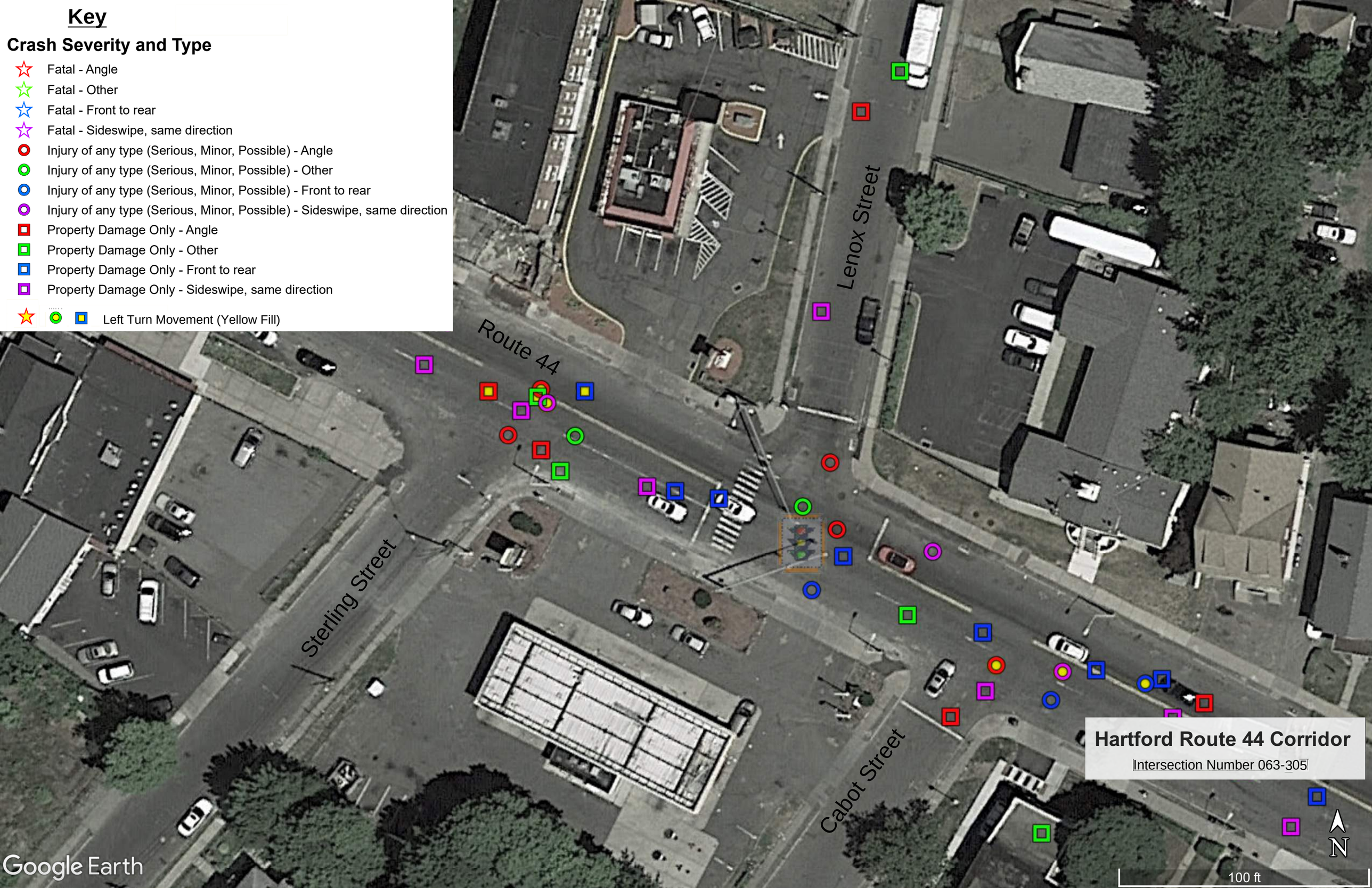

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Westbourne Pkwy
Westbourne Pkwy
44
Hartford Route 44 Corridor
Intersection Number 063-205
N
100 ft
Google Earth

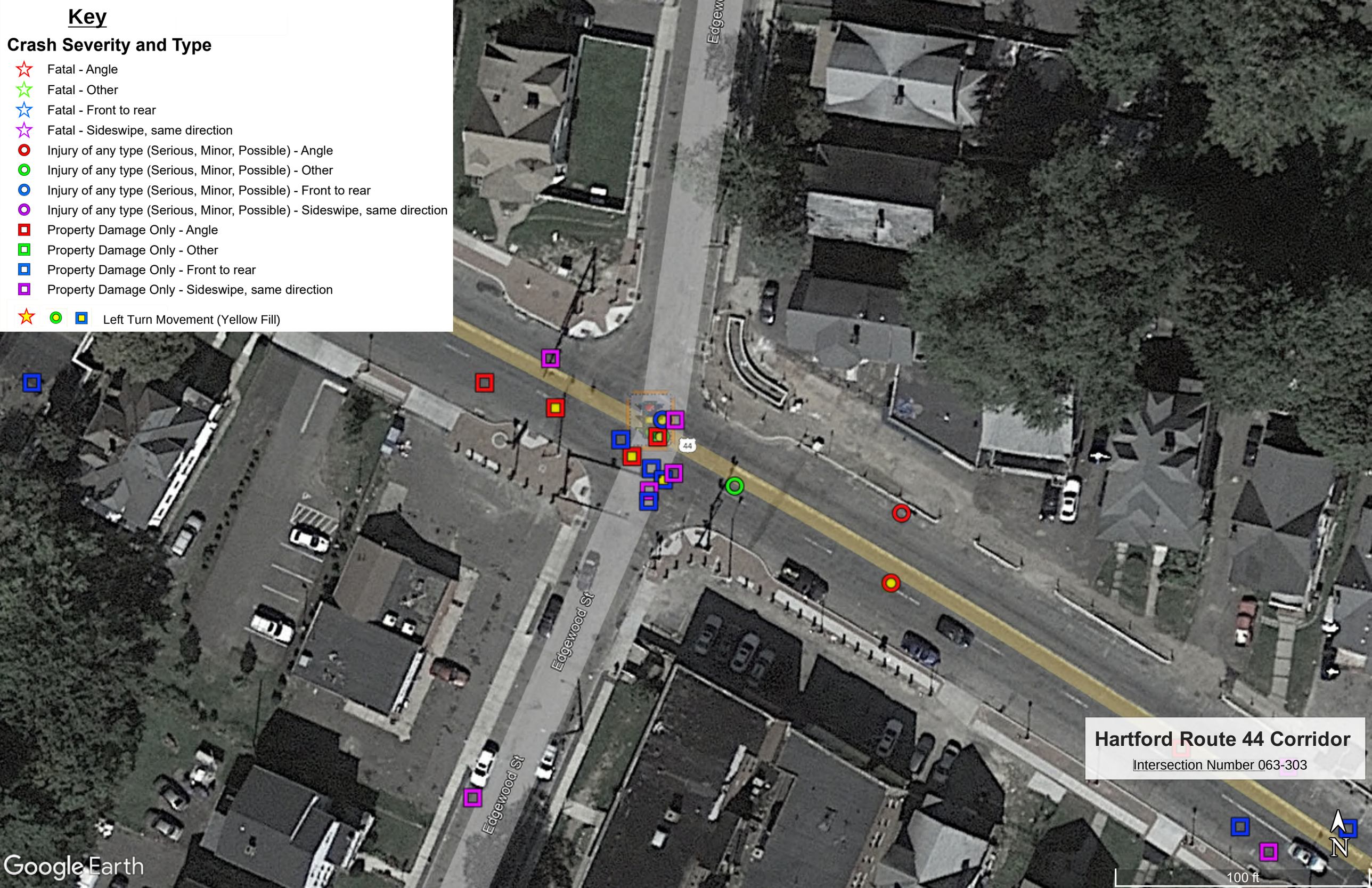
Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Kent St
Adams St
Baltimore St
Albany Ave
44
Hartford Route 44 Corridor
Intersection Number 063-302
N
100 ft
Google Earth

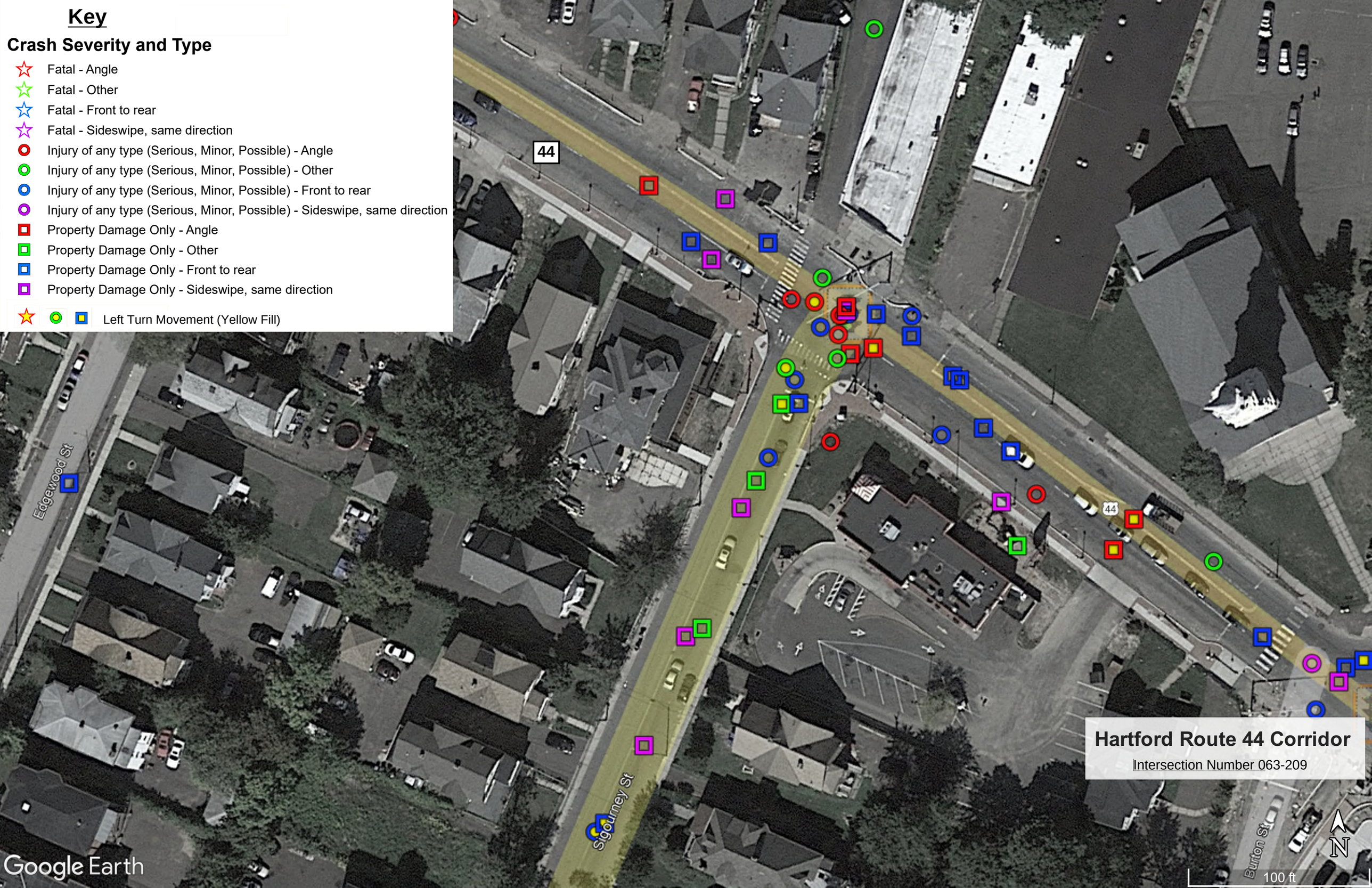

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
187
44
Hartford Route 44 Corridor
Intersection Number 063-206
N
100 ft
Google Earth

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Woodland St
44
Woodland St
Hartford Route 44 Corridor
Intersection Number 063-207
N
100 ft
Google Earth

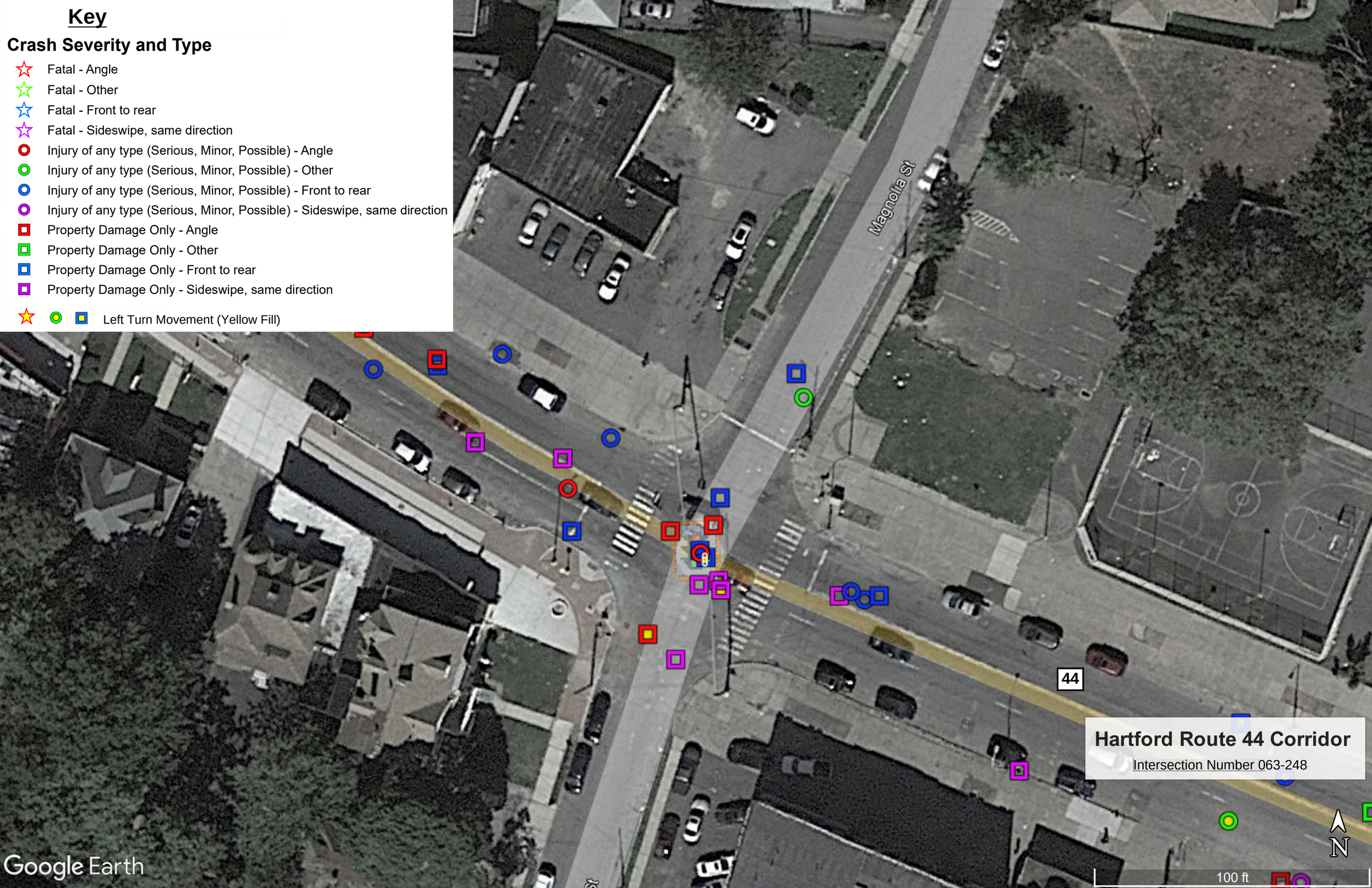
Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Oakland Terrace
Oakland Terrace
Oakland Terrace
Albany Ave
Deerfield Ave
44
Hartford Route 44 Corridor
Intersection Number 063-304
N
100 ft
Google Earth

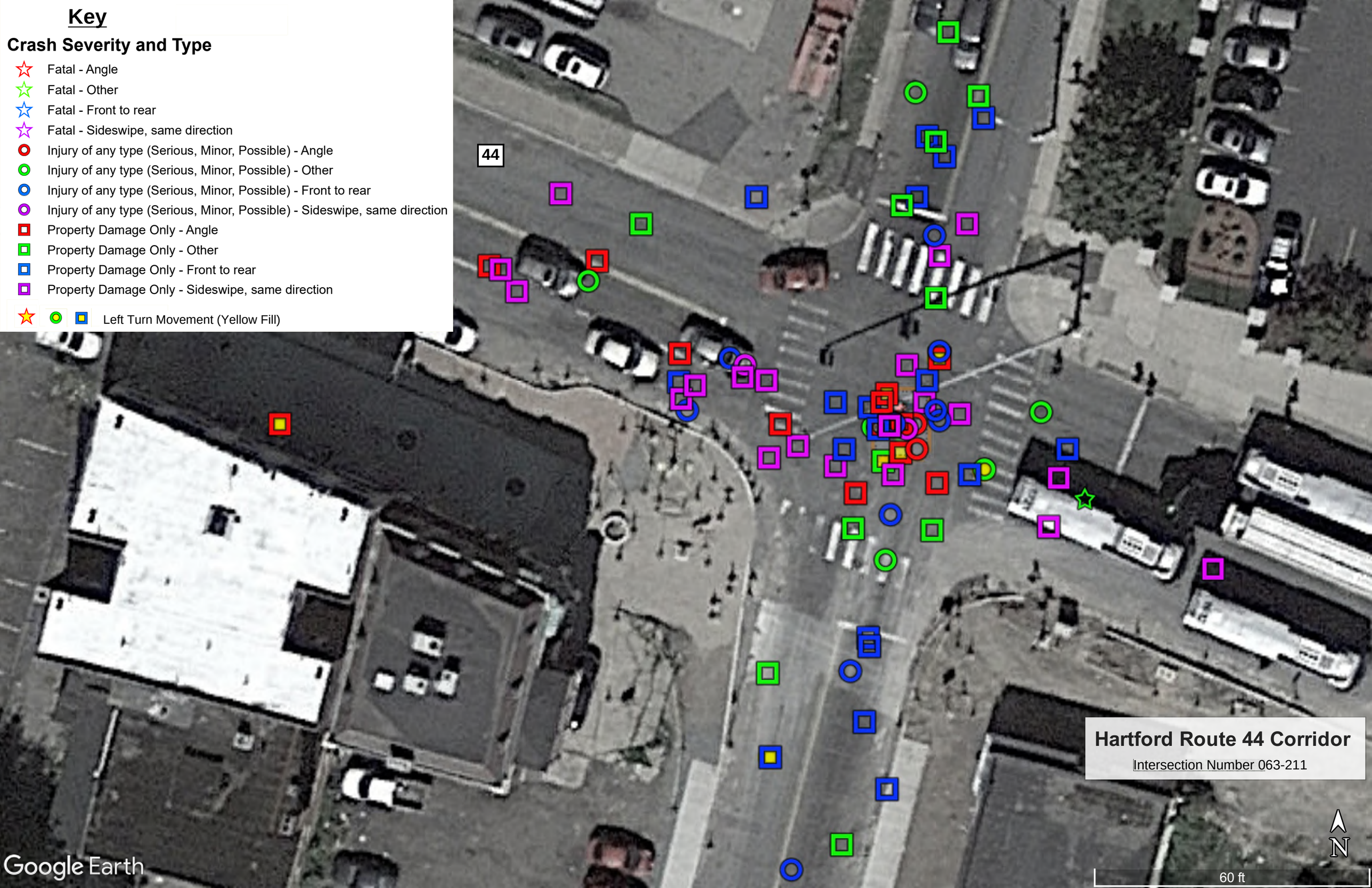

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Route 44
Lenox Street
Sterling Street
Cabot Street
Hartford Route 44 Corridor
Intersection Number 063-305
N
100 ft
Google Earth

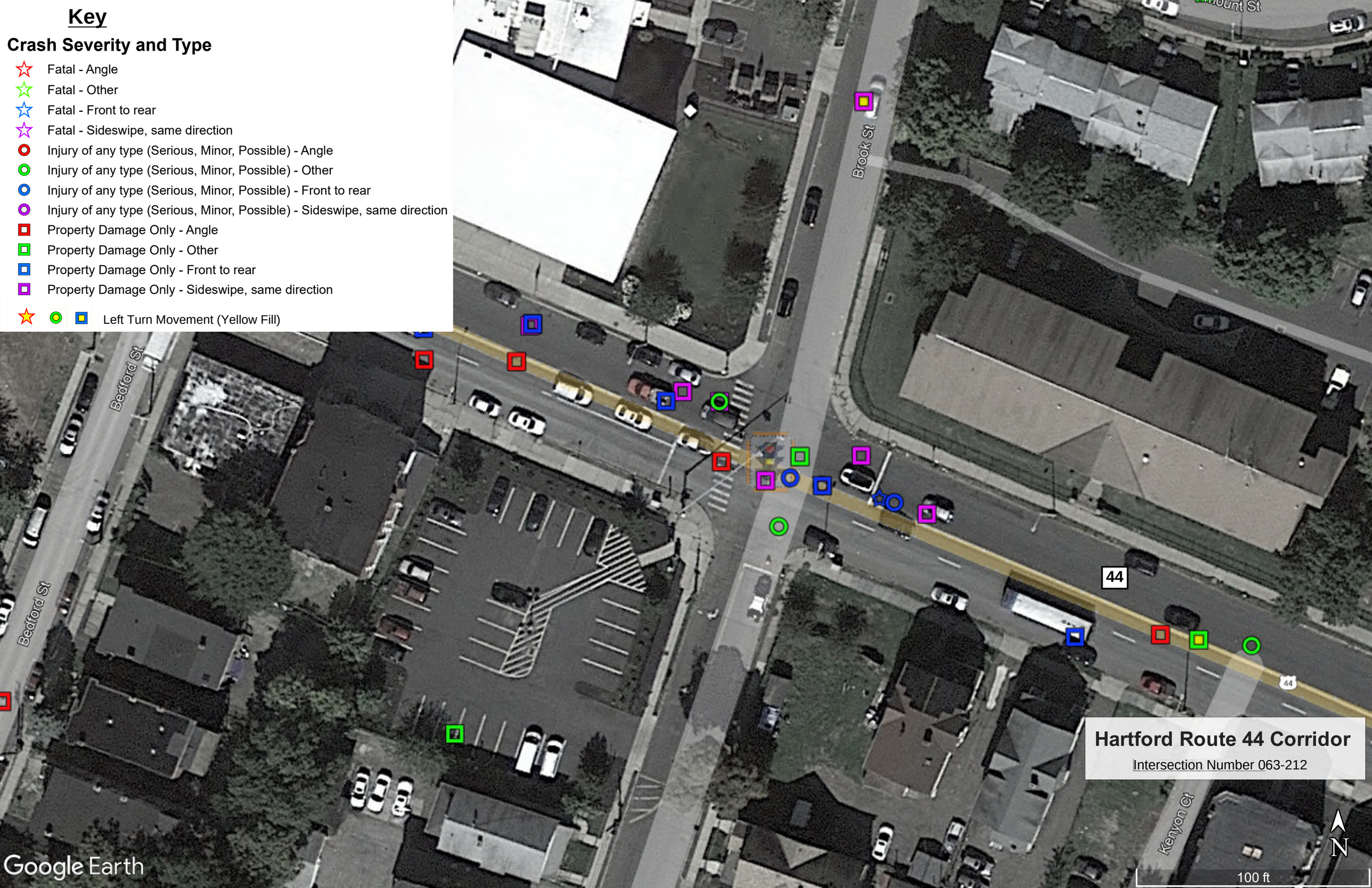

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Edgewood St
Edgewood St
Edgewood St
44
Hartford Route 44 Corridor
Intersection Number 063-303
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
44
Edgewood St
Sigourney St
Burton St
Hartford Route 44 Corridor
Intersection Number 063-209
N
100 ft
Google Earth

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Vine St
Vine St
Burton St
Burton St
Magnolia St
44
Hartford Route 44 Corridor
Intersection Number 063-210
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Magnolia St
44
Hartford Route 44 Corridor
Intersection Number 063-248
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
44
Hartford Route 44 Corridor
Intersection Number 063-211
N
60 ft
Google Earth

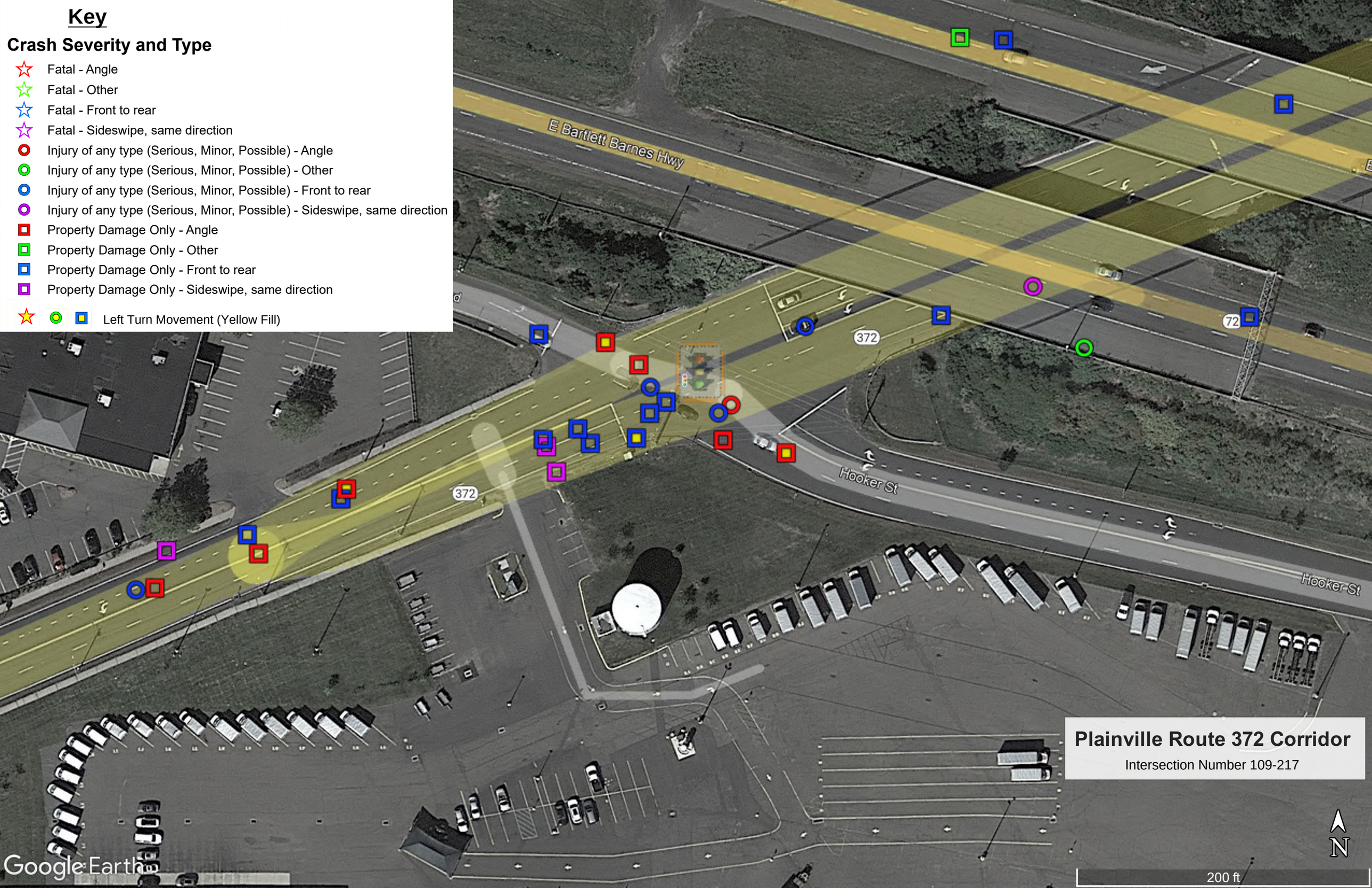


Hartford Route 44 Corridor

Intersection Number 063-212

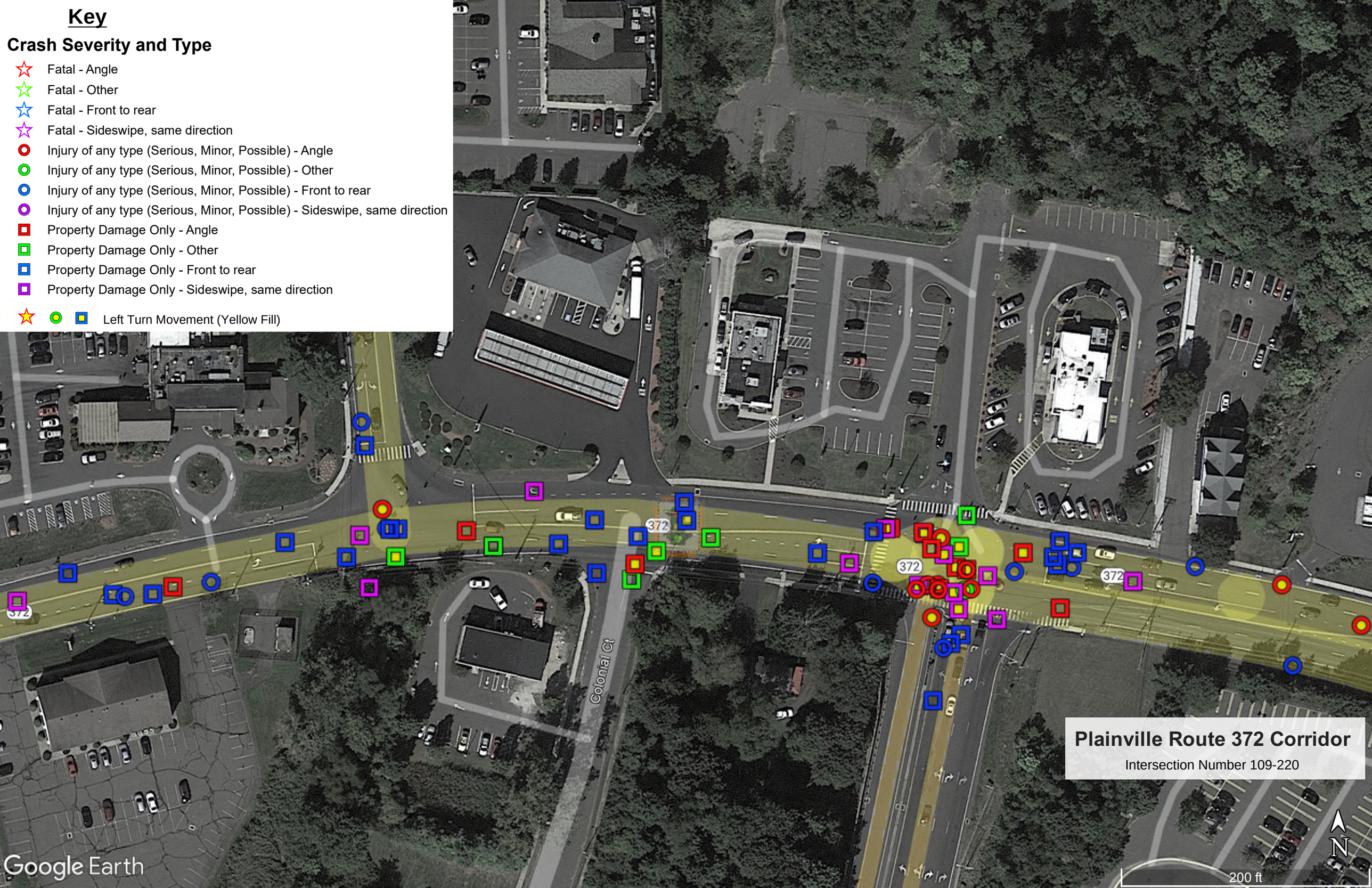
Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Fairmount St
Green St
Green St
Kenyon Ct
Kenyon Ct
Williams St
Williams St
Center St
44
Hartford Route 44 Corridor
Intersection Number 063-277
N
100 ft
Google Earth

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Edwards St
44
Google Earth
Hartford Route 44 Corridor
Intersection Number 063-215
N
100 ft



Plainville Route 372 Corridor

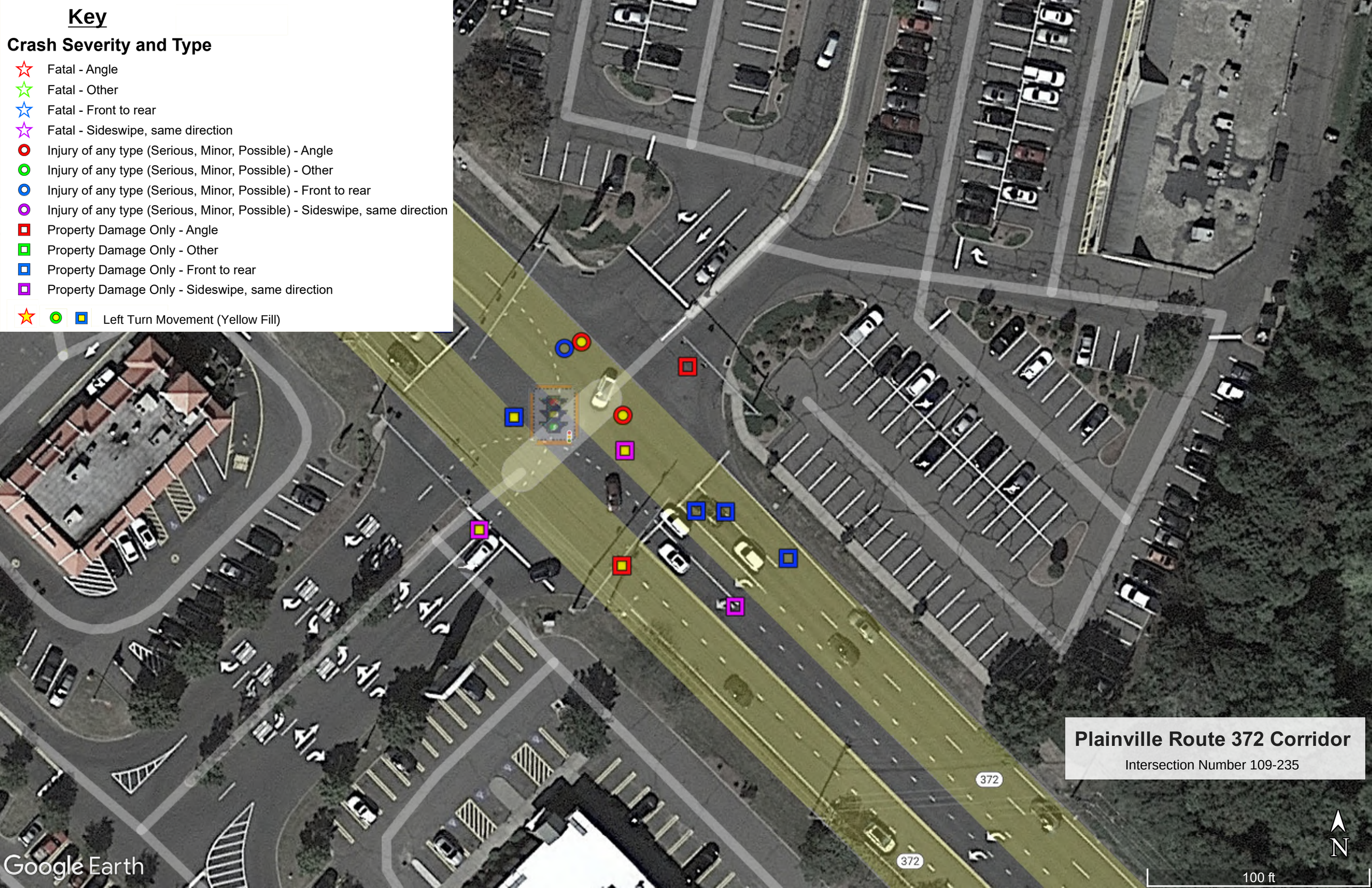
Intersection Number 109-217

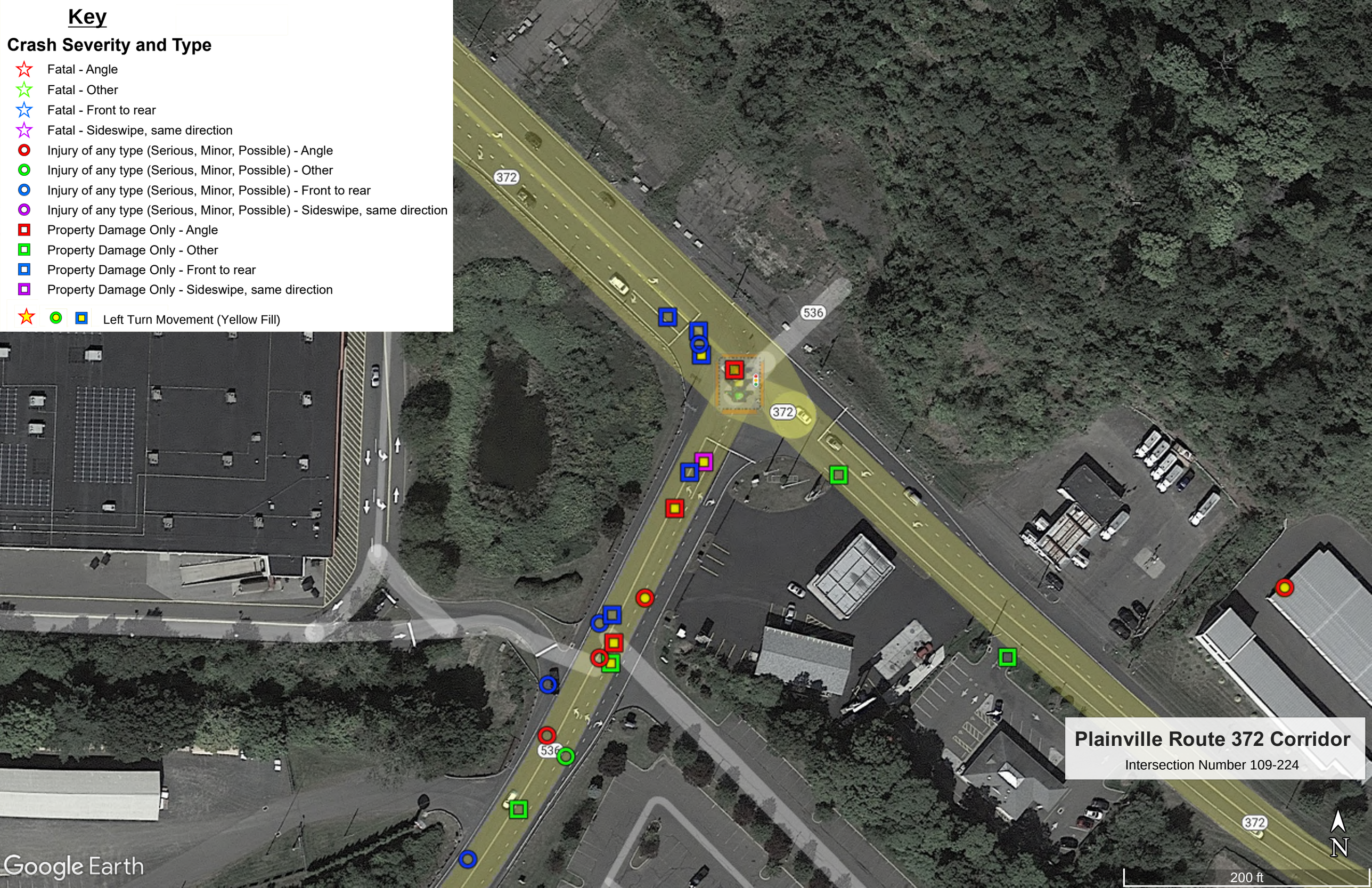


Plainville Route 372 Corridor

Intersection Number 109-220

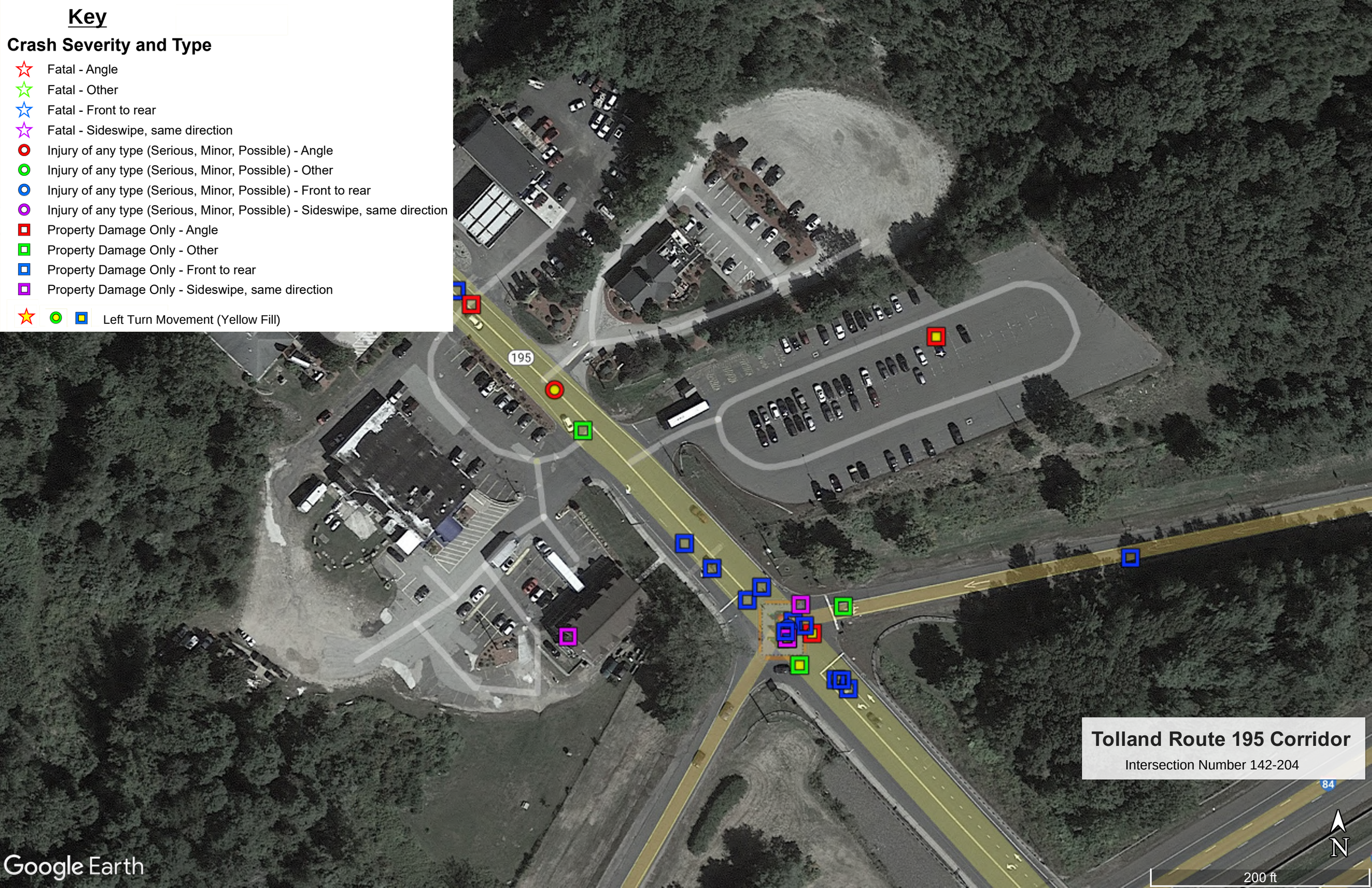
Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Plainville Route 372 Corridor
Intersection Number 109-209
372
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Plainville Route 372 Corridor
Intersection Number 109-235
372
372
N
100 ft
Google Earth



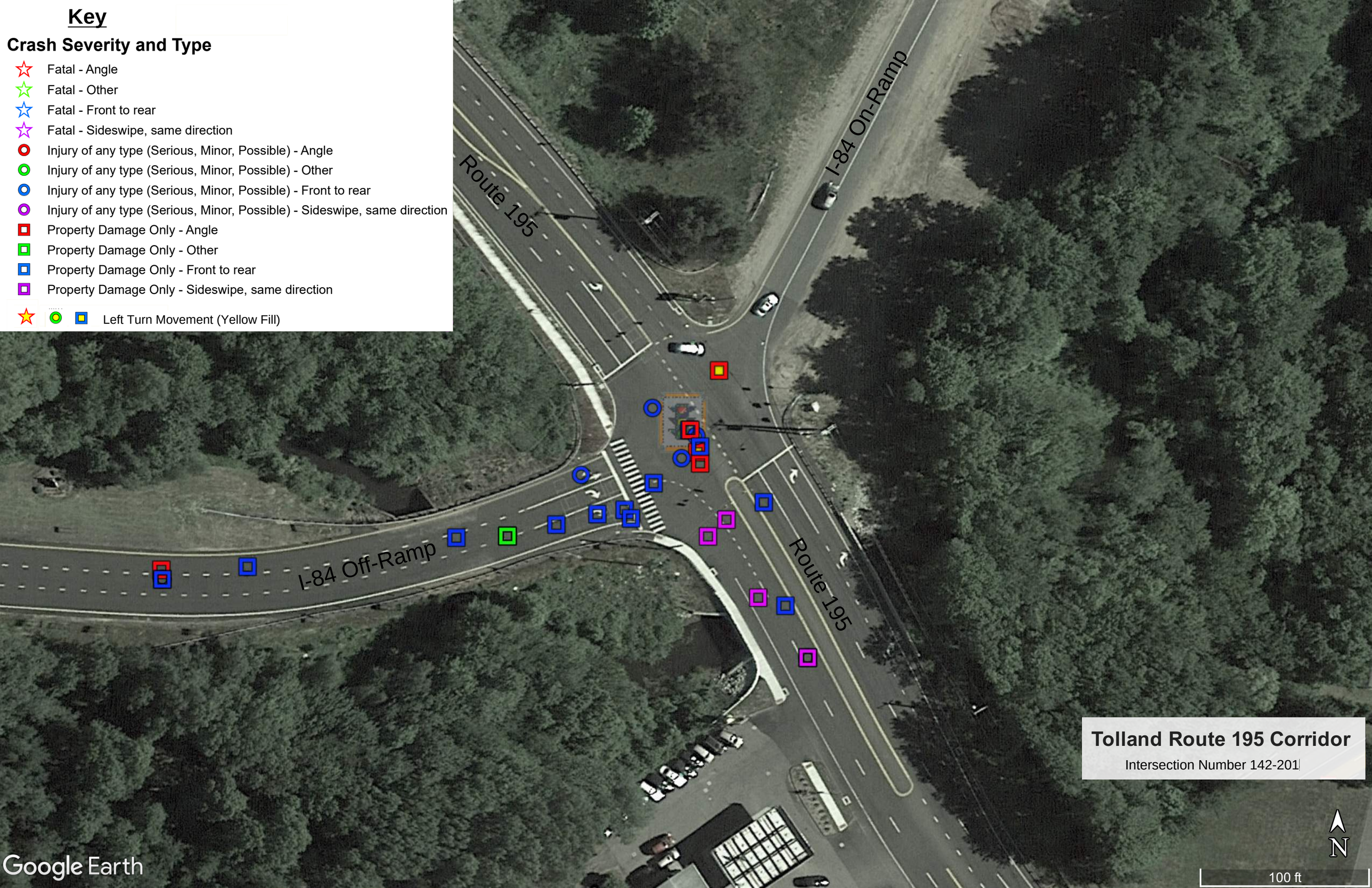
Plainville Route 372 Corridor

Intersection Number 109-224

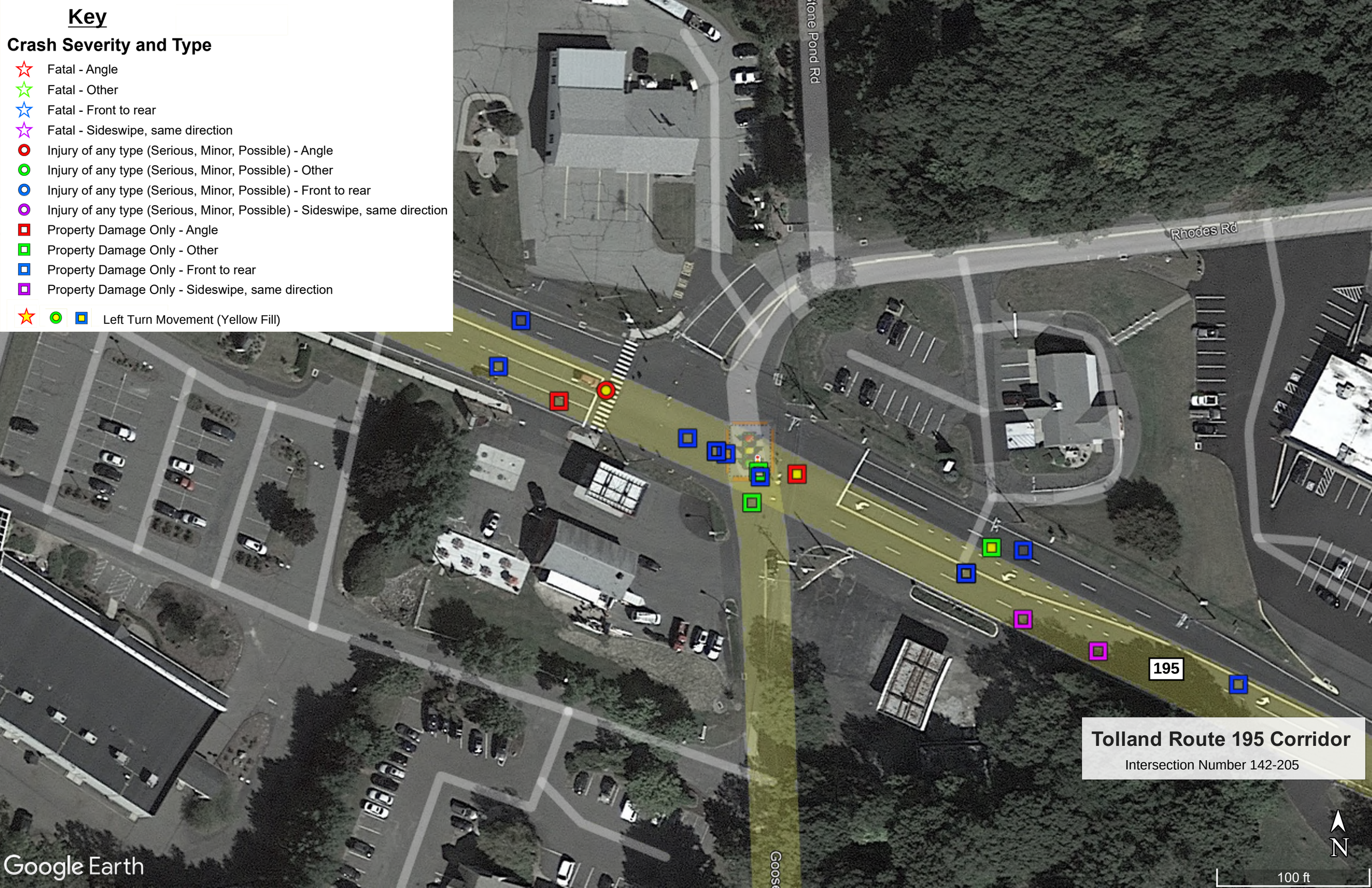


Tolland Route 195 Corridor

Intersection Number 142-204


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Route 195
I-84 On-Ramp
I-84 Off-Ramp
Route 195
Tolland Route 195 Corridor
Intersection Number 142-201
N
100 ft
Google Earth

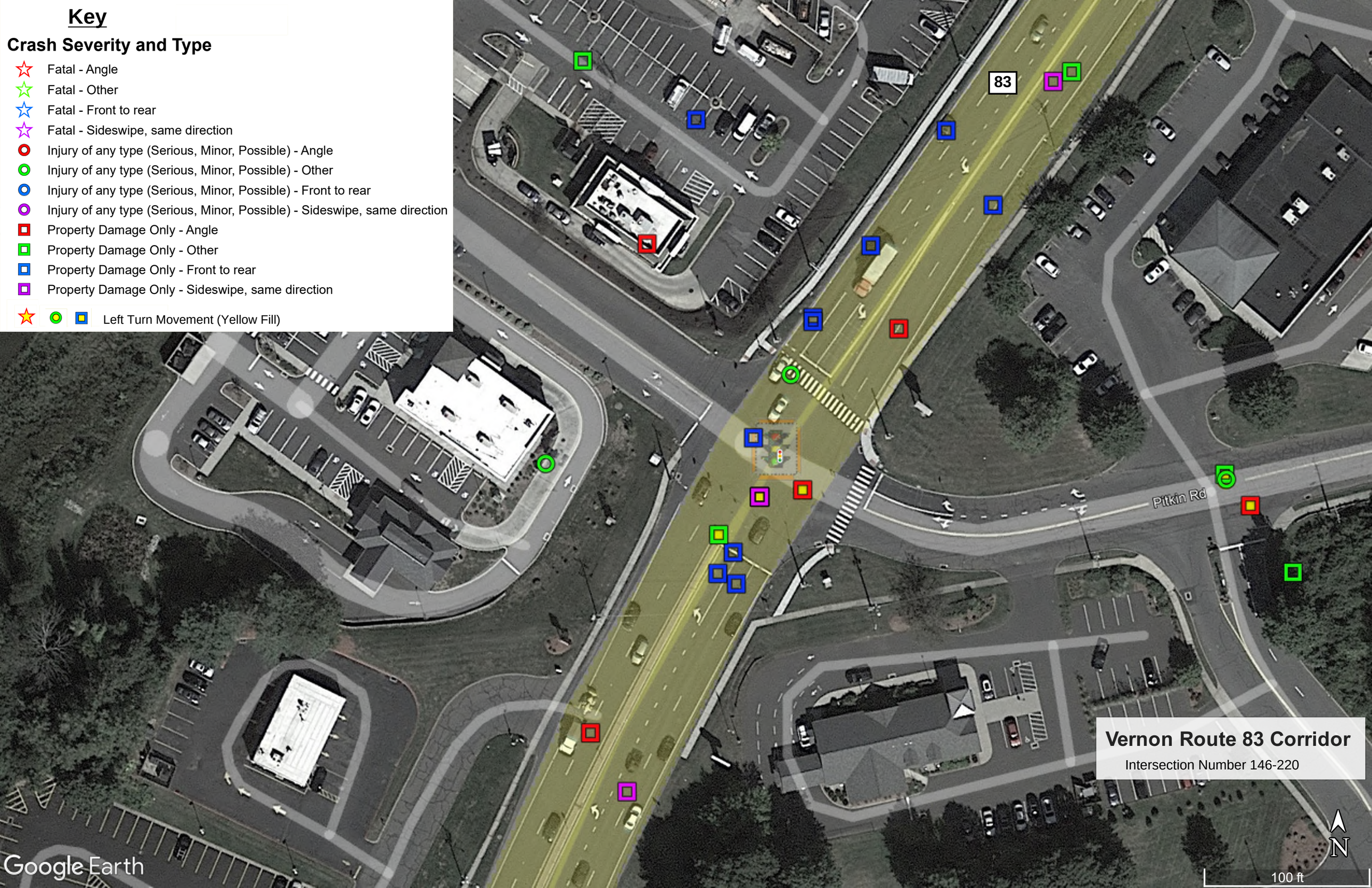
Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Tolland Route 195 Corridor
Intersection Number 142-207
195
Fieldstone Crns
Google Earth
N
100 ft

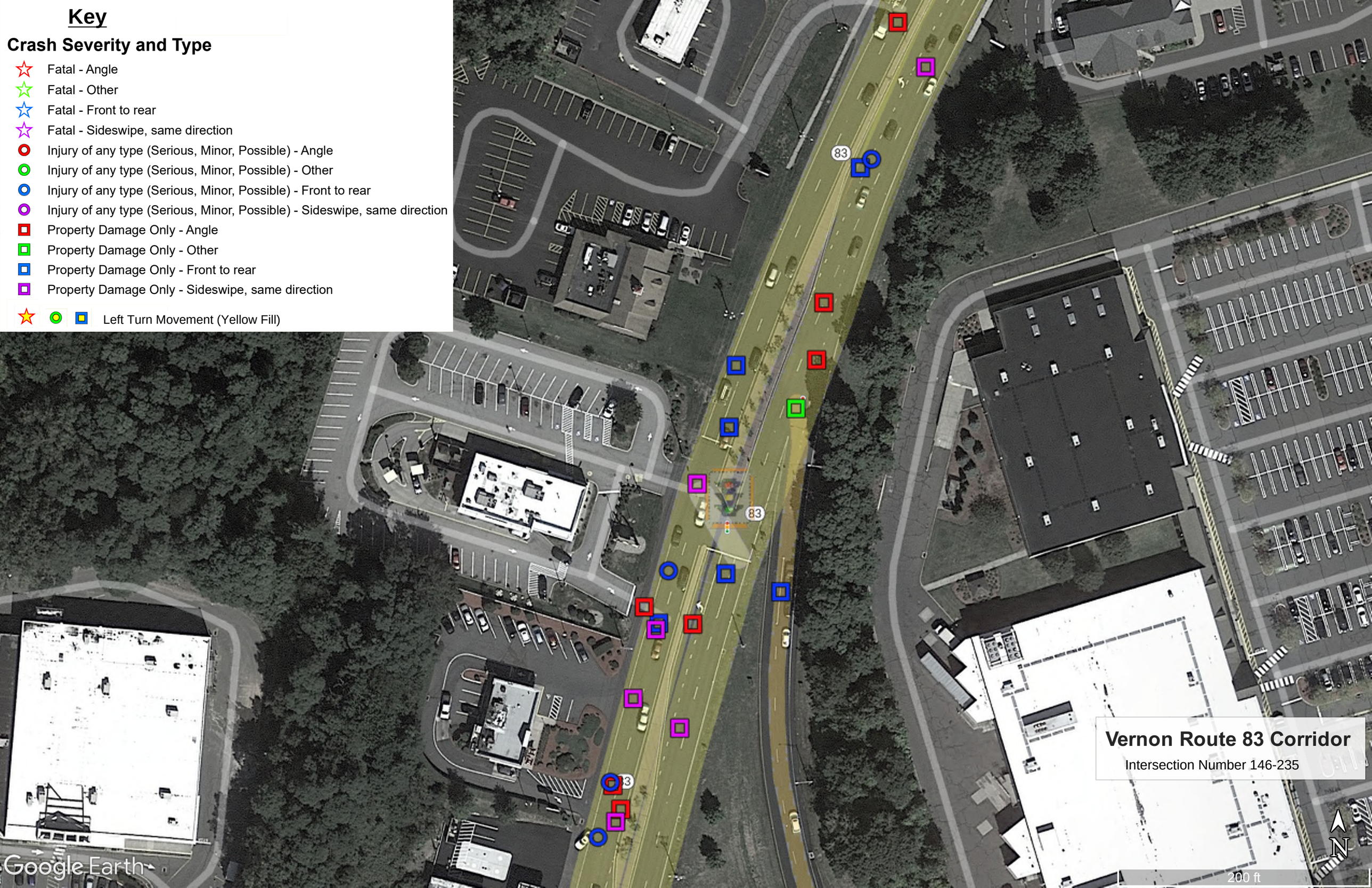


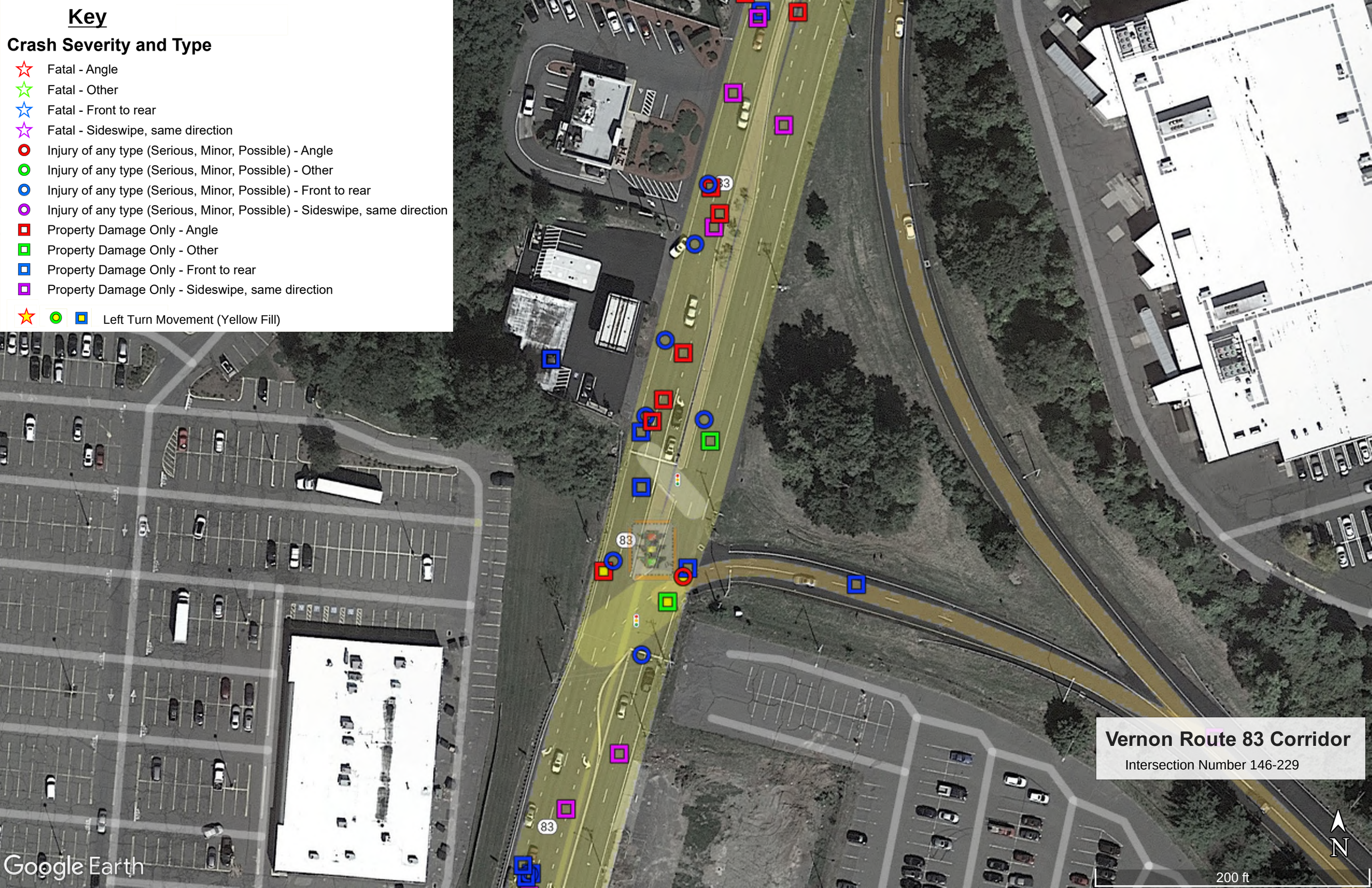
Tolland Route 195 Corridor

Intersection Number 142-205

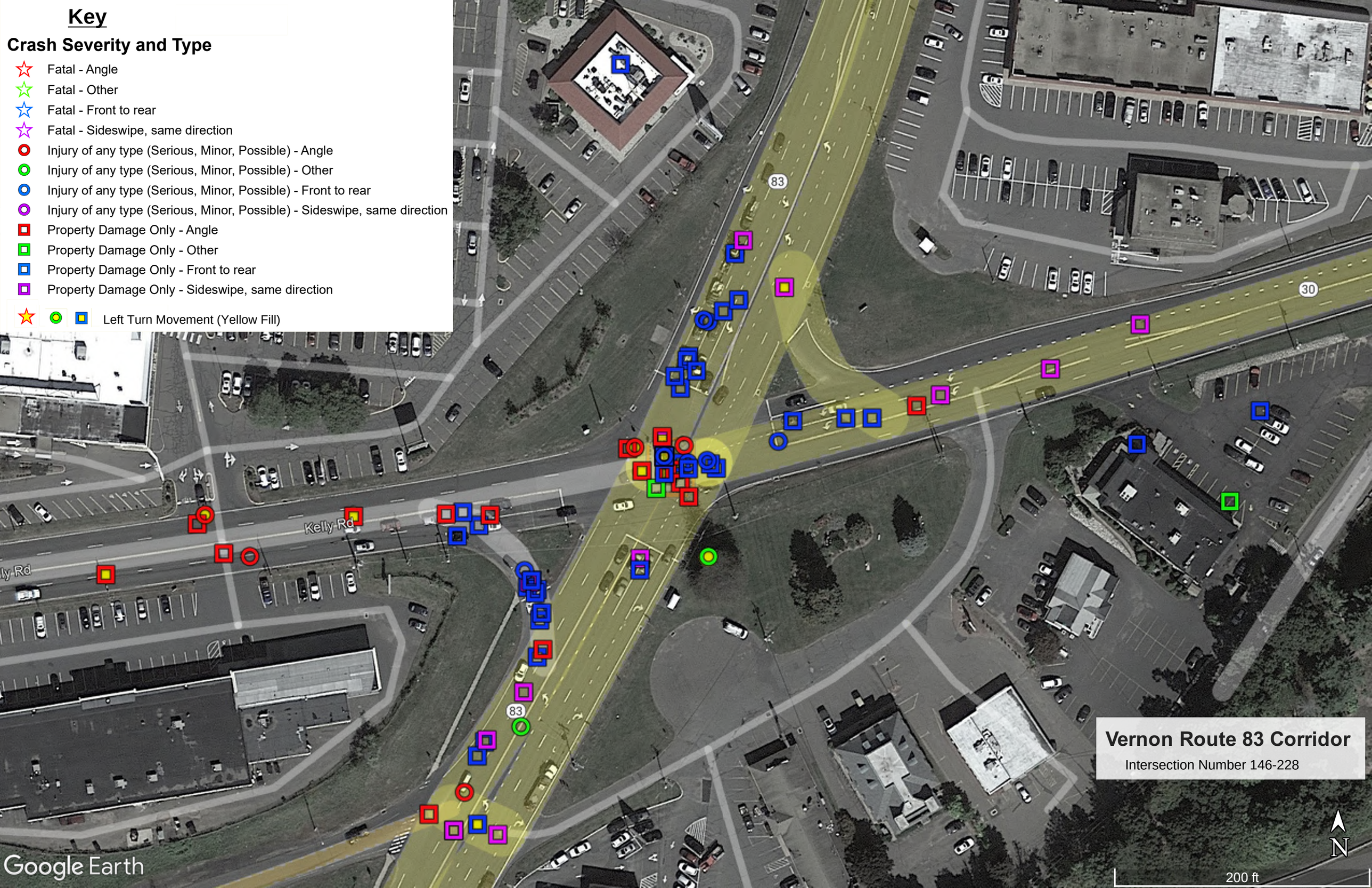
Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
83
Pleasant View Dr
Google Earth
Vernon Route 83 Corridor
Intersection Number 146-209
N
100 ft

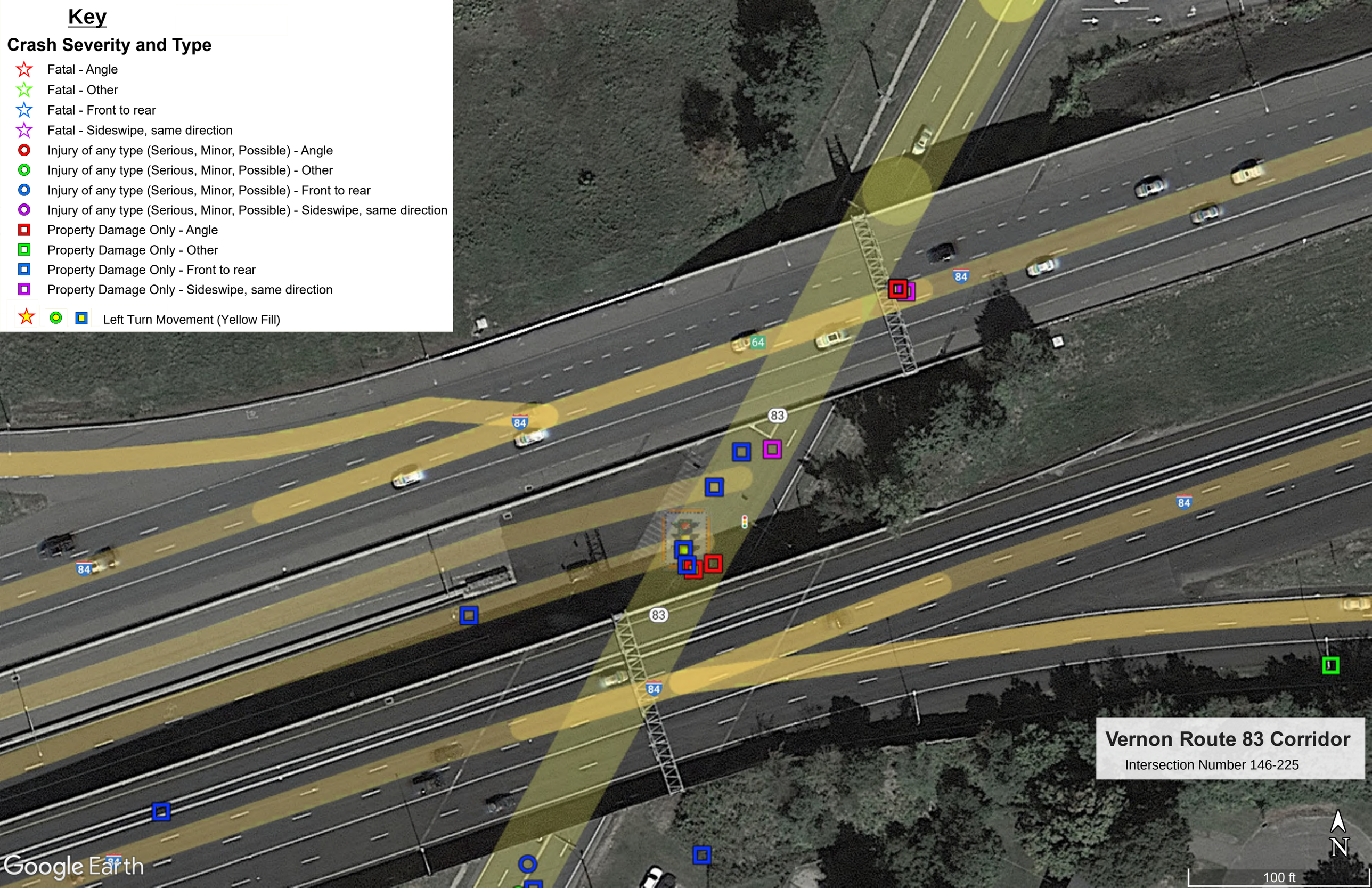

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
83
Pitkin Rd
Vernon Route 83 Corridor
Intersection Number 146-220
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
83
Vernon Route 83 Corridor
Intersection Number 146-235
N
200 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
83
Google Earth
Vernon Route 83 Corridor
Intersection Number 146-229
N
200 ft

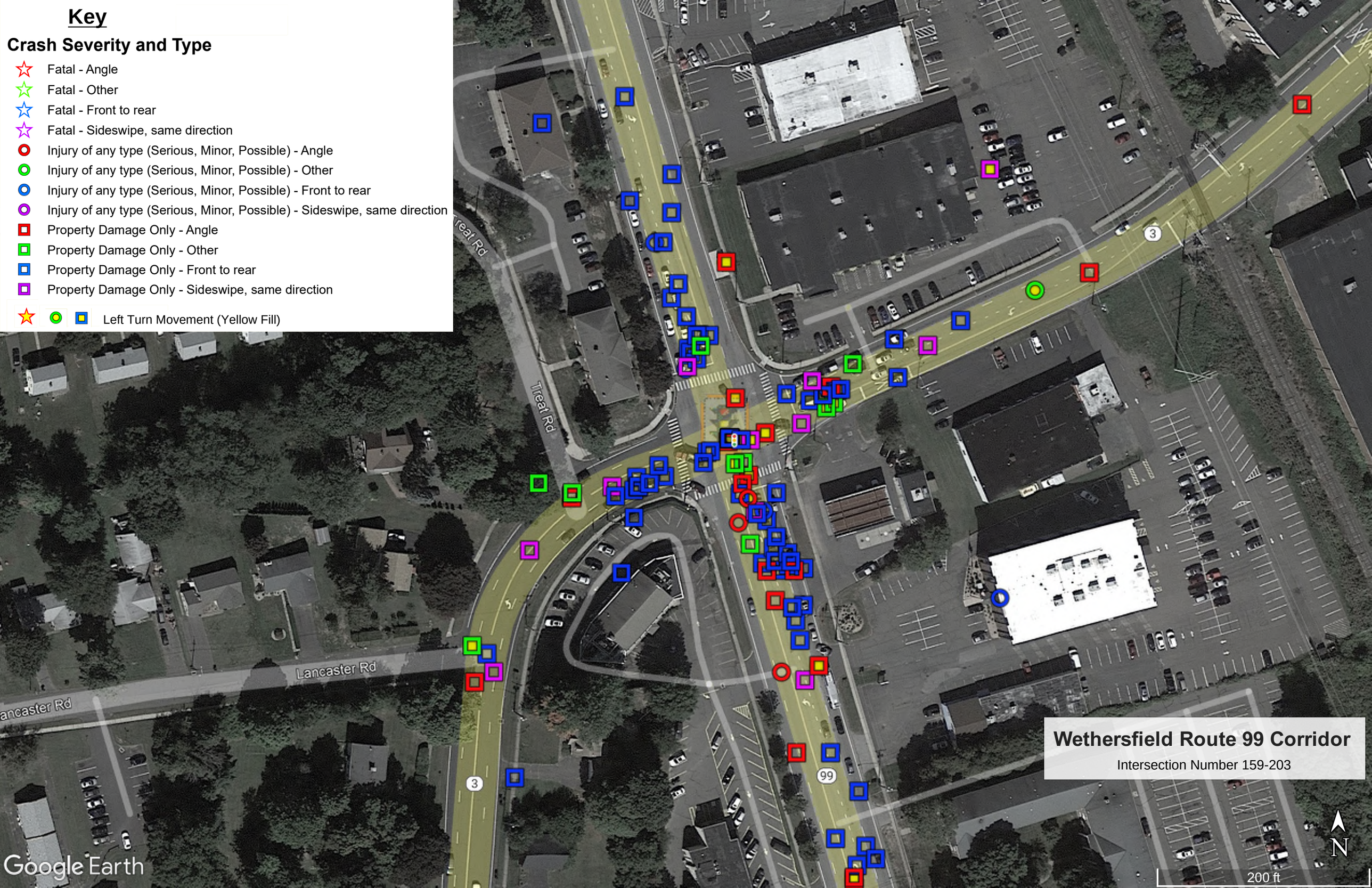
Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
83
Green
Vernon Route 83 Corridor
Intersection Number 146-203
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Kelly Rd
83
30
Google Earth
Vernon Route 83 Corridor
Intersection Number 146-228
N
200 ft



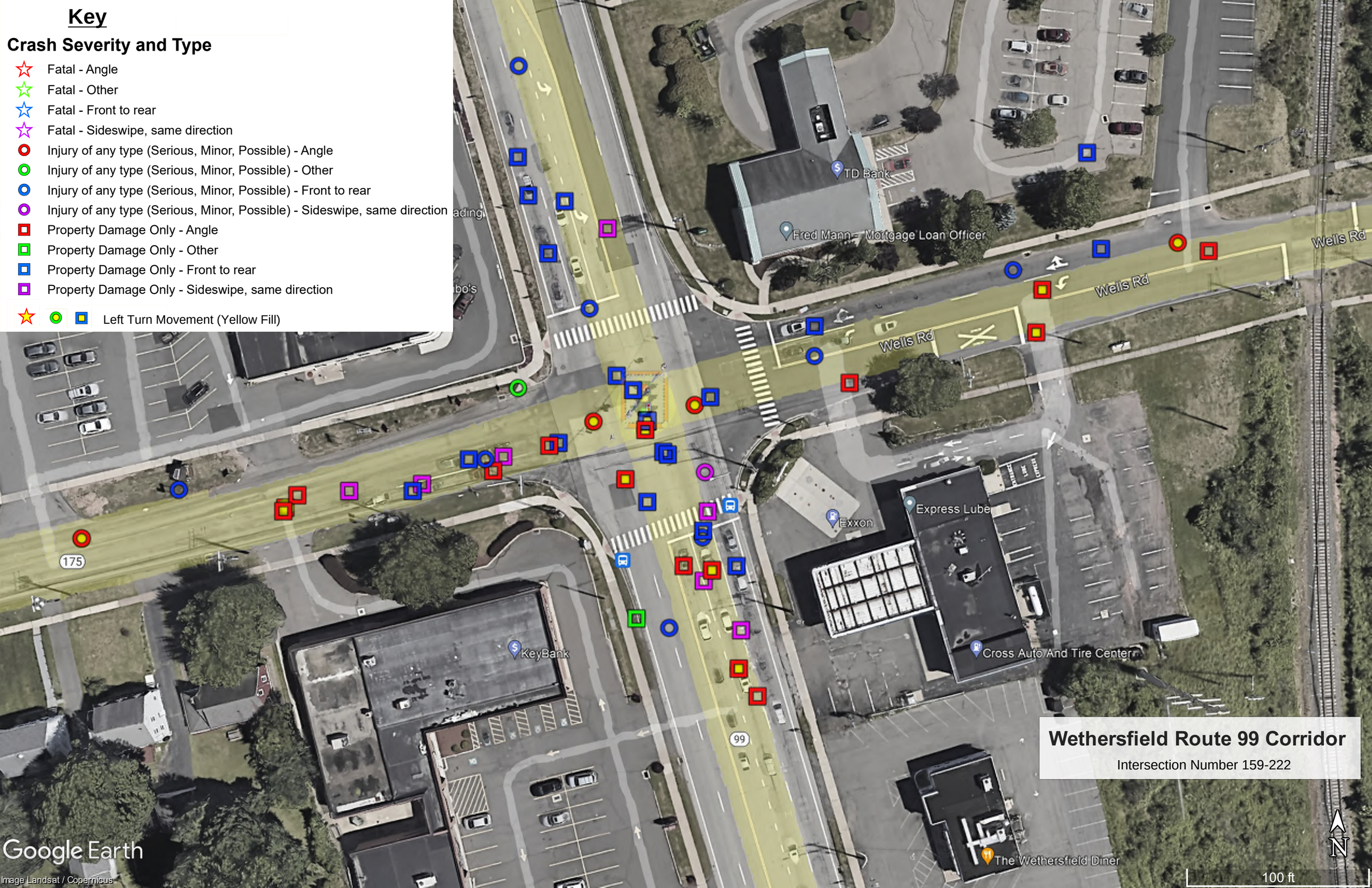
Vernon Route 83 Corridor

Intersection Number 146-225



Wethersfield Route 99 Corridor

Intersection Number 159-203



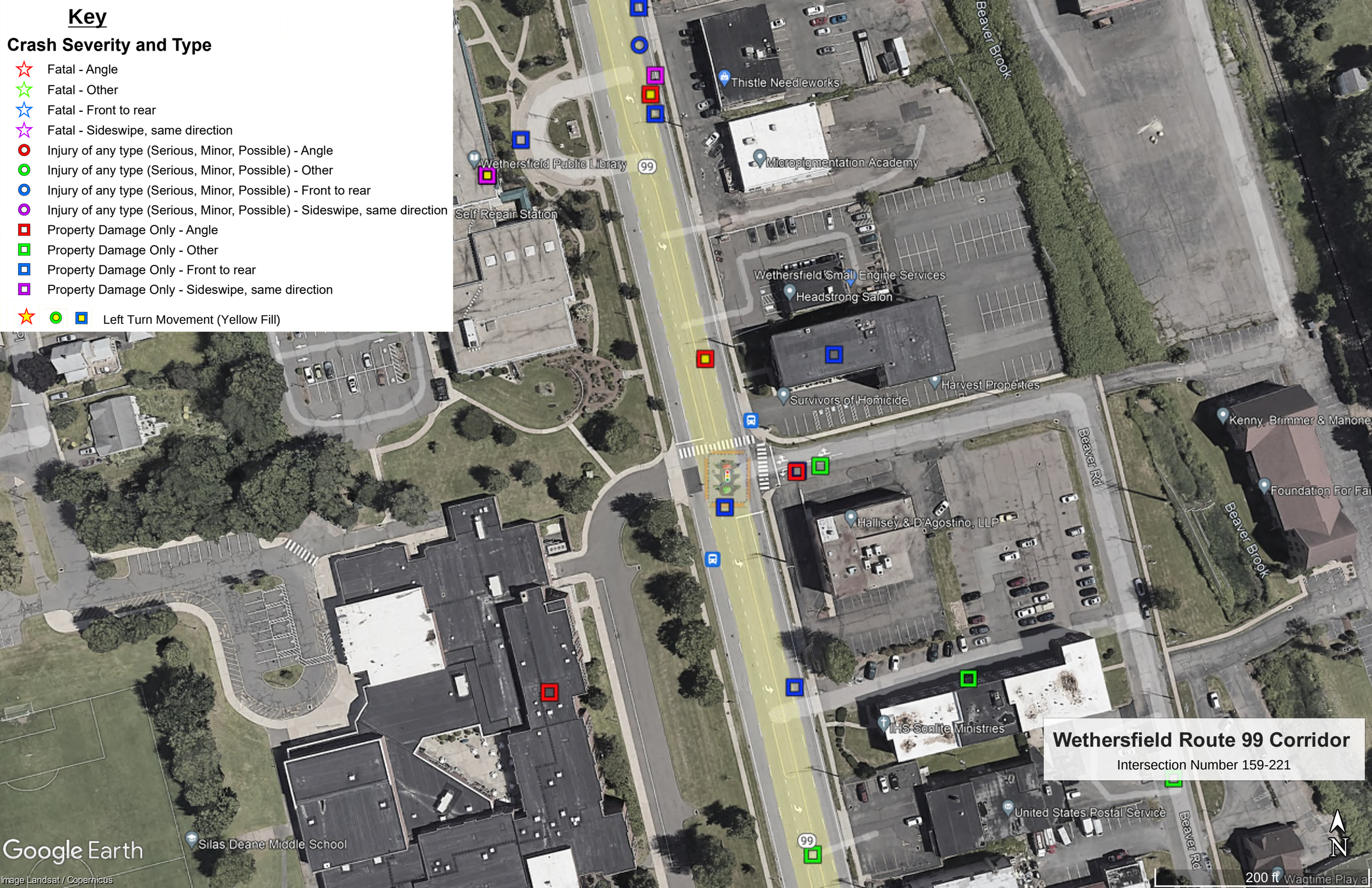
Wethersfield Route 99 Corridor

Intersection Number 159-222

Key

Crash Severity and Type

- Fatal - Angle
- Fatal - Other
- Fatal - Front to rear
- Fatal - Sideswipe, same direction
- Injury of any type (Serious, Minor, Possible) - Angle
- Injury of any type (Serious, Minor, Possible) - Other
- Injury of any type (Serious, Minor, Possible) - Front to rear
- Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
- Property Damage Only - Angle
- Property Damage Only - Other
- Property Damage Only - Front to rear
- Property Damage Only - Sideswipe, same direction
- Left Turn Movement (Yellow Fill)



Wethersfield Route 99 Corridor

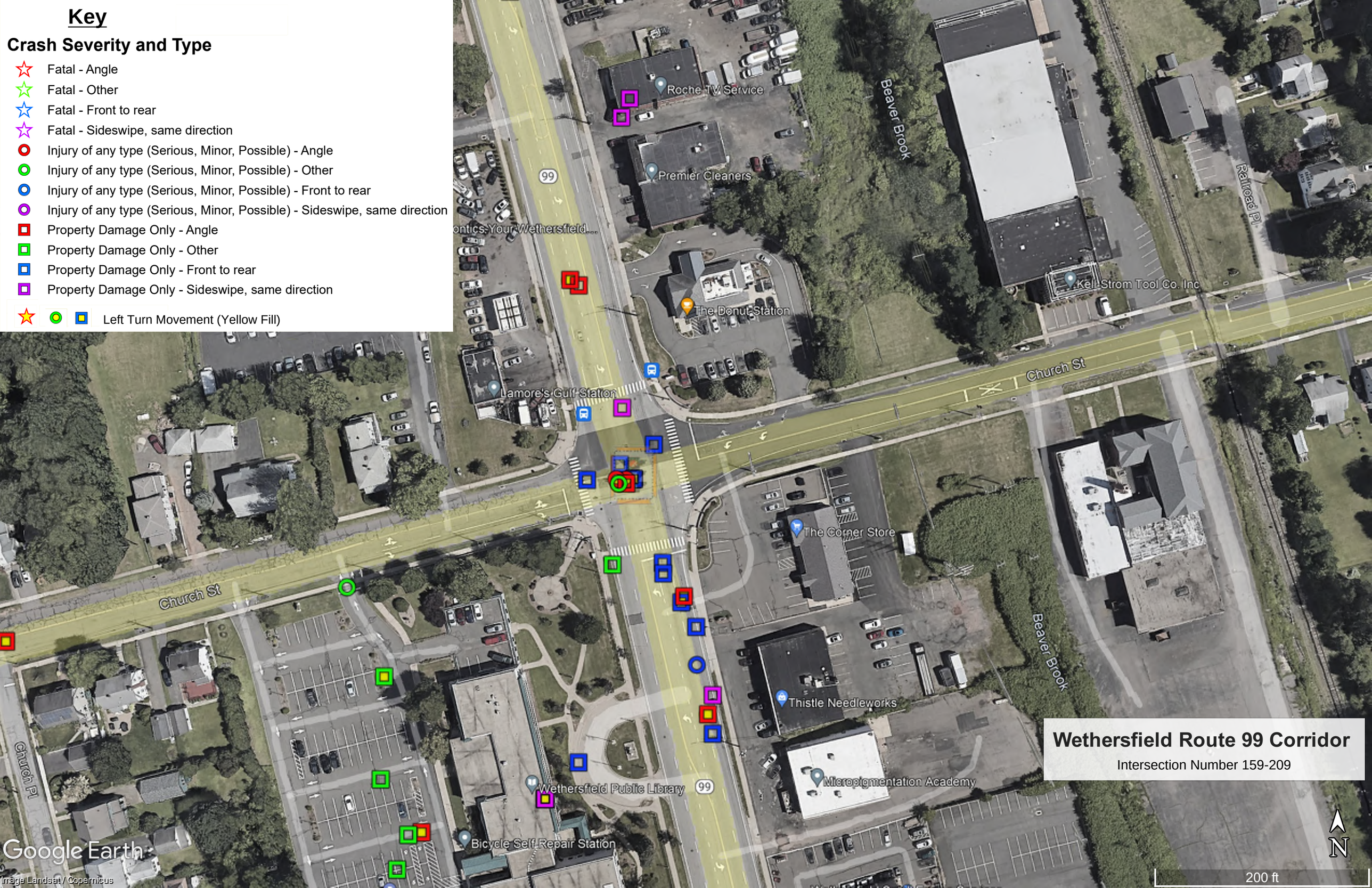
Intersection Number 159-221

Key

Crash Severity and Type

- Fatal - Angle
- Fatal - Other
- Fatal - Front to rear
- Fatal - Sideswipe, same direction
- Injury of any type (Serious, Minor, Possible) - Angle
- Injury of any type (Serious, Minor, Possible) - Other
- Injury of any type (Serious, Minor, Possible) - Front to rear
- Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
- Property Damage Only - Angle
- Property Damage Only - Other
- Property Damage Only - Front to rear
- Property Damage Only - Sideswipe, same direction

Left Turn Movement (Yellow Fill)



Wethersfield Route 99 Corridor

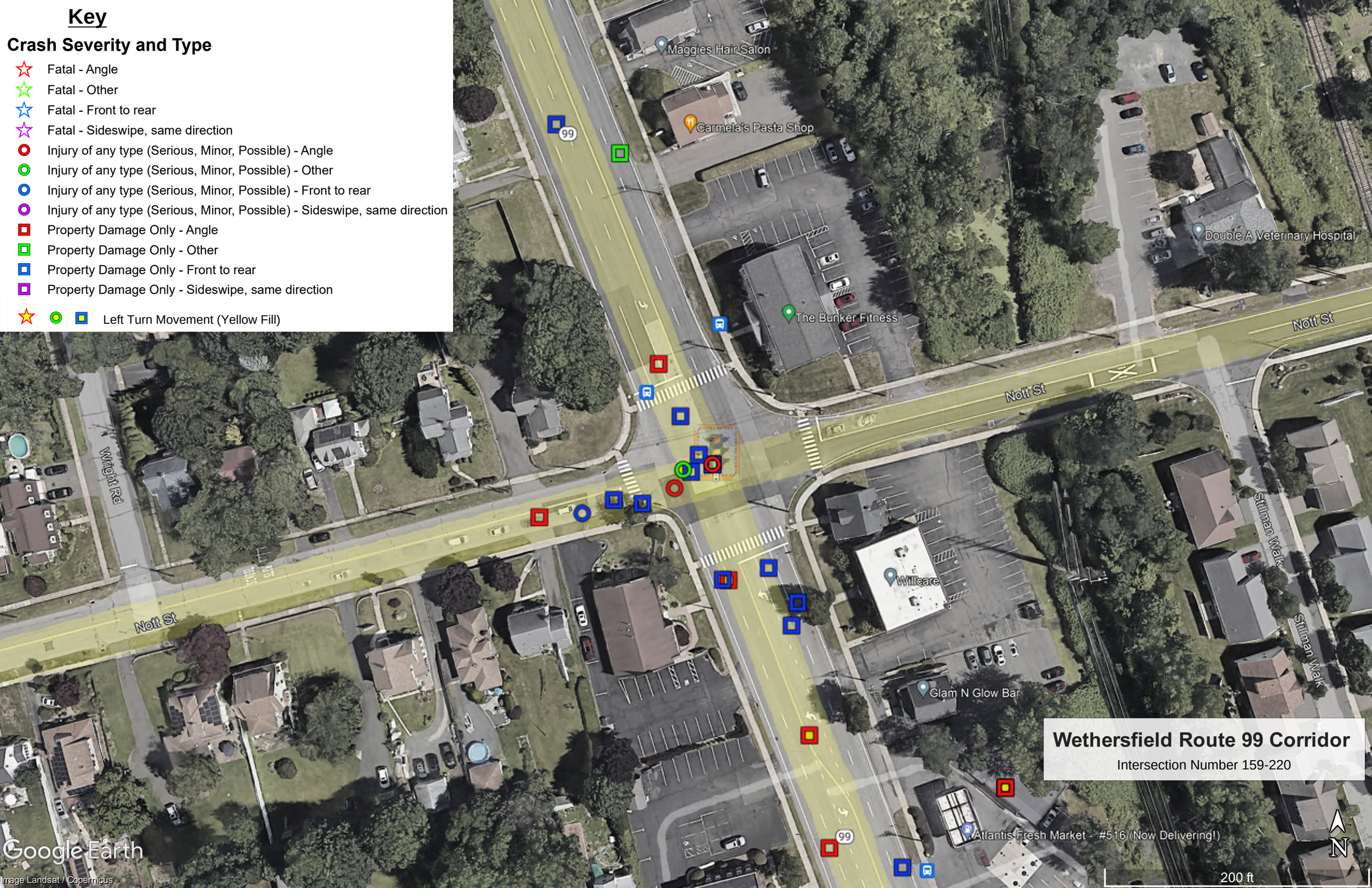
Intersection Number 159-209

Key

Crash Severity and Type

- Fatal - Angle
- Fatal - Other
- Fatal - Front to rear
- Fatal - Sideswipe, same direction
- Injury of any type (Serious, Minor, Possible) - Angle
- Injury of any type (Serious, Minor, Possible) - Other
- Injury of any type (Serious, Minor, Possible) - Front to rear
- Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
- Property Damage Only - Angle
- Property Damage Only - Other
- Property Damage Only - Front to rear
- Property Damage Only - Sideswipe, same direction

Left Turn Movement (Yellow Fill)



Wethersfield Route 99 Corridor

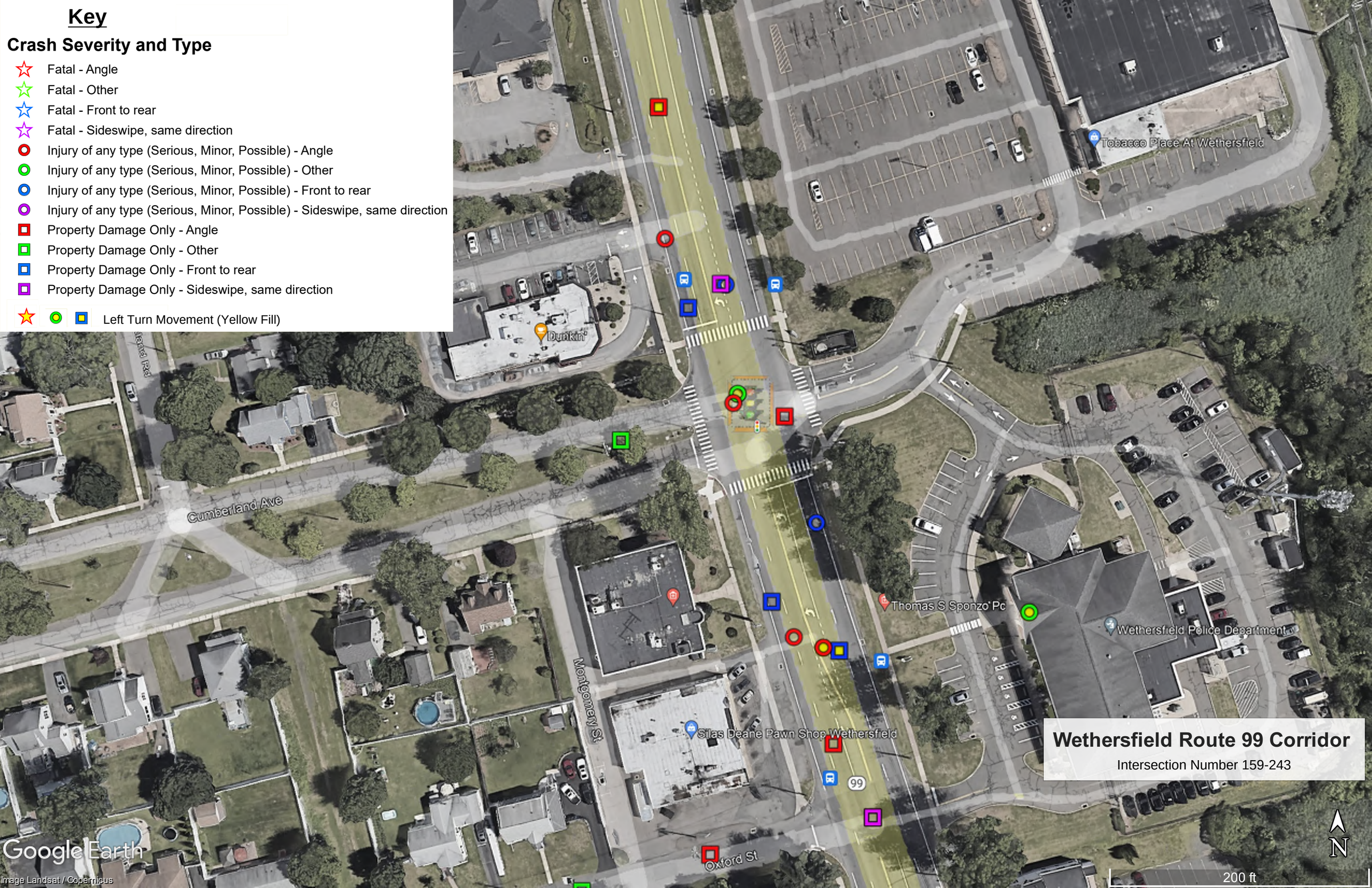
Intersection Number 159-220

Key

Crash Severity and Type

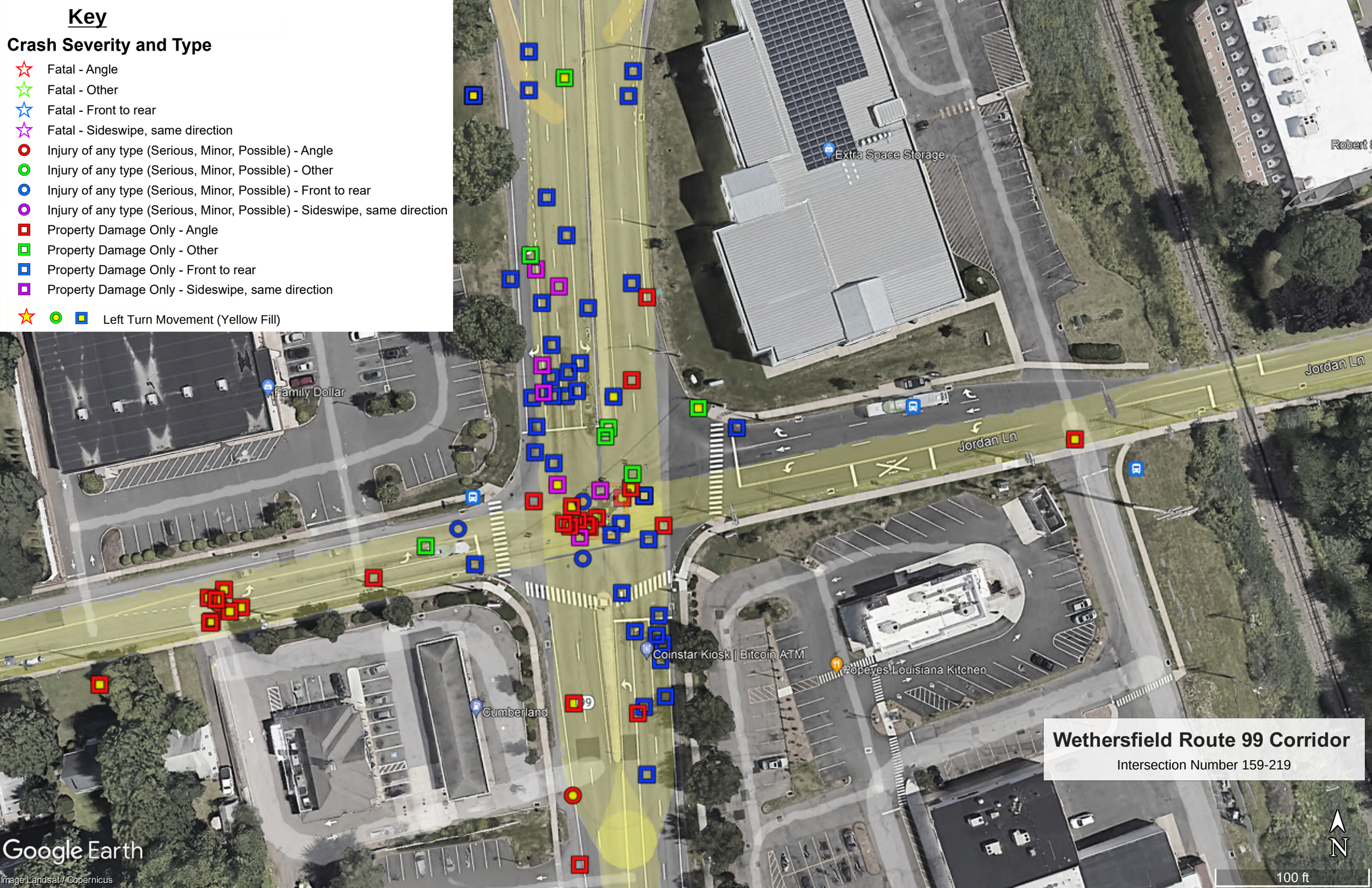
- Fatal - Angle
- Fatal - Other
- Fatal - Front to rear
- Fatal - Sideswipe, same direction
- Injury of any type (Serious, Minor, Possible) - Angle
- Injury of any type (Serious, Minor, Possible) - Other
- Injury of any type (Serious, Minor, Possible) - Front to rear
- Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
- Property Damage Only - Angle
- Property Damage Only - Other
- Property Damage Only - Front to rear
- Property Damage Only - Sideswipe, same direction

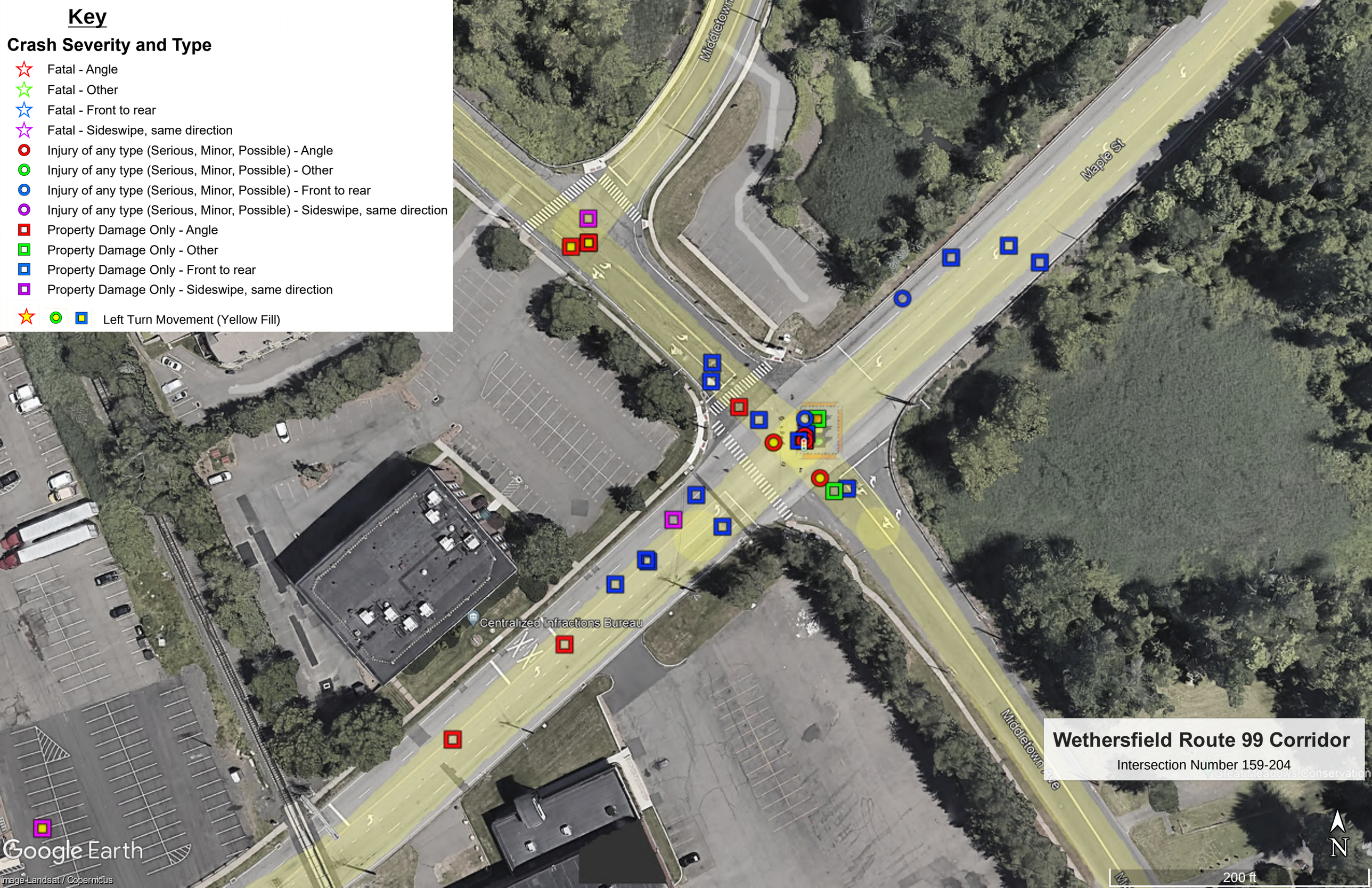
Left Turn Movement (Yellow Fill)

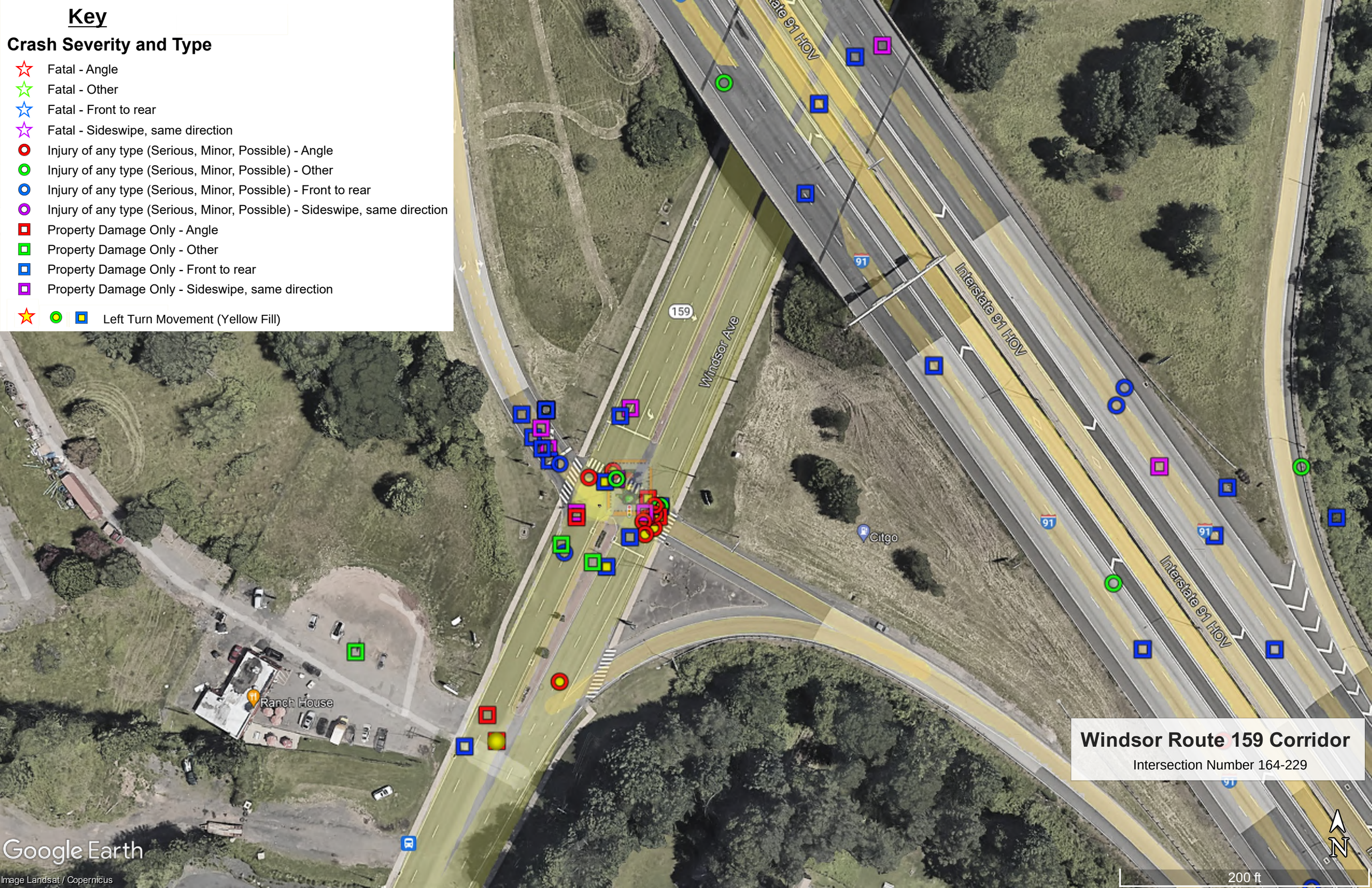


Wethersfield Route 99 Corridor

Intersection Number 159-243


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Extra Space Storage
Family Dollar
Jordan Ln
Jordan Ln
Coinstar Kiosk | Bitcoin ATM
Popeyes Louisiana Kitchen
Cumberland
Wethersfield Route 99 Corridor
Intersection Number 159-219
N
100 ft
Google Earth
Image Landsat / Copernicus


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Middletown Ave
Maple St
Centralized Infractions Bureau
Wethersfield Route 99 Corridor
Intersection Number 159-204
Great Meadows Conservation
N
200 ft
Google Earth
Image Landsat / Copernicus



Windsor Route 159 Corridor

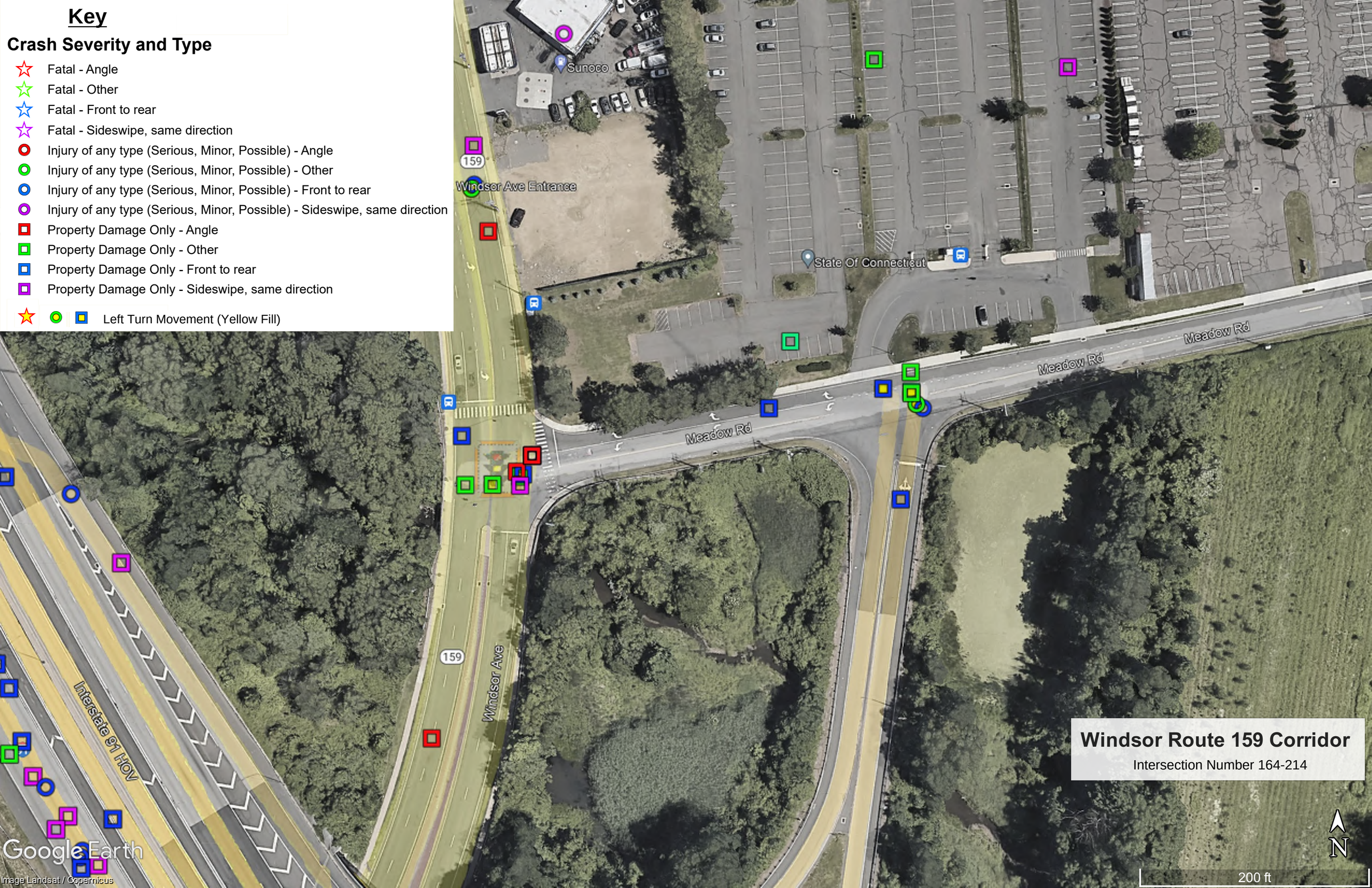
Intersection Number 164-229

Key

Crash Severity and Type

- Fatal - Angle
- Fatal - Other
- Fatal - Front to rear
- Fatal - Sideswipe, same direction
- Injury of any type (Serious, Minor, Possible) - Angle
- Injury of any type (Serious, Minor, Possible) - Other
- Injury of any type (Serious, Minor, Possible) - Front to rear
- Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
- Property Damage Only - Angle
- Property Damage Only - Other
- Property Damage Only - Front to rear
- Property Damage Only - Sideswipe, same direction

Left Turn Movement (Yellow Fill)



Windsor Route 159 Corridor

Intersection Number 164-214

Key

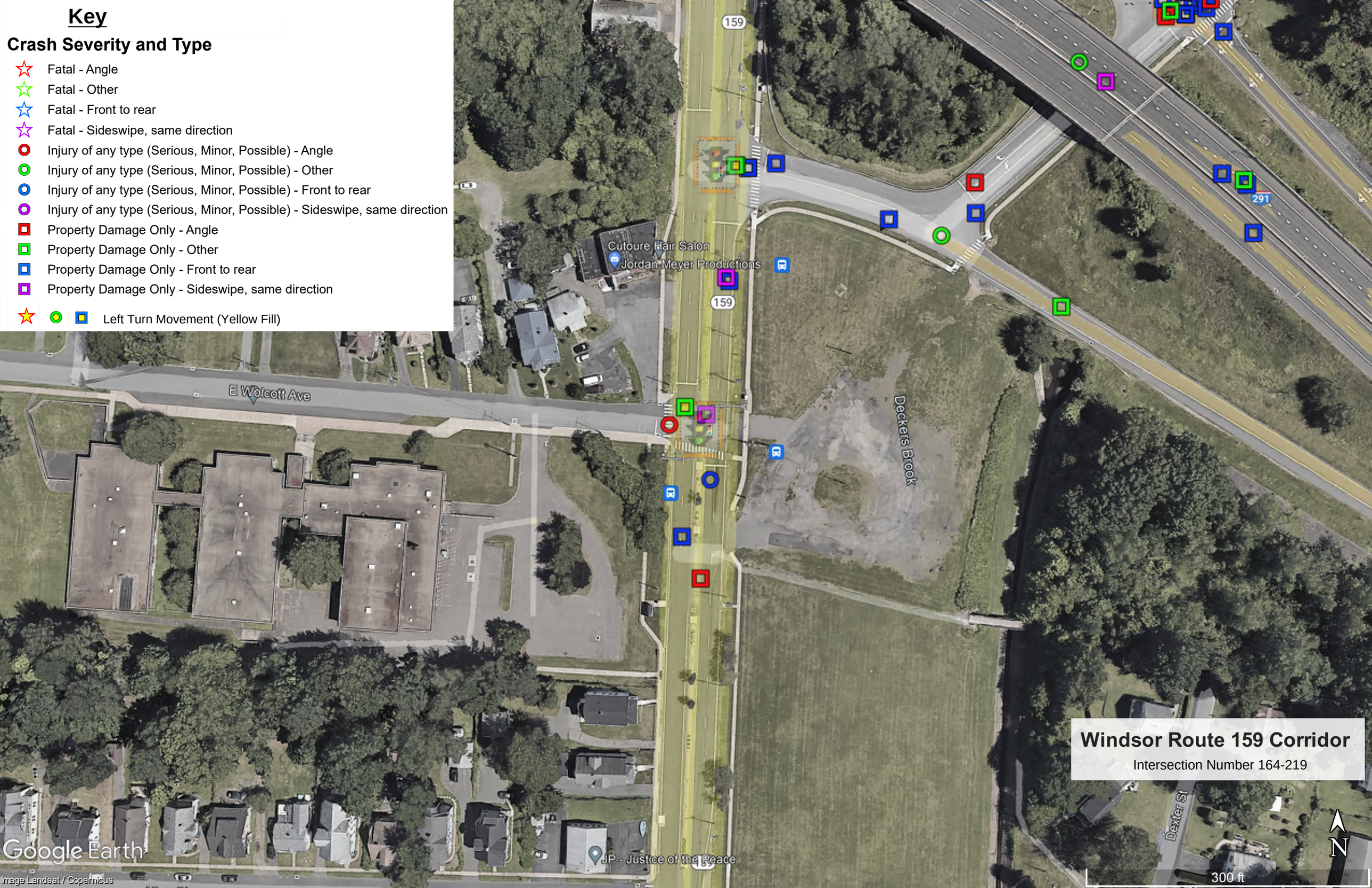
Crash Severity and Type

- Fatal - Angle
- Fatal - Other
- Fatal - Front to rear
- Fatal - Sideswipe, same direction
- Injury of any type (Serious, Minor, Possible) - Angle
- Injury of any type (Serious, Minor, Possible) - Other
- Injury of any type (Serious, Minor, Possible) - Front to rear
- Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
- Property Damage Only - Angle
- Property Damage Only - Other
- Property Damage Only - Front to rear
- Property Damage Only - Sideswipe, same direction

Left Turn Movement (Yellow Fill)

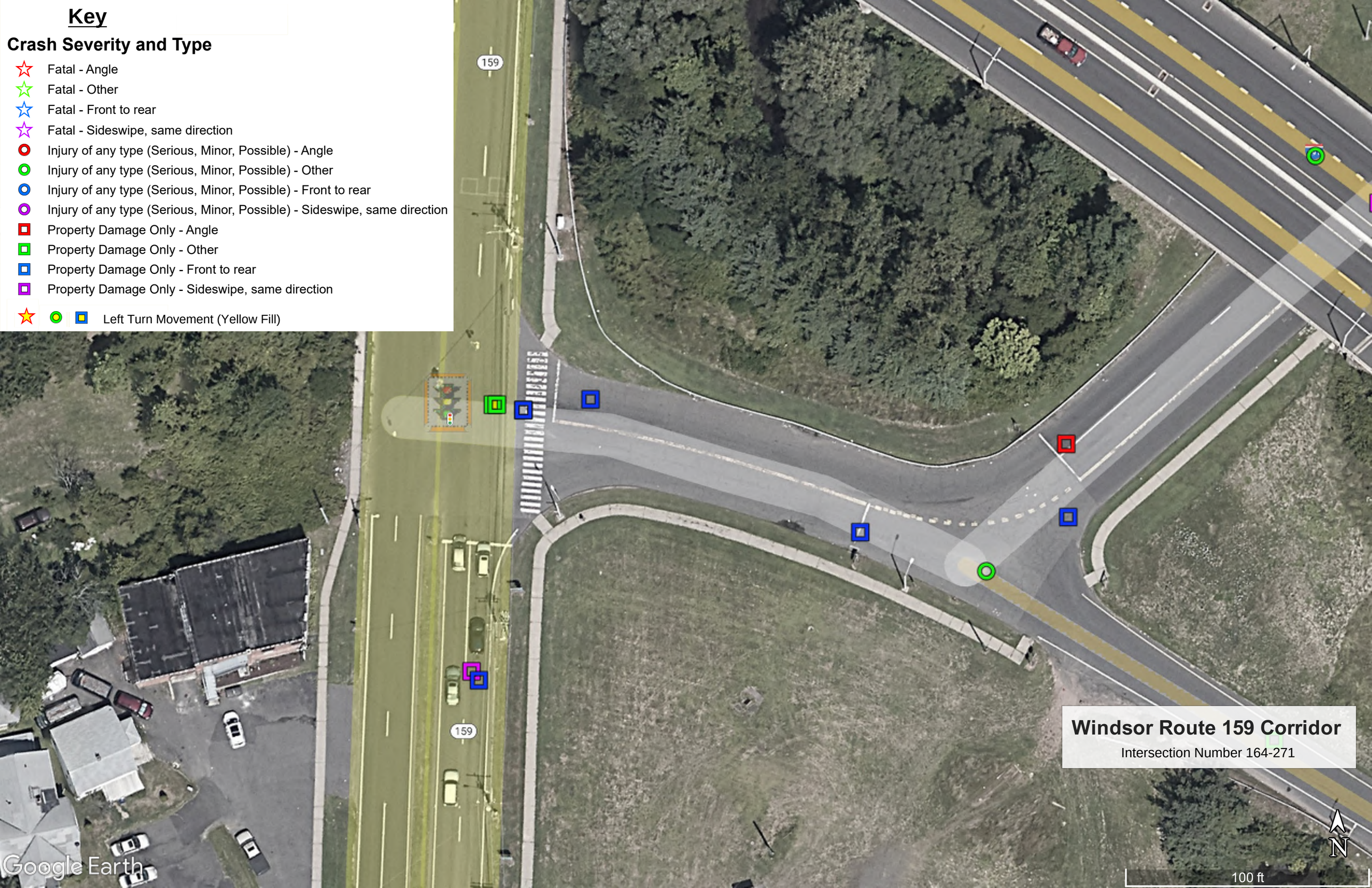
Windsor Route 159 Corridor

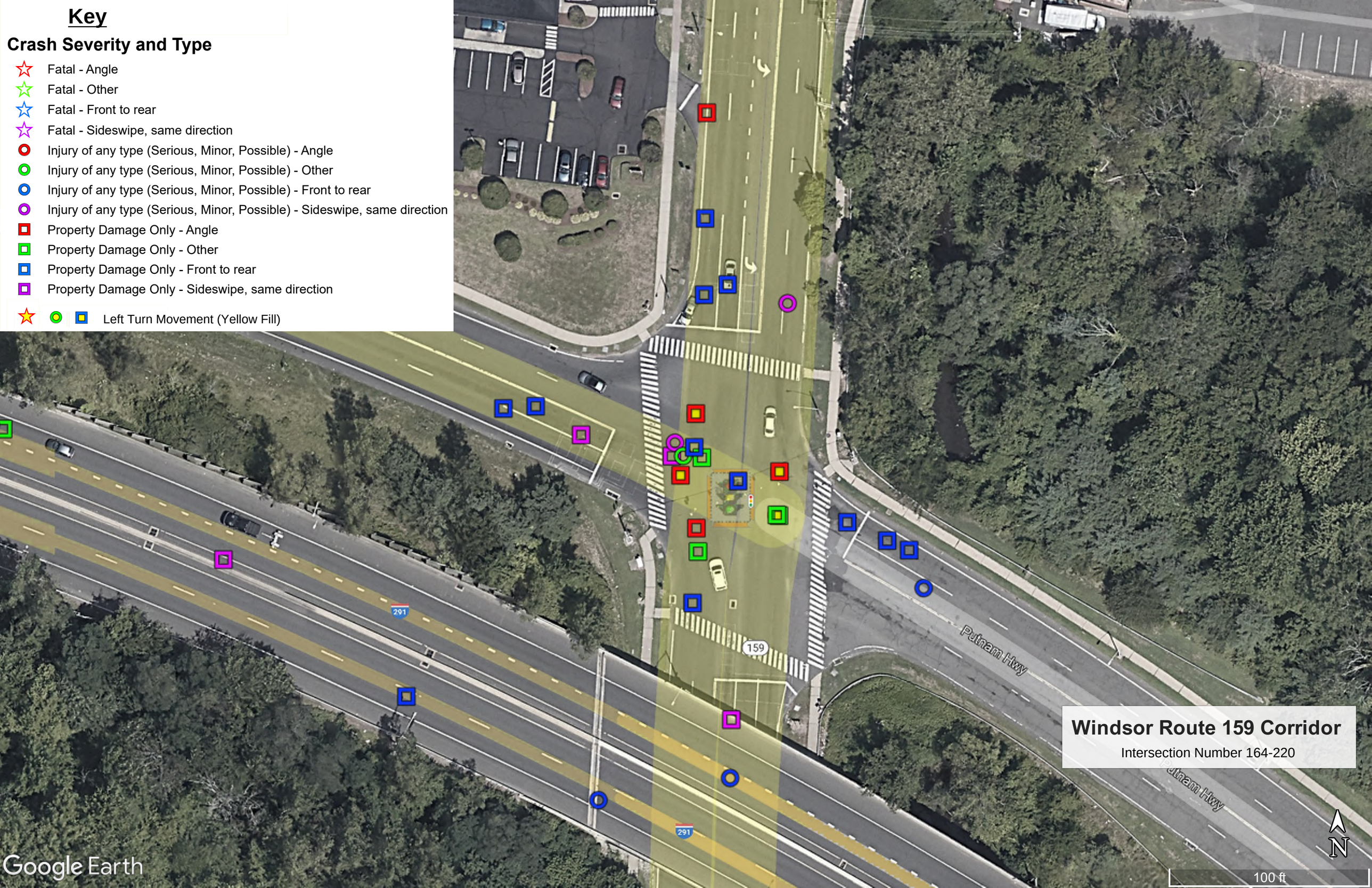
Intersection Number 164-218



Windsor Route 159 Corridor

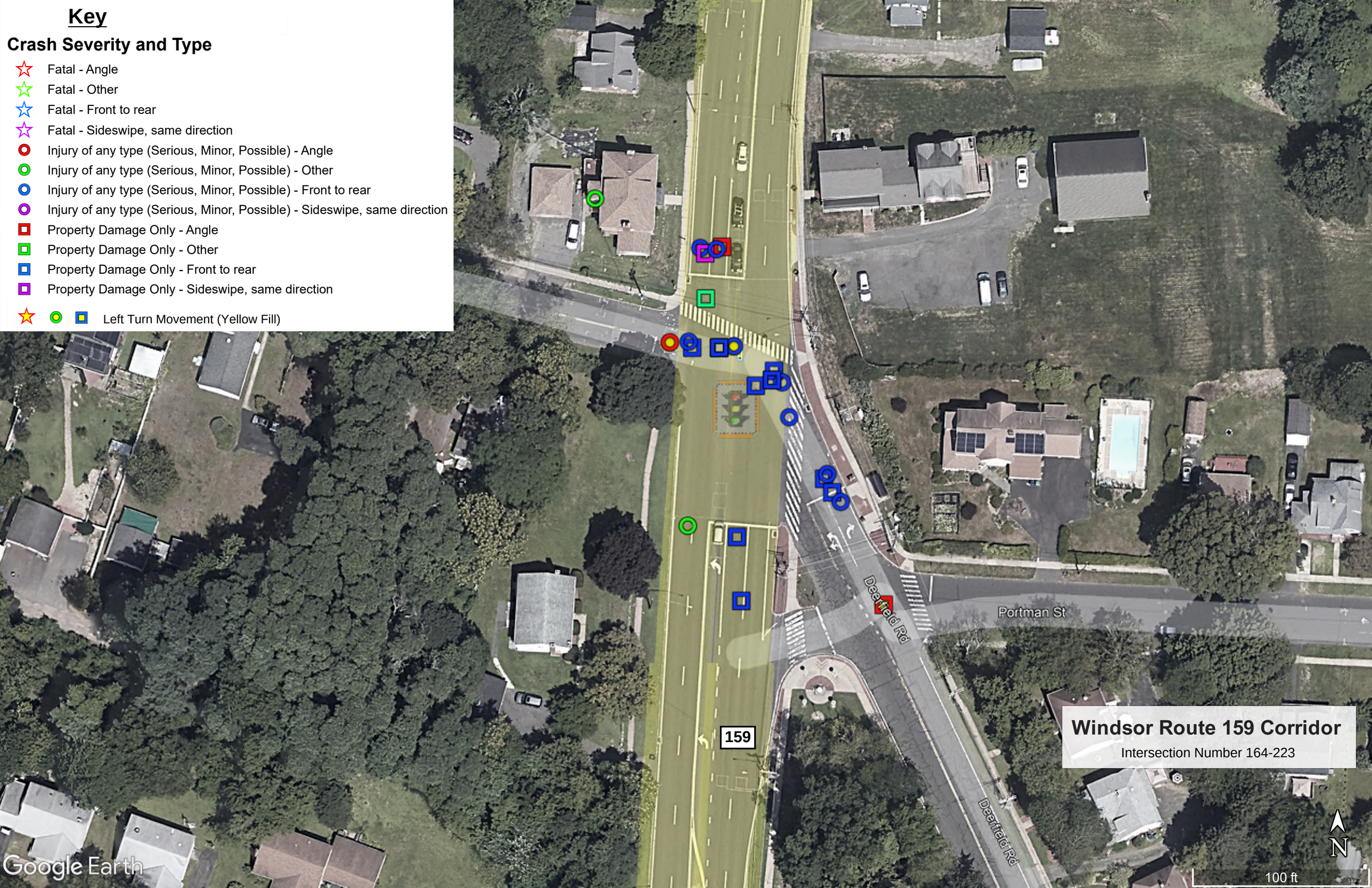
Intersection Number 164-219

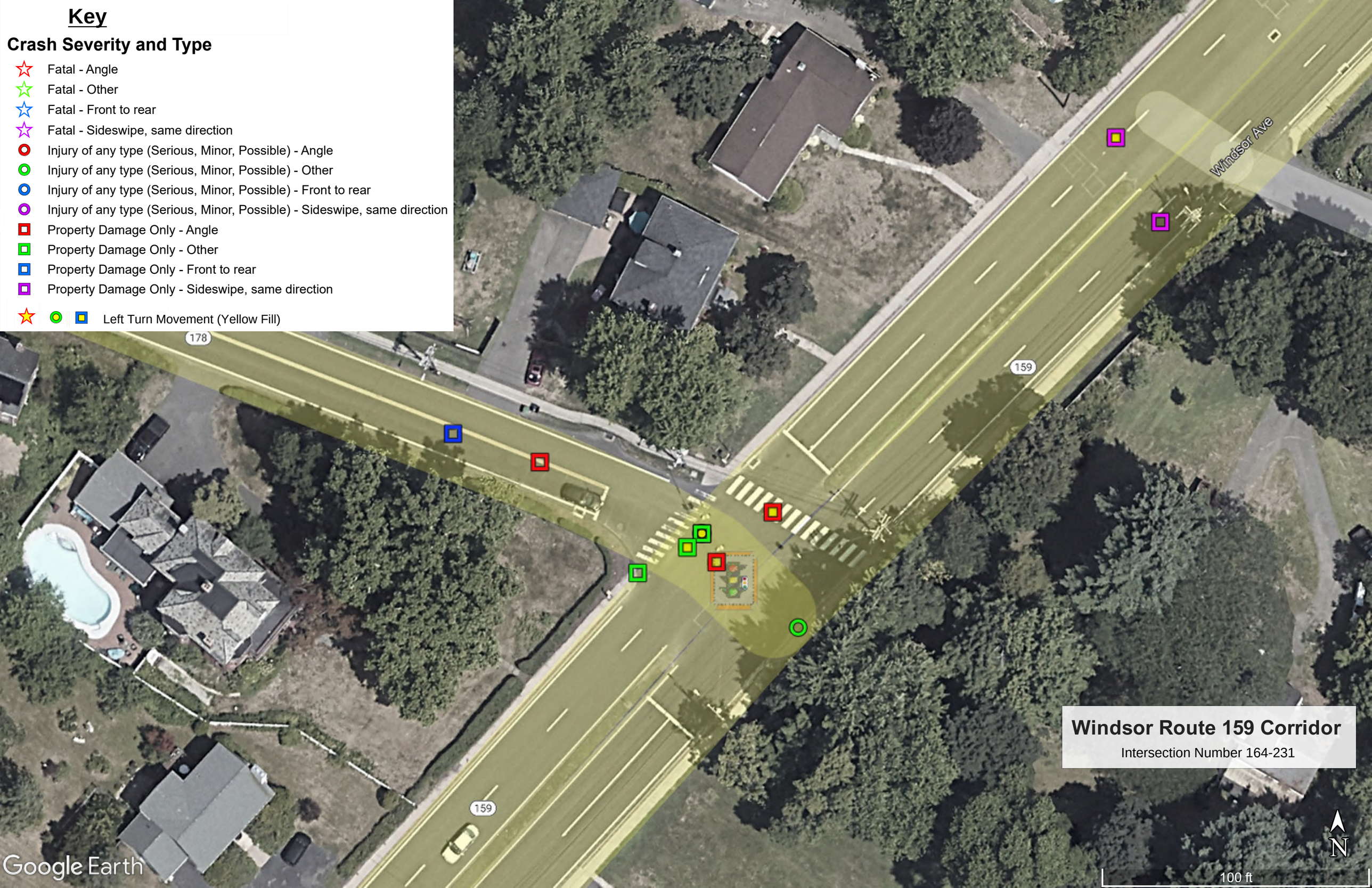

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
159
159
Google Earth
Windsor Route 159 Corridor
Intersection Number 164-271
N
100 ft


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Windsor Route 159 Corridor
Intersection Number 164-220
Putnam Hwy
Putnam Hwy
159
291
291
N
100 ft
Google Earth

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
159
Arrowbrook Rd
Arrowbrook Rd
Google Earth
Windsor Route 159 Corridor
Intersection Number 164-221
N
100 ft

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
159
159
Windsor Route 159 Corridor
Intersection Number 164-222
N
100 ft
Google Earth


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
159
Deerfield Rd
Portman St
Deerfield Rd
Windsor Route 159 Corridor
Intersection Number 164-223
N
100 ft
Google Earth



Windsor Route 159 Corridor

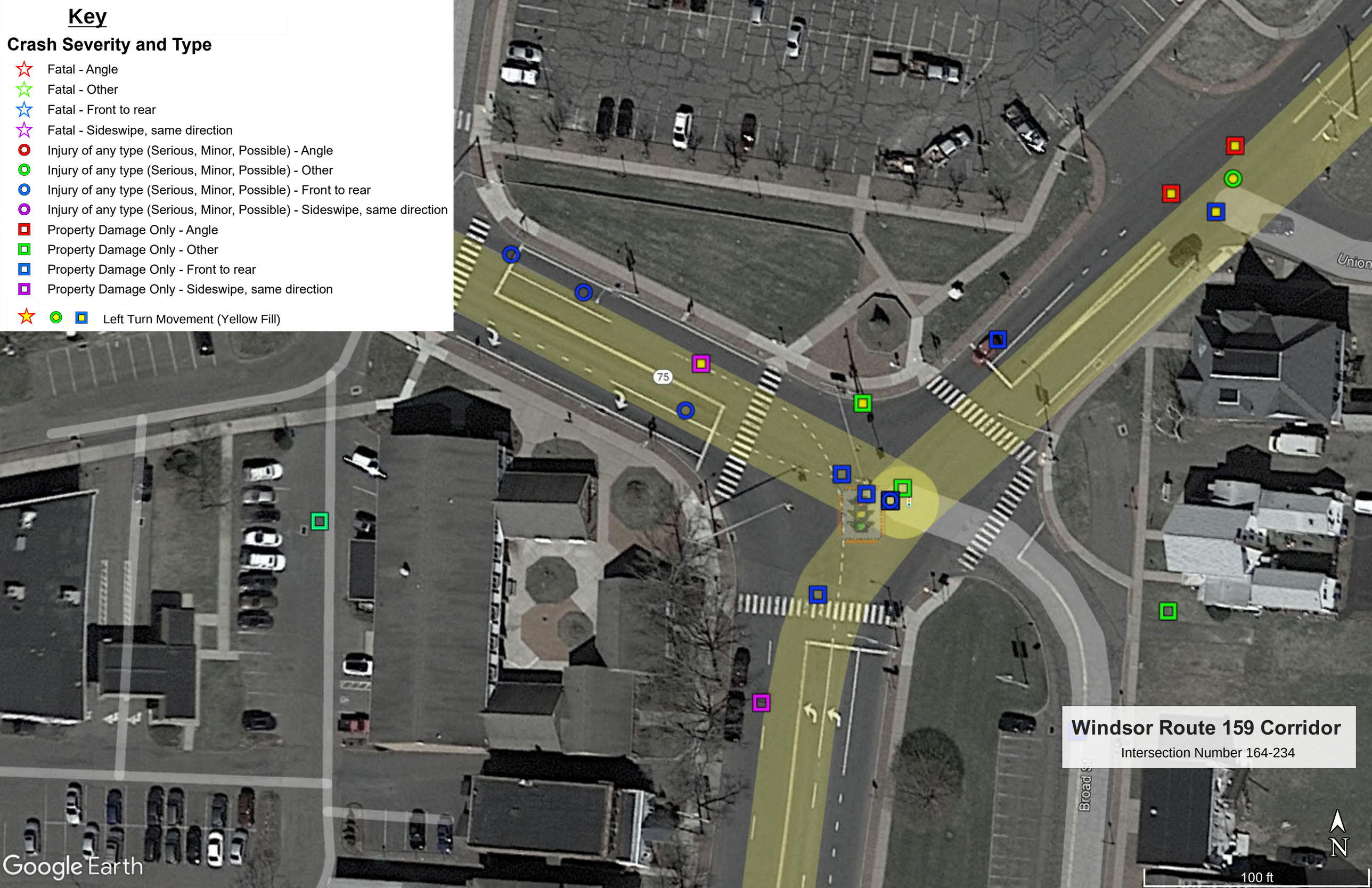
Intersection Number 164-231

Windsor Route 159 Corridor

Intersection Number 164-233

Windsor Route 159 Corridor

Intersection Number 164-211



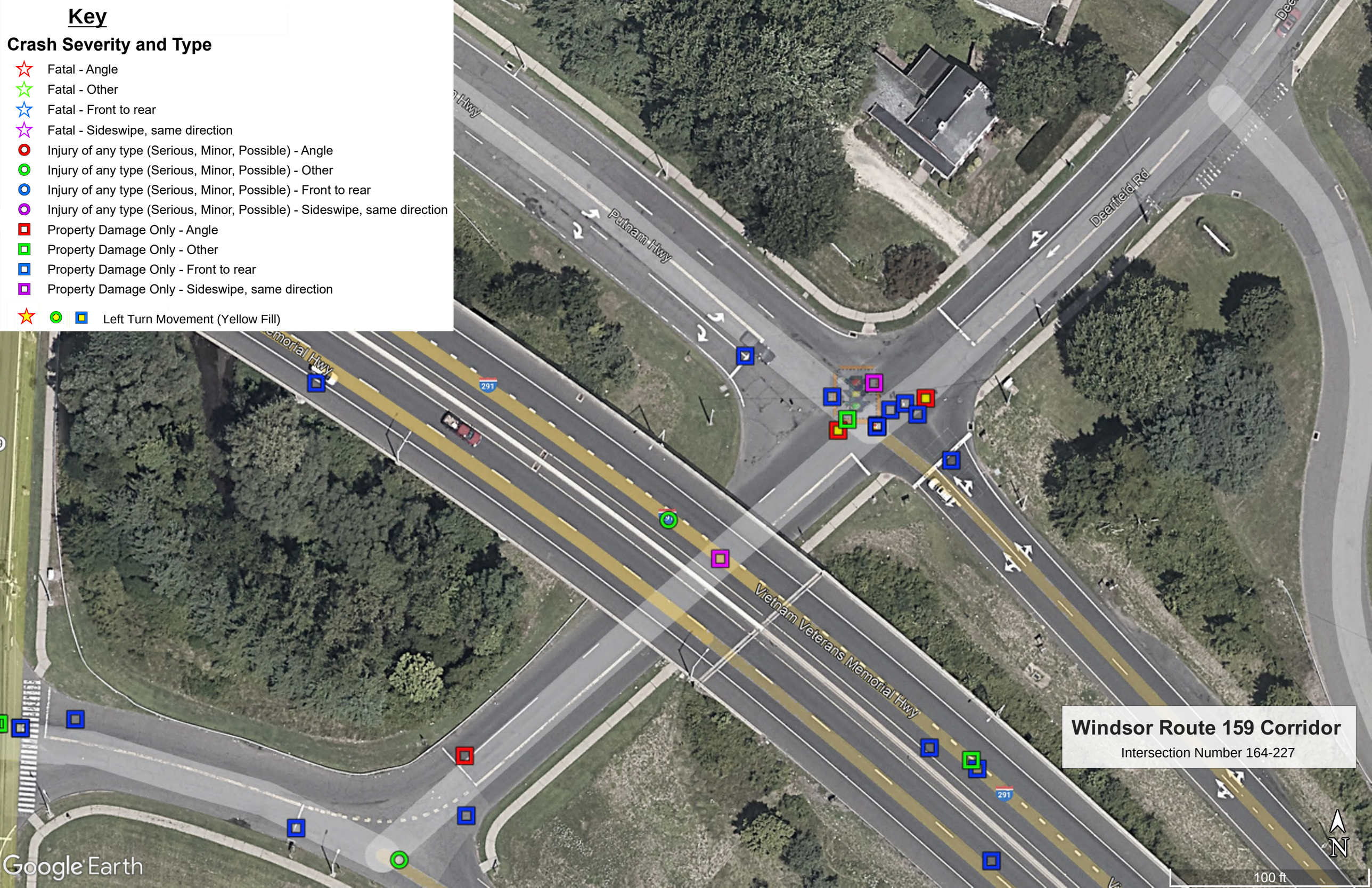
Windsor Route 159 Corridor

Intersection Number 164-234

Windsor Route 159 Corridor

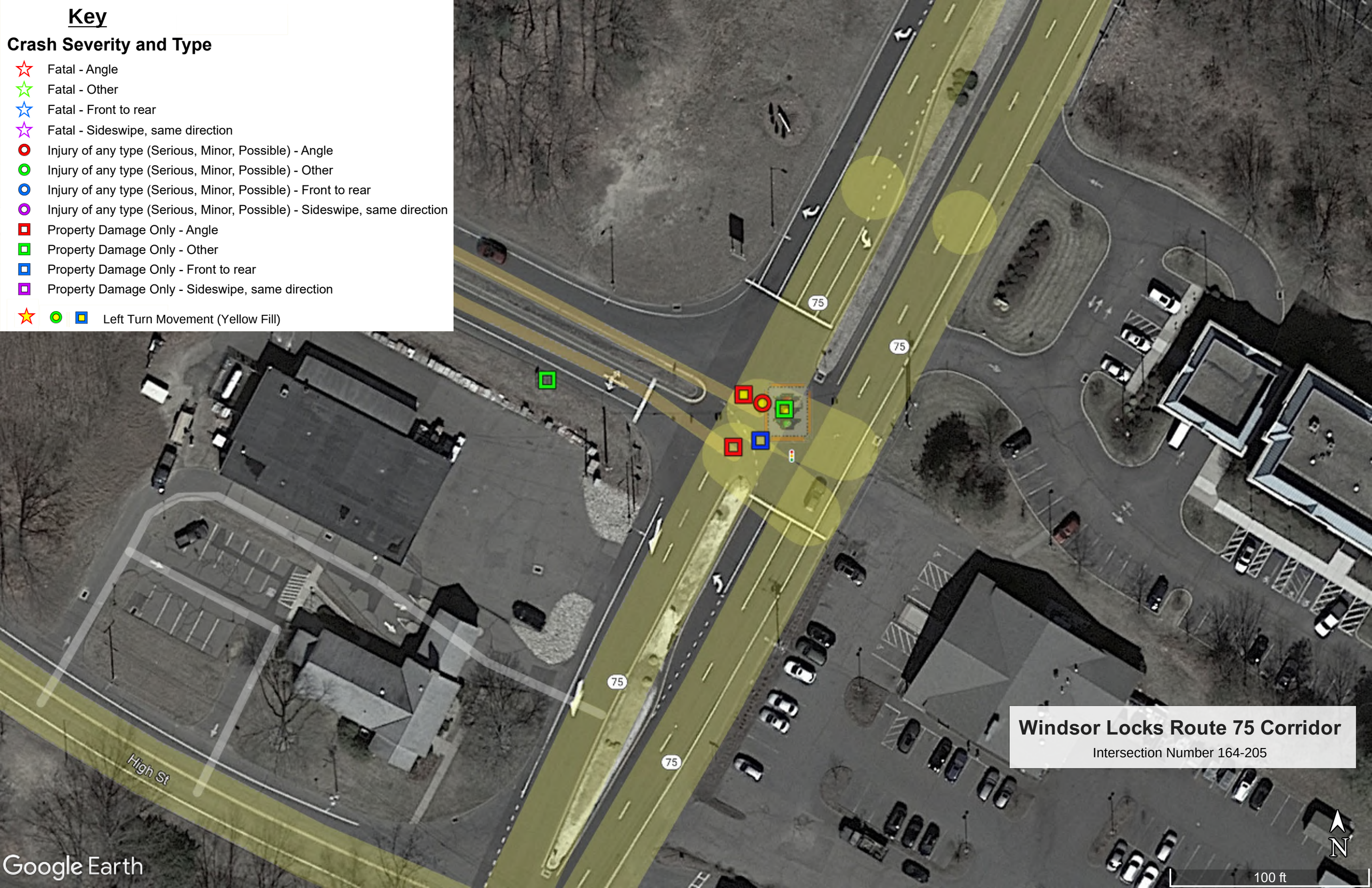
Intersection Number 164-255

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Windsor Route 159 Corridor
Intersection Number 164-244
East St
East St
Mack St
75
N
100 ft
Google Earth



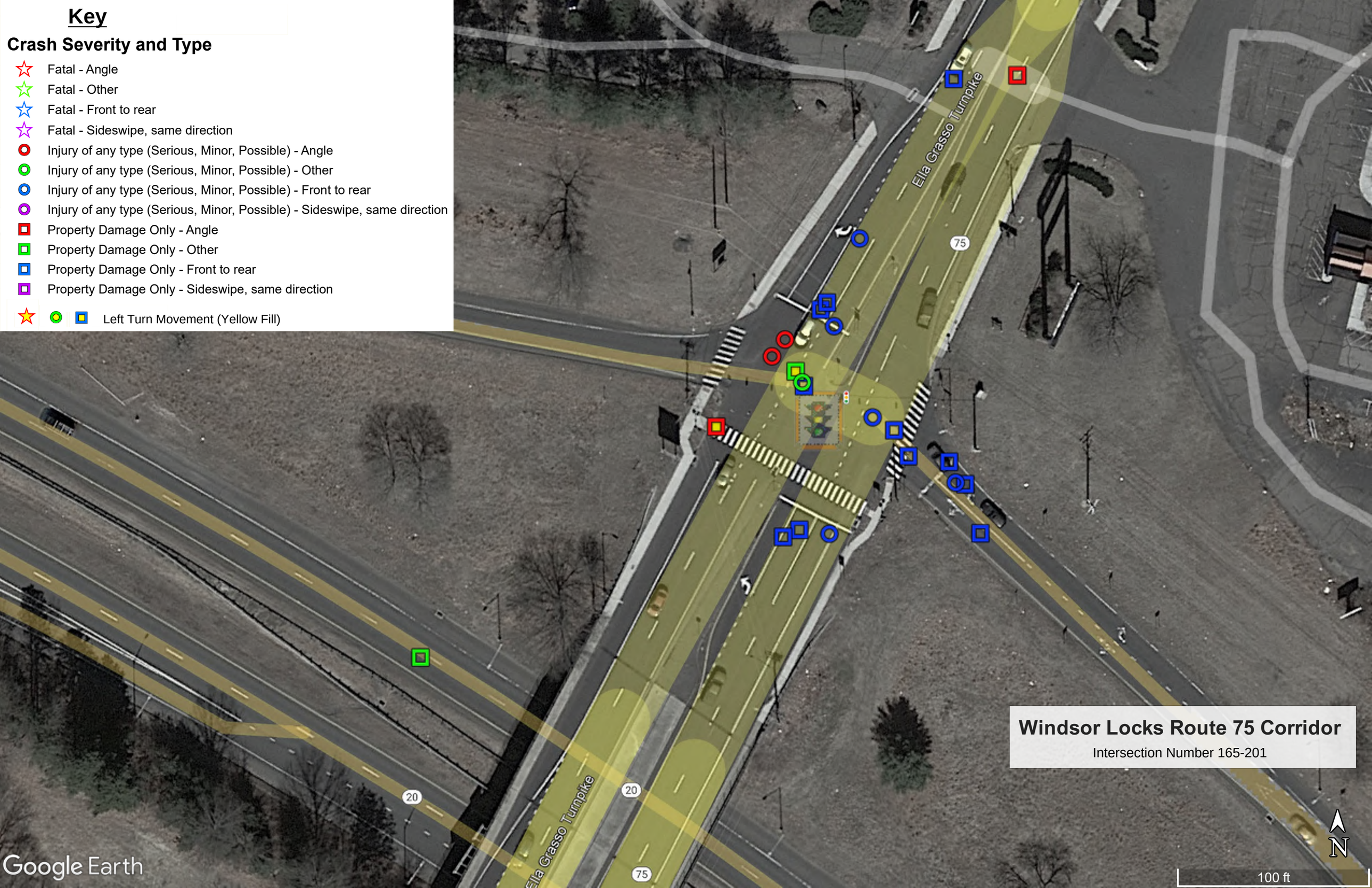
Windsor Route 159 Corridor

Intersection Number 164-227



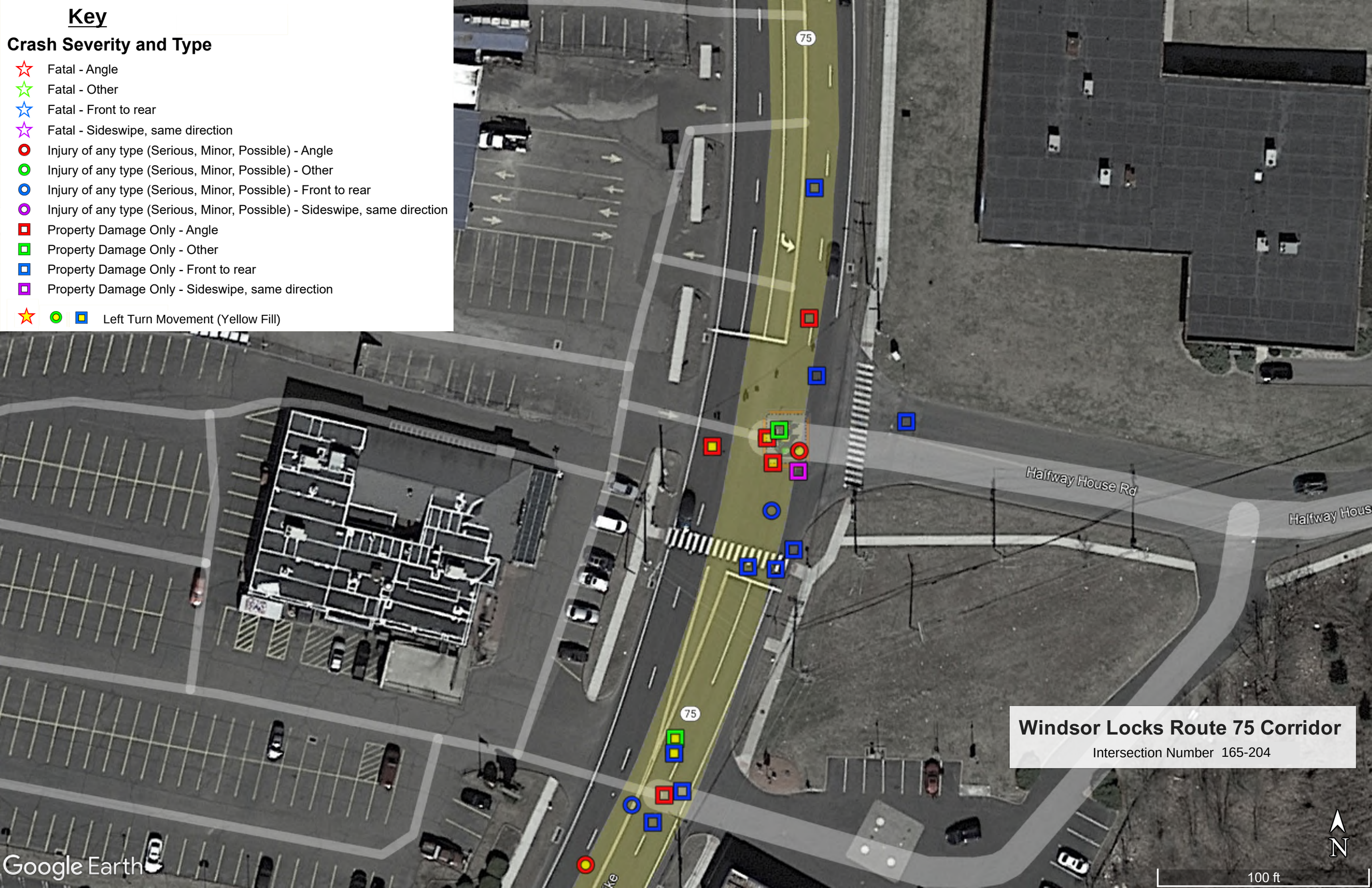
Windsor Locks Route 75 Corridor

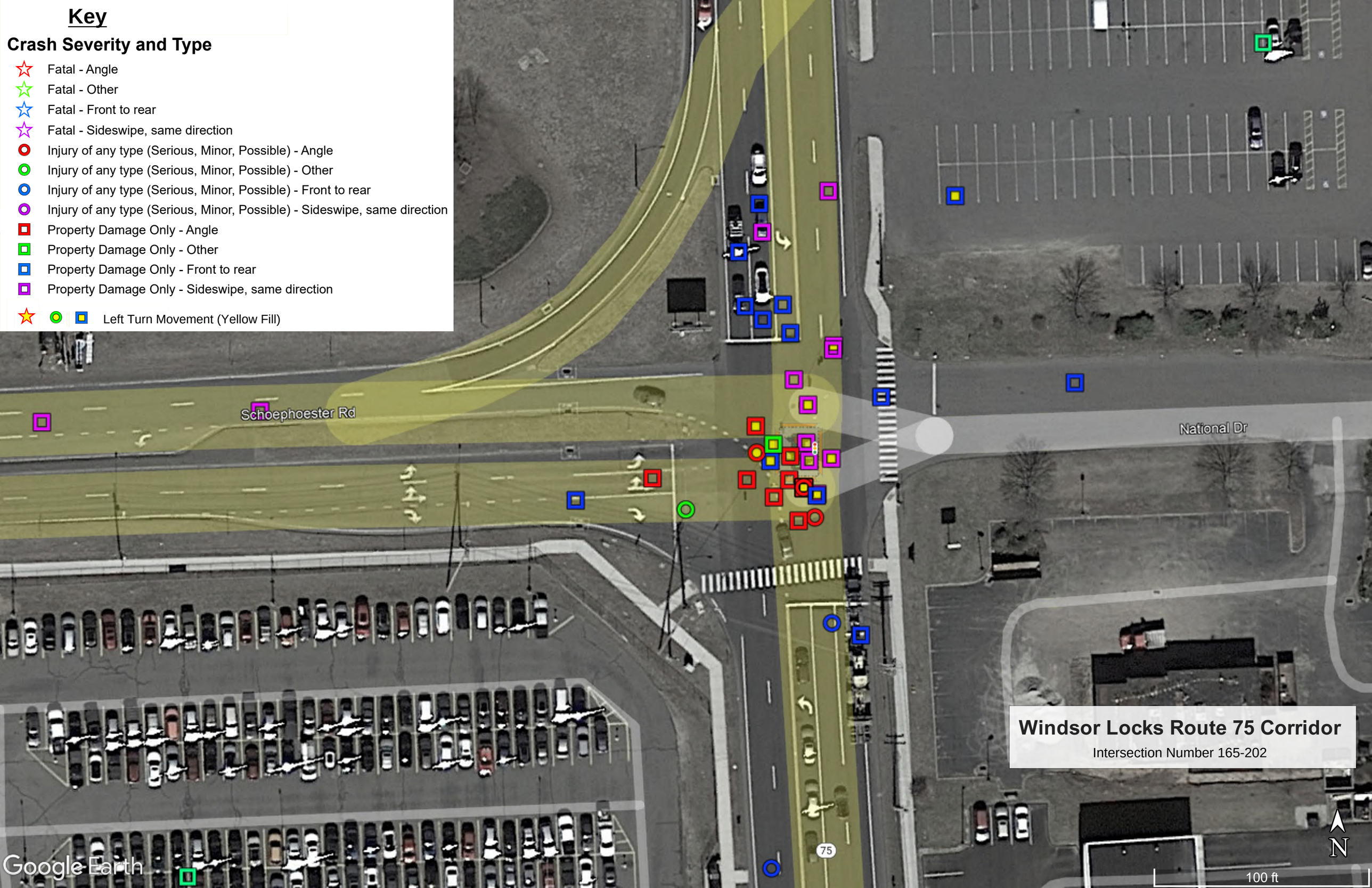
Intersection Number 164-205



Windsor Locks Route 75 Corridor

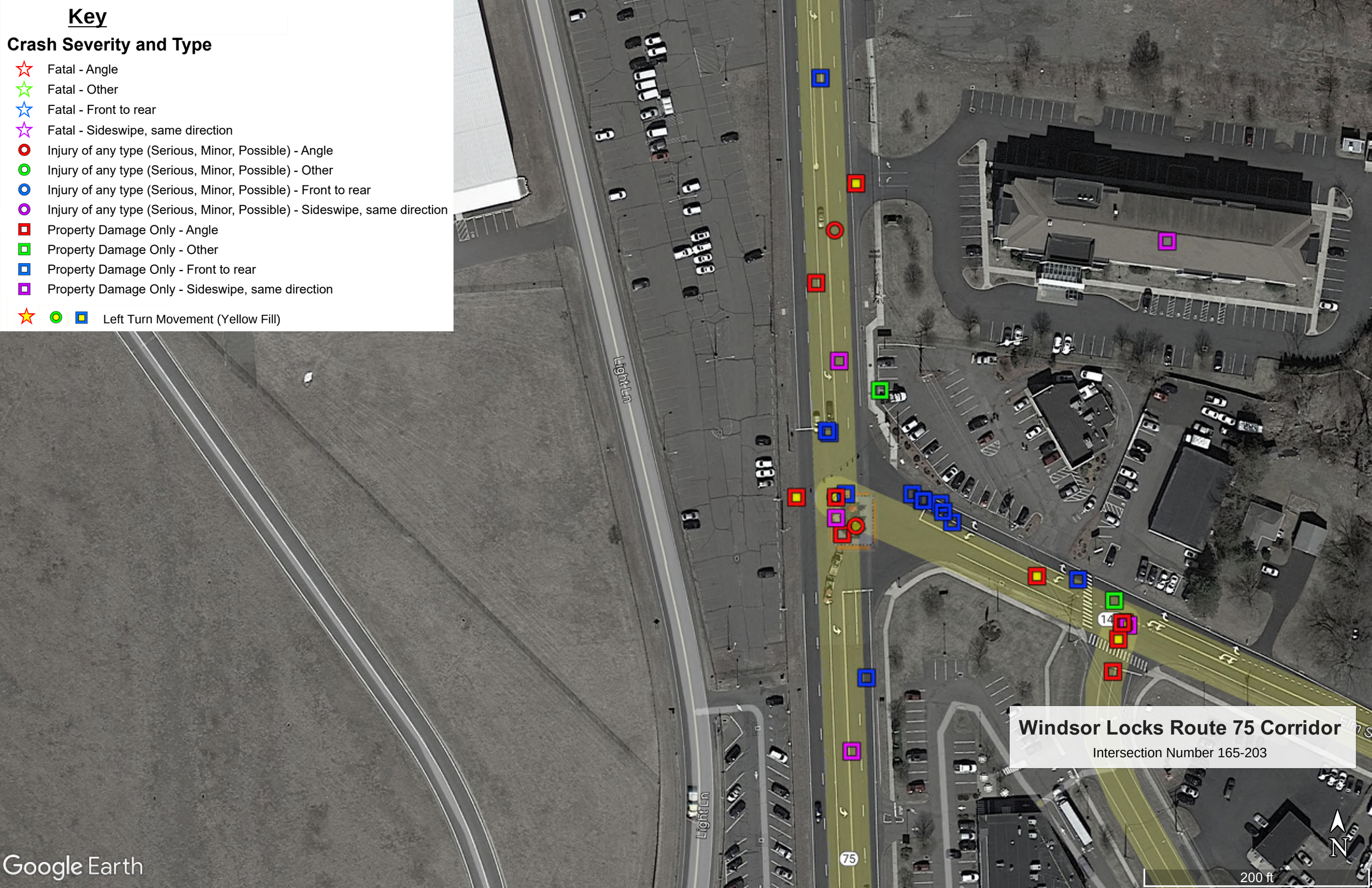
Intersection Number 165-201

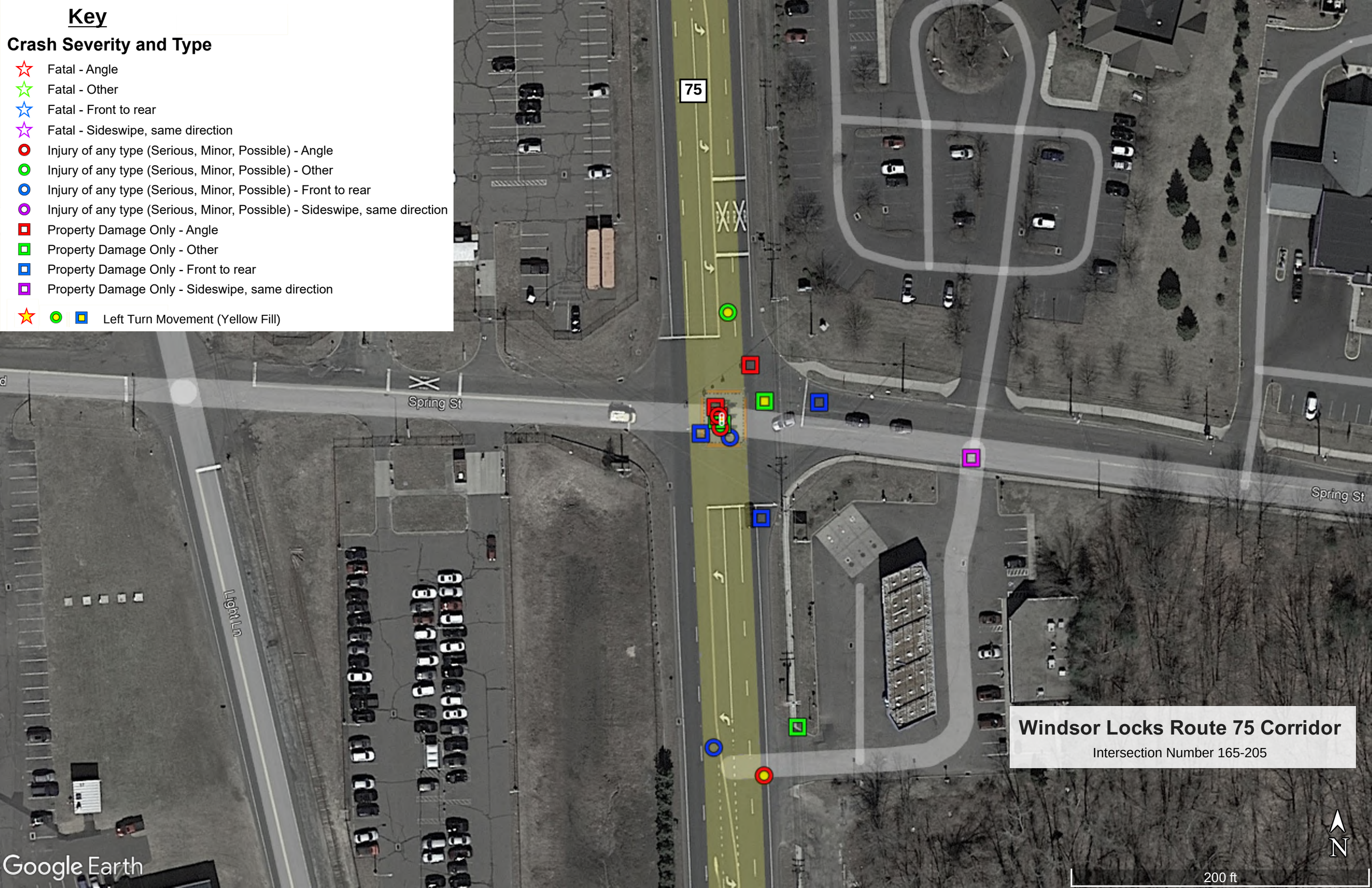

Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
75
Halfway House Rd
Halfway Hous
Windsor Locks Route 75 Corridor
Intersection Number 165-204
N
100 ft
Google Earth



Windsor Locks Route 75 Corridor

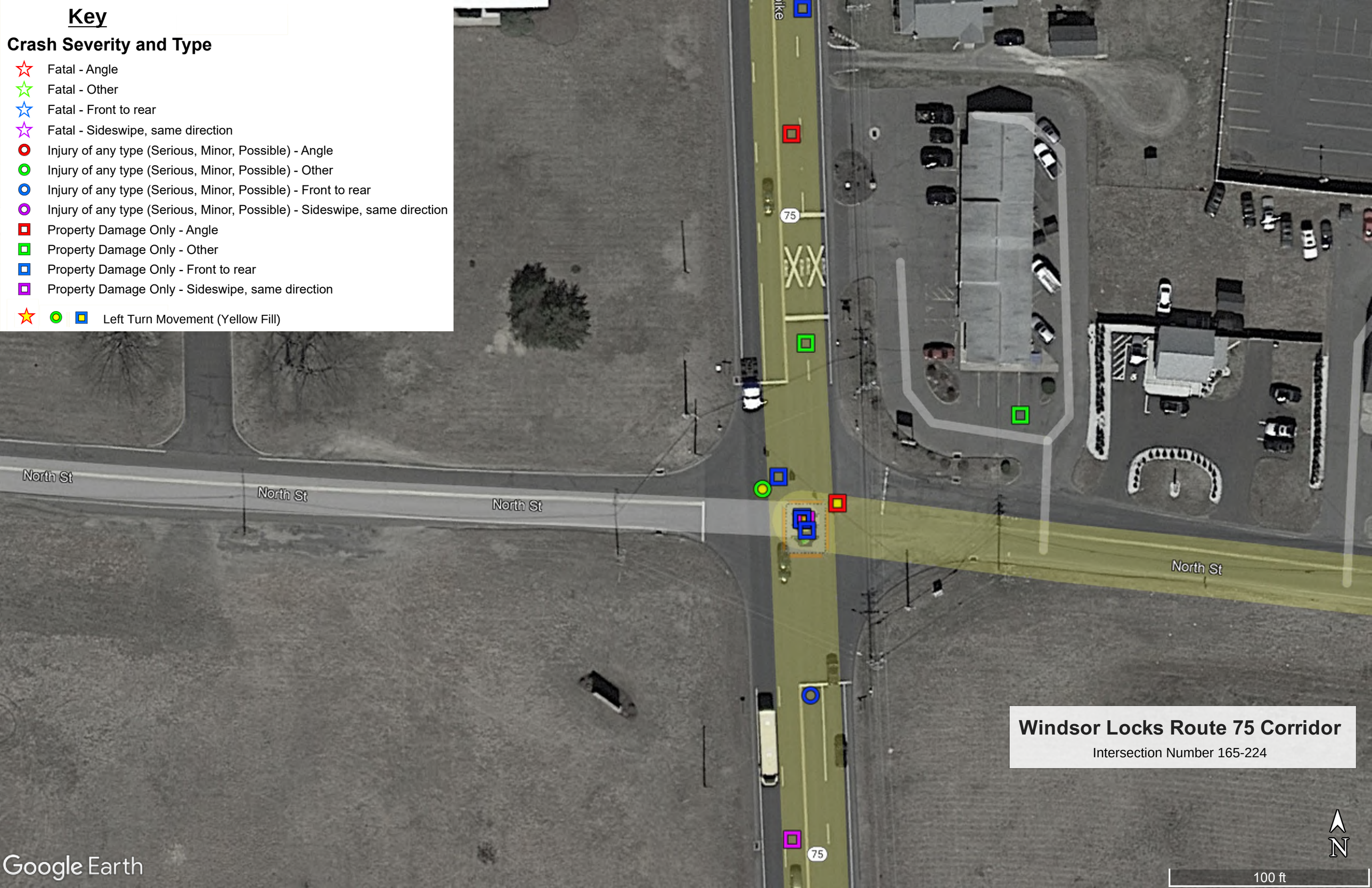
Intersection Number 165-202


Key
Crash Severity and Type
Fatal - Angle
Fatal - Other
Fatal - Front to rear
Fatal - Sideswipe, same direction
Injury of any type (Serious, Minor, Possible) - Angle
Injury of any type (Serious, Minor, Possible) - Other
Injury of any type (Serious, Minor, Possible) - Front to rear
Injury of any type (Serious, Minor, Possible) - Sideswipe, same direction
Property Damage Only - Angle
Property Damage Only - Other
Property Damage Only - Front to rear
Property Damage Only - Sideswipe, same direction
Left Turn Movement (Yellow Fill)
Light Ln
Light Ln
75
Windsor Locks Route 75 Corridor
Intersection Number 165-203
N
200 ft
Google Earth



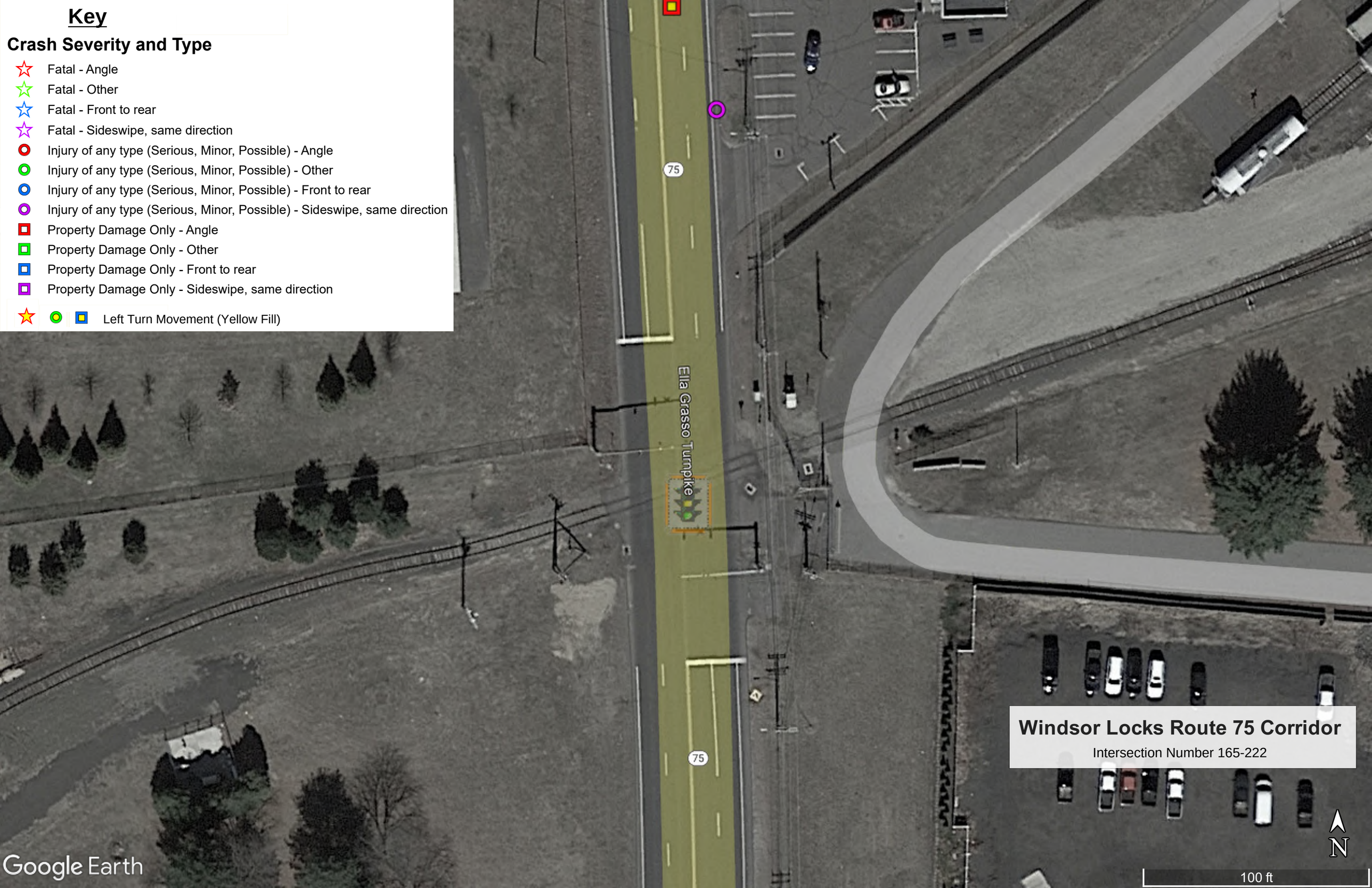
Windsor Locks Route 75 Corridor

Intersection Number 165-205



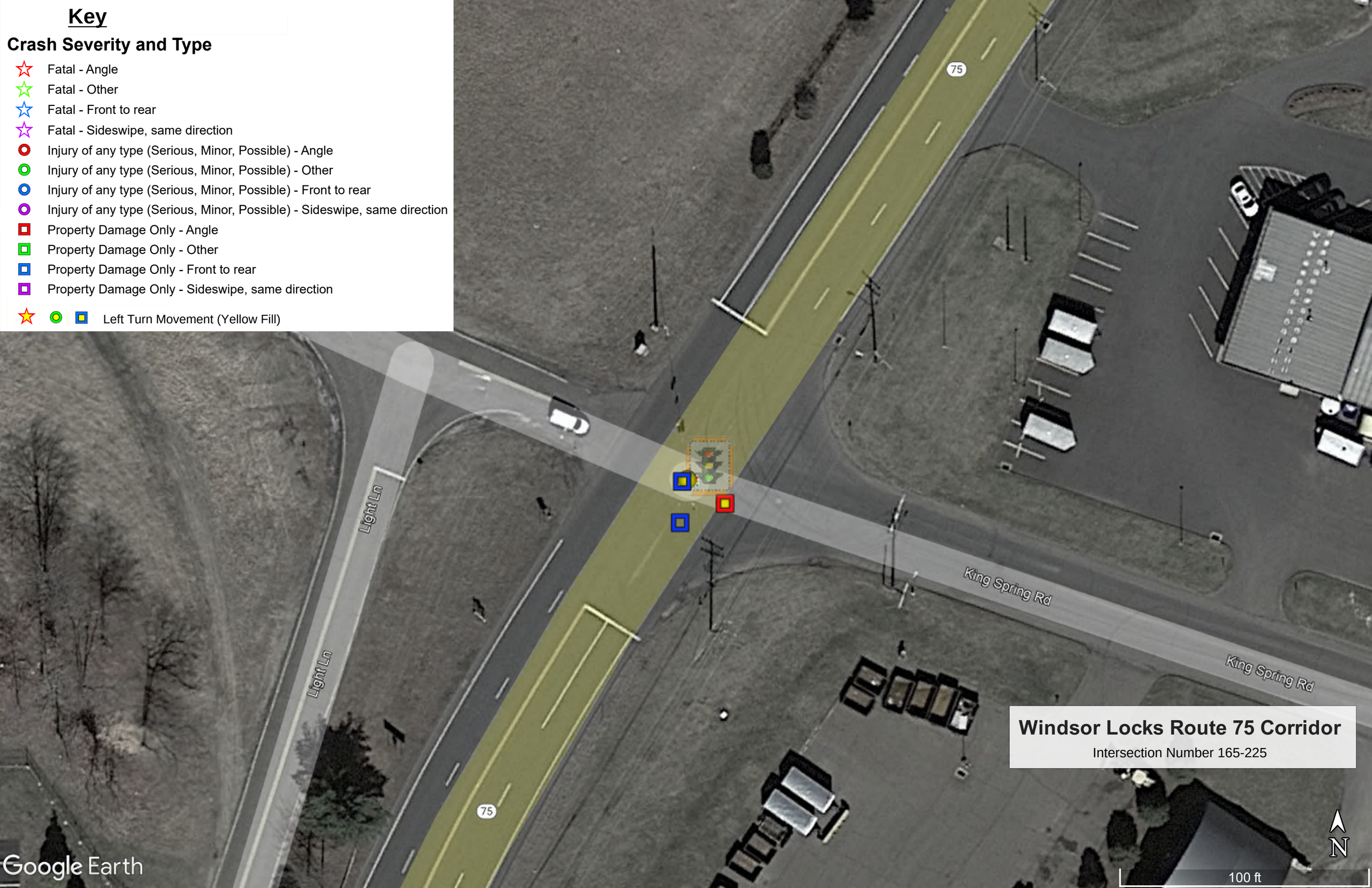
Windsor Locks Route 75 Corridor

Intersection Number 165-224



Windsor Locks Route 75 Corridor

Intersection Number 165-222



Windsor Locks Route 75 Corridor

Intersection Number 165-225

Appendix E
Phase 2 User Costs Analysis

Avon/Simsbury, Route 44, Route 202 & Route 10
Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	EB	-80	-1	1200	3%	97%	1.14	1.5	-26.67	$ 25.67	$ 725.42	23.200	204.2	1200
	WB	-77	-3	800	3%	97%	1.14	1.5	-17.11	$ 16.47	$ 465.48	14.887	131.0	2400
MID	EB	-26	-0.67	1000	3%	97%	1.14	1.5	-7.22	$ 6.95	$ 196.47	6.283	55.3	670
	WB	25	0.67	1000	3%	97%	1.14	1.5	6.94	$ (6.69)	$ (188.91)	-6.042	-53.2	-670
PM	EB	-61	-1.33	800	3%	97%	1.14	1.5	-13.56	$ 13.05	$ 368.76	11.793	103.8	1064
	WB	-74	0	1200	3%	97%	1.14	1.5	-24.67	$ 23.75	$ 671.02	21.460	188.8	0
									TOTALS PER DAY:	**-82.29**	**$ 79.20**	**$ 2,238.24**	**71.581**	**629.9**	**4664**

ΔTT= Change in Travel Time

	Yearly Totals	
21,395	Delay Savings (Vehicle Hours)	(say 21400)
$ 20,592	Travel Time Savings (Truck)	
$ 581,942	Travel Time Savings (Car)	
+ $ 65,325	Fuel Savings	
$ 667,859	Combined Savings	(say 668000)
18,611	Reduction in Fuel Use (Gallons)	(say 18600)
163,774	Reduction in CO_2 Emission (kg)	(say 164000)
1,212,640	Savings Number of Stops	(say 1210000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87\ \text{gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4\ \text{lbs}}{\text{gal}}$$

Notes and References:

*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp

*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf

Table 1 on Page 2 (2018)

*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0

*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.

*Annual Calculations based on 260 commuter days per year.

*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Berlin, Route 372

Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	EB	-57	-1.67	300	3%	97%	1.14	1.5	-4.75	$ 4.57	$ 129.22	4.133	36.4	501
	WB	7	-0.42	250	3%	97%	1.14	1.5	0.49	$ (0.47)	$ (13.22)	-0.423	-3.7	105
MID	EB	-48	-0.92	350	3%	97%	1.14	1.5	-4.67	$ 4.49	$ 126.95	4.060	35.7	322
	WB	-56	-1.83	350	3%	97%	1.14	1.5	-5.44	$ 5.24	$ 148.11	4.737	41.7	641
PM	EB	0	0.33	350	3%	97%	1.14	1.5	0.00	$ -	$ -	0.000	0.0	-116
	WB	-141	-2.08	400	3%	97%	1.14	1.5	-15.67	$ 15.08	$ 426.19	13.630	119.9	832
									TOTALS PER DAY:	**-30.04**	**$ 28.91**	**$ 817.25**	**26.137**	**230.0**	**2285**

ΔTT= Change in Travel Time

Yearly Totals		
7,810	Delay Savings (Vehicle Hours)	(say 7800)
$ 7,517	Travel Time Savings (Truck)	
$ 212,485	Travel Time Savings (Car)	
+ $ 23,853	Fuel Savings	
$ 243,854	Combined Savings	(say 244000)
6,796	Reduction in Fuel Use (Gallons)	(say 6800)
59,800	Reduction in CO_2 Emission (kg)	(say 60000)
594,100	Savings Number of Stops	(say 590000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87 \text{ gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4 \text{ lbs}}{\text{gal}}$$

Notes and References:

*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp

*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf
Table 1 on Page 2 (2018)

*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0

*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.

*Annual Calculations based on 260 commuter days per year.

*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Bloomfield, Route 218
Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	EB	6	0.6	850	3%	97%	1.14	1.5	1.42	$ (1.36)	$ (38.54)	-1.233	-10.8	-510
	WB	-23	-0.3	1100	3%	97%	1.14	1.5	-7.03	$ 6.77	$ 191.18	6.114	53.8	330
MID	EB	19	0.8	700	3%	97%	1.14	1.5	3.69	$ (3.56)	$ (100.50)	-3.214	-28.3	-560
	WB	-15	0	650	3%	97%	1.14	1.5	-2.71	$ 2.61	$ 73.68	2.356	20.7	0
PM	EB	8	1	1100	3%	97%	1.14	1.5	2.44	$ (2.35)	$ (66.50)	-2.127	-18.7	-1100
	WB	-61	-1.3	1000	3%	97%	1.14	1.5	-16.94	$ 16.31	$ 460.95	14.742	129.7	1300
									TOTALS PER DAY:	**-19.13**	**$ 18.42**	**$ 520.27**	**16.638**	**146.4**	**-540**

ΔTT= Change Travel Time

	Yearly Totals	
	4,974 Delay Savings (Vehicle Hours)	(say 5000)
	$ 4,789 Travel Time Savings (Truck)	
	$ 135,270 Travel Time Savings (Car)	
+	**$ 15,184** Fuel Savings	
	$ 155,243 Combined Savings	(say 155000)
	4,326 Reduction in Fuel Use (Gallons)	(say 4300)
	38,064 Reduction in CO_2 Emission (kg)	(say 38000)
	(140,400) Savings Number of Stops	(say -140000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87\ \text{gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4\ \text{lbs}}{\text{gal}}$$

Notes and References:
*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp
*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf
Table 1 on Page 2 (2018)
*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0
*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.
*Annual Calculations based on 260 commuter days per year.
*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Enfield, Route 5
Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	NB	-16	0	400	3%	97%	1.14	1.5	-1.78	$ 1.71	$ 48.36	1.547	13.6	0
	SB	4	1	400	3%	97%	1.14	1.5	0.44	$ (0.43)	$ (12.09)	-0.387	-3.4	-400
MID	NB	48	1.33	350	3%	97%	1.14	1.5	4.67	$ (4.49)	$ (126.95)	-4.060	-35.7	-466
	SB	-29	-0.92	400	3%	97%	1.14	1.5	-3.22	$ 3.10	$ 87.66	2.803	24.7	368
PM	NB	-51	-1.67	450	3%	97%	1.14	1.5	-6.38	$ 6.14	$ 173.42	5.546	48.8	752
	SB	-33	-0.33	500	3%	97%	1.14	1.5	-4.58	$ 4.41	$ 124.68	3.988	35.1	165
								TOTALS PER DAY:	-10.85	$ 10.44	$ 295.08	9.437	83.1	419

ΔTT= Change in Travel Time

	Yearly Totals	
2,821	Delay Savings (Vehicle Hours)	(say 2800)
$ 2,714	Travel Time Savings (Truck)	
$ 76,721	Travel Time Savings (Car)	
+ $ 8,612	Fuel Savings	
$ 88,047	Combined Savings	(say 88000)
2,454	Reduction in Fuel Use (Gallons)	(say 2500)
21,606	Reduction in CO_2 Emission (kg)	(say 22000)
108,940	Savings Number of Stops	(say 110000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87\ \text{gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4\ \text{lbs}}{\text{gal}}$$

Notes and References:
*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp
*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf
Table 1 on Page 2 (2018)
*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0
*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.
*Annual Calculations based on 260 commuter days per year.
*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Glastonbury, Route 94

Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	EB	3	-0.3	500	3%	97%	1.14	1.5	0.42	$ (0.40)	$ (11.33)	-0.363	-3.2	150
	WB	-12	0.7	900	3%	97%	1.14	1.5	-3.00	$ 2.89	$ 81.61	2.610	23.0	-630
MID	EB	-2	-0.5	600	3%	97%	1.14	1.5	-0.33	$ 0.32	$ 9.07	0.290	2.6	300
	WB	31	0.7	500	3%	97%	1.14	1.5	4.31	$ (4.15)	$ (117.13)	-3.746	-33.0	-350
PM	EB	-27	0	1000	3%	97%	1.14	1.5	-7.50	$ 7.22	$ 204.03	6.525	57.4	0
	WB	-10	-0.3	550	3%	97%	1.14	1.5	-1.53	$ 1.47	$ 41.56	1.329	11.7	165
								TOTALS PER DAY:	-7.63	$ 7.35	$ 207.81	6.645	58.5	-365

ΔTT= Change in Travel Time

	Yearly Totals	
	1,984 Delay Savings (Vehicle Hours)	(say 2000)
	$ 1,911 Travel Time Savings (Truck)	
	$ 54,031 Travel Time Savings (Car)	
+	$ 6,064 Fuel Savings	
	$ 62,006 Combined Savings	(say 62000)
	1,728 Reduction in Fuel Use (Gallons)	(say 1700)
	15,210 Reduction in CO_2 Emission (kg)	(say 15000)
	(94,900) Savings Number of Stops	(say -90000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87 \text{ gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4 \text{ lbs}}{\text{gal}}$$

Notes and References:

*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp

*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf

Table 1 on Page 2 (2018)

*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0

*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.

*Annual Calculations based on 260 commuter days per year.

*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Hartford, Route 44
Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduction CO_2 Emission (kg)	Daily Reduced # Stops
AM	EB	-9	-1	329	3%	97%	1.14	1.5	-0.82	$ 0.79	$ 22.37	0.716	6.3	329
	WB	-94	-2.25	316	3%	97%	1.14	1.5	-8.25	$ 7.94	$ 224.46	7.178	63.2	711
MID	EB	-55	-2.5	435	3%	97%	1.14	1.5	-6.65	$ 6.40	$ 180.79	5.782	50.9	1088
	WB	-2	-1.33	409	3%	97%	1.14	1.5	-0.23	$ 0.22	$ 6.18	0.198	1.7	544
PM	EB	28	-0.67	525	3%	97%	1.14	1.5	4.08	$ (3.93)	$ (111.08)	-3.553	-31.3	352
	WB	-137	-4.67	408	3%	97%	1.14	1.5	-15.53	$ 14.95	$ 422.38	13.508	118.9	1905
								TOTALS PER DAY:	-27.40	$ 26.37	$ 745.10	23.829	209.7	4929

ΔTT= Change in Travel Time

	Yearly Totals	
7,124	Delay Savings (Vehicle Hours)	(say 7100)
$ 6,856	Travel Time Savings (Truck)	
$ 193,726	Travel Time Savings (Car)	
+ $ 21,746	Fuel Savings	
$ 222,329	Combined Savings	(say 222000)
6,196	Reduction in Fuel Use (Gallons)	(say 6200)
54,522	Reduction in CO_2 Emission (kg)	(say 55000)
1,281,540	Savings Number of Stops	(say 1280000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87\ \text{gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4\ \text{lbs}}{\text{gal}}$$

Notes and References:

*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp

*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf

Table 1 on Page 2 (2018)

*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0

*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.

*Annual Calculations based on 260 commuter days per year.

*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Plainville, Route 372
Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	EB	-27	-0.33	561	3%	97%	1.14	1.5	-4.21	$ 4.05	$ 114.46	3.661	32.2	185
	WB	-82	-0.83	395	3%	97%	1.14	1.5	-9.00	$ 8.66	$ 244.76	7.828	68.9	328
MID	EB	7	0	761	3%	97%	1.14	1.5	1.48	$ (1.42)	$ (40.25)	-1.287	-11.3	0
	WB	-16	-1	607	3%	97%	1.14	1.5	-2.70	$ 2.60	$ 73.39	2.347	20.7	607
PM	EB	-42	-1	1031	3%	97%	1.14	1.5	-12.03	$ 11.58	$ 327.21	10.465	92.1	1031
	WB	-17	0	820	3%	97%	1.14	1.5	-3.87	$ 3.73	$ 105.34	3.369	29.6	0
								TOTALS PER DAY:	-30.33	$ 29.20	$ 824.91	26.383	232.2	2151

ΔTT= Change in Travel Time

	Yearly Totals	
7,886	Delay Savings (Vehicle Hours)	(say 7900)
$ 7,592	Travel Time Savings (Truck)	
$ 214,477	Travel Time Savings (Car)	
+ $ 24,077	Fuel Savings	
$ 246,146	Combined Savings	(say 246000)
6,860	Reduction in Fuel Use (Gallons)	(say 6900)
60,372	Reduction in CO_2 Emission (kg)	(say 60000)
559,260	Savings Number of Stops	(say 560000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87\ \text{gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4\ \text{lbs}}{\text{gal}}$$

Notes and References:
*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp
*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf
Table 1 on Page 2 (2018)
*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0
*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.
*Annual Calculations based on 260 commuter days per year.
*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Tolland, Route 195
Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	EB	7	0.33	850	3%	97%	1.14	1.5	1.65	$ (1.59)	$ (44.96)	-1.438	-12.7	-281
	WB	-4	0.00	400	3%	97%	1.14	1.5	-0.44	$ 0.43	$ 12.09	0.387	3.4	0
MID	EB	-5	0.00	550	3%	97%	1.14	1.5	-0.76	$ 0.74	$ 20.78	0.665	5.9	0
	WB	1	0.00	375	3%	97%	1.14	1.5	0.10	$ (0.10)	$ (2.83)	-0.091	-0.8	0
PM	EB	-19	0.00	1100	3%	97%	1.14	1.5	-5.81	$ 5.59	$ 157.93	5.051	44.4	0
	WB	8	0.00	750	3%	97%	1.14	1.5	1.67	$ (1.60)	$ (45.34)	-1.450	-12.8	0
								TOTALS PER DAY:	-3.59	$ 3.47	$ 97.67	3.124	27.4	-281

ΔTT= Change in Travel Time

	Yearly Totals	
933	Delay Savings (Vehicle Hours)	(say 900)
$ 902	Travel Time Savings (Truck)	
$ 25,394	Travel Time Savings (Car)	
+ $ 2,851	Fuel Savings	
$ 29,147	Combined Savings	(say 29000)
812	Reduction in Fuel Use (Gallons)	(say 800)
7,124	Reduction in CO_2 Emission (kg)	(say 7000)
(73,060)	Savings Number of Stops	(say -70000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87\ \text{gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4\ \text{lbs}}{\text{gal}}$$

Notes and References:
*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp
*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf
Table 1 on Page 2 (2018)
*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0
*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.
*Annual Calculations based on 260 commuter days per year.
*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Vernon, Route 83
Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	NB	0	0.58	350	3%	97%	1.14	1.5	0.00	$ -	$ -	0.000	0.0	-203
	SB	17	0.58	950	3%	97%	1.14	1.5	4.49	$ (4.32)	$ (122.04)	-3.903	-34.3	-551
MID	NB	17	0.67	700	3%	97%	1.14	1.5	3.31	$ (3.18)	$ (89.92)	-2.876	-25.3	-469
	SB	11	0.33	1050	3%	97%	1.14	1.5	3.21	$ (3.09)	$ (87.28)	-2.791	-24.6	-347
PM	NB	-132	-2.67	850	3%	97%	1.14	1.5	-31.17	$ 30.01	$ 847.84	27.115	238.6	2270
	SB	36	1.33	1100	3%	97%	1.14	1.5	11.00	$ (10.59)	$ (299.24)	-9.570	-84.2	-1463
								TOTALS PER DAY:	-9.16	$ 8.83	$ 249.36	7.975	70.2	-560

ΔTT= Change in Travel Time

	Yearly Totals		
	2,382	Delay Savings (Vehicle Hours)	(say 2400)
	$ 2,296	Travel Time Savings (Truck)	
	$ 64,834	Travel Time Savings (Car)	
+	$ 7,278	Fuel Savings	
	$ 74,407	Combined Savings	(say 74000)
	2,074	Reduction in Fuel Use (Gallons)	(say 2100)
	18,252	Reduction in CO_2 Emission (kg)	(say 18000)
	(145,600)	Savings Number of Stops	(say -150000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87\ \text{gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4\ \text{lbs}}{\text{gal}}$$

Notes and References:
*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp
*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf
Table 1 on Page 2 (2018)
*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0
*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.
*Annual Calculations based on 260 commuter days per year.
*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Wethersfield, Route 99

Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	NB	-18	-1	800	3%	97%	1.14	1.5	-4.00	$ 3.85	$ 108.81	3.480	30.6	800
	SB	20	0.83	850	3%	97%	1.14	1.5	4.72	$ (4.55)	$ (128.46)	-4.108	-36.1	-706
MID	NB	-46	-0.67	600	3%	97%	1.14	1.5	-7.67	$ 7.38	$ 208.56	6.670	58.7	402
	SB	-19	0	750	3%	97%	1.14	1.5	-3.96	$ 3.81	$ 107.68	3.444	30.3	0
PM	NB	-38	-0.67	750	3%	97%	1.14	1.5	-7.92	$ 7.62	$ 215.36	6.888	60.6	503
	SB	-45	-1	1200	3%	97%	1.14	1.5	-15.00	$ 14.44	$ 408.05	13.050	114.8	1200
									TOTALS PER DAY:	**-33.83**	**$ 32.55**	**$ 920.00**	**29.424**	**258.9**	**2199**

ΔTT= Change in Travel Time

	Yearly Totals	
	8,796 Delay Savings (Vehicle Hours)	(say 8800)
	$ 8,463 Travel Time Savings (Truck)	
	$ 239,200 Travel Time Savings (Car)	
+	**$ 26,852** Fuel Savings	
	$ 274,515 Combined Savings	(say 275000)
	7,650 Reduction in Fuel Use (Gallons)	(say 7700)
	67,314 Reduction in CO_2 Emission (kg)	(say 67000)
	571,740 Savings Number of Stops	(say 570000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87 \text{ gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4 \text{ lbs}}{\text{gal}}$$

Notes and References:

*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp

*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf

Table 1 on Page 2 (2018)

*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0

*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.

*Annual Calculations based on 260 commuter days per year.

*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Windsor, Route 159

Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	NB	-51	-2.58	289	3%	97%	1.14	1.5	-4.09	$ 3.94	$ 111.38	3.562	31.3	746
	SB	17	0	890	3%	97%	1.14	1.5	4.20	$ (4.05)	$ (114.33)	-3.656	-32.2	0
MID	NB	8	-1	433	3%	97%	1.14	1.5	0.96	$ (0.93)	$ (26.18)	-0.837	-7.4	433
	SB	-3	-0.67	376	3%	97%	1.14	1.5	-0.31	$ 0.30	$ 8.52	0.273	2.4	252
PM	NB	-6	0.67	687	3%	97%	1.14	1.5	-1.15	$ 1.10	$ 31.15	0.996	8.8	-460
	SB	-2	0.67	750	3%	97%	1.14	1.5	-0.42	$ 0.40	$ 11.33	0.363	3.2	-503
								TOTALS PER DAY:	-0.81	$ 0.76	$ 21.87	0.701	6.1	468

ΔTT= Change in Travel Time

	Yearly Totals		
	211	Delay Savings (Vehicle Hours)	(say 200)
	$ 198	Travel Time Savings (Truck)	
	$ 5,686	Travel Time Savings (Car)	
+	$ 640	Fuel Savings	
	$ 6,524	Combined Savings	(say 7000)
	182	Reduction in Fuel Use (Gallons)	(say 200)
	1,586	Reduction in CO_2 Emission (kg)	(say 2000)
	121,680	Savings Number of Stops	(say 120000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87\ \text{gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4\ \text{lbs}}{\text{gal}}$$

Notes and References:

*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp

*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf

Table 1 on Page 2 (2018)

*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0

*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.

*Annual Calculations based on 260 commuter days per year.

*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT

Windsor Locks, Route 75

Travel Time Run System Evaluation - Comparison of Before and After Travel Time Run

Period	Direction	ΔTT (sec)	Δ Stops per vehicle	Total Traffic Volumes (veh/hour)	% Trucks	% Passenger Vehicles	PPVt	PPVc	Daily Δ Delay (veh/hours)	Daily Truck Travel Time Savings	Daily Car Travel Time Savings	Daily Fuel Consumption Savings (gallons)	Daily Reduced CO_2 Emission (kg)	Daily Reduced # Stops
AM	NB	-46	-1.33	386	3%	97%	1.14	1.5	-4.93	$ 4.75	$ 134.17	4.291	37.8	513
	SB	-5	2	530	3%	97%	1.14	1.5	-0.74	$ 0.71	$ 20.02	0.640	5.6	-1060
MID	NB	-28	-1	470	3%	97%	1.14	1.5	-3.66	$ 3.52	$ 99.44	3.180	28.0	470
	SB	-10	1	472	3%	97%	1.14	1.5	-1.31	$ 1.26	$ 35.67	1.141	10.0	-472
PM	NB	-83	-3.33	655	3%	97%	1.14	1.5	-15.10	$ 14.54	$ 410.81	13.138	115.6	2181
	SB	-31	-0.67	440	3%	97%	1.14	1.5	-3.79	$ 3.65	$ 103.07	3.296	29.0	295
								TOTALS PER DAY:	-29.53	$ 28.43	$ 803.18	25.686	226.0	1927

ΔTT= Change in Travel Time

	Yearly Totals	
7,678	Delay Savings (Vehicle Hours)	(say 7700)
$ 7,392	Travel Time Savings (Truck)	
$ 208,827	Travel Time Savings (Car)	
+ $ 23,441	Fuel Savings	
$ 239,660	Combined Savings	(say 240000)
6,678	Reduction in Fuel Use (Gallons)	(say 6700)
58,760	Reduction in CO_2 Emission (kg)	(say 59000)
501,020	Savings Number of Stops	(say 500000)

$$\Delta TT = TT_{Base(section)} - TT_{Objective(section)}$$

$$USER_c = \Delta TT * Vol * \%C * PPV_c * \frac{\$18.71}{\text{hr}}$$

$$USER_t = \Delta TT * Vol * \%T * PPV_t * \frac{\$27.51}{\text{hr}}$$

$$FUEL = \Delta TT * Vol * \frac{0.87 \text{ gal}}{\text{hr}}$$

$$CO_2 = FUEL * \frac{19.4 \text{ lbs}}{\text{gal}}$$

Notes and References:

*Formulas from : https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2598&context=jtrp

*Cost Reference: https://ftp.dot.state.tx.us/pub/txdot-info/cst/ruc-methodology-memo.pdf
Table 1 on Page 2 (2018)

*Vehicle percentages from : https://tminfo-dot.ct.gov/TMINFO/top?year=2015,town=131,station=216,dataset=0

*Total savings represent annual savings during the periods of travel time run data collection only (1 hour of AM peak traffic, 1 hour of Mid-Day peak traffic, and 1 hour of PM peak traffic). Savings outside these times are not reported.

*Annual Calculations based on 260 commuter days per year.

*Average price per gallon for gasoline in CT = $3.51 (December 2021) https://gasprices.aaa.com/?state=CT