



Norwell Traffic Impact Study

Route 53 (Washington St) and Route 228 (Pond St)

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Objectives

- **Collect and gather data to evaluate existing conditions**
- **Project trips from two scenarios**
- **Determine impacts of new development**
- **Develop and recommend mitigation improvements**
- **Document study**

Study Area Map



Data Collection

Data	Responsibility
Future development/scenarios	MAPC/Norwell
Traffic volumes	CTPS
Crashes	CTPS
Traffic signal timing plan	CTPS/MAPC/Norwell
Other relevant documents	MAPC/Norwell

Roadway Characteristics

	Route 53	Route 228
Jurisdiction	MassDOT	Town Accepted
Functional Class	Minor Arterial	Minor Arterial
National Highway System (NHS)	Not on NHS	Not on NHS
Designated State Truck Route	Yes	No
Right of Way	41 feet	55 feet
Sidewalks	5 feet (both sides)	4-5 feet (one side)
Bike Lanes	No	No
Shoulder	Yes	Yes

Study Intersections

Washington St and Pond St



Study Intersections

Access to Queen Anne's Plaza



1

2

3

228

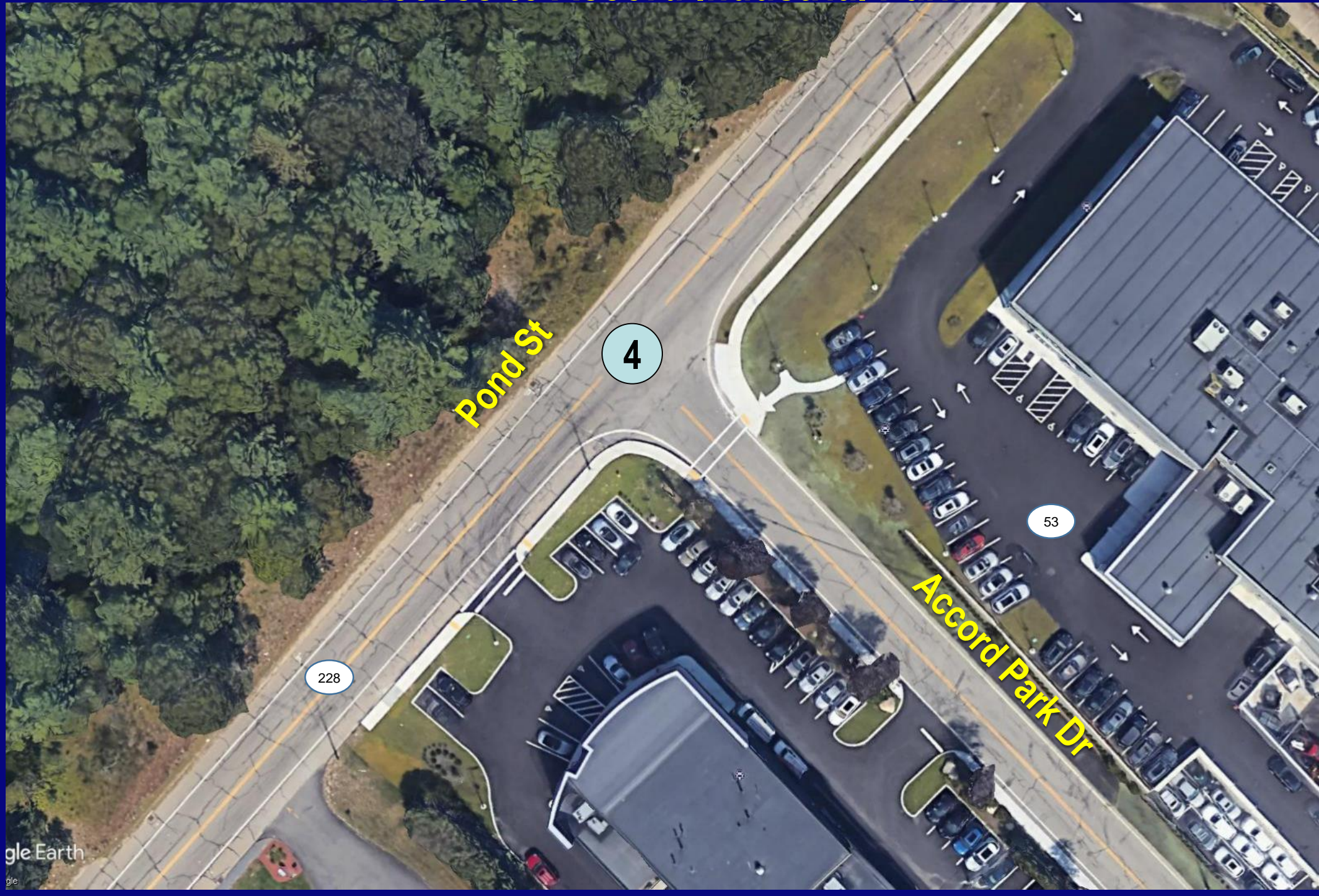
53

Washington St

Pond St

Study Intersections

Access to Accord Industrial Park



Study Intersections

Access to Accord Industrial Park



5

Pond St

Hingham St

Accord Park Dr

Accord Park Dr

Pond St

Existing Conditions Analyses

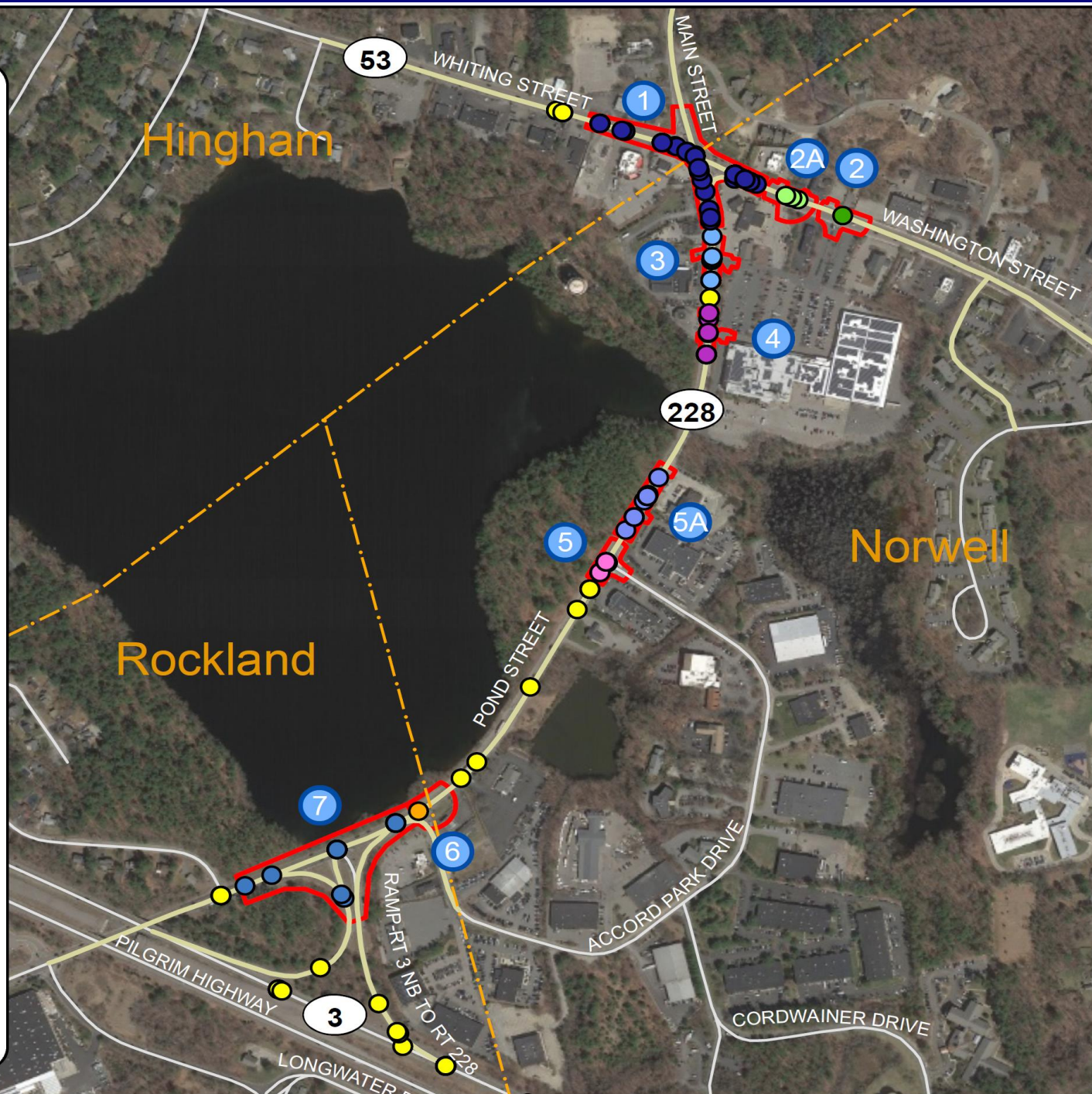
- **Safety conditions**
 - Crash summary, HSIP crash cluster locations
- **Traffic operations conditions**
 - Level of service, delays, and queues

Crash Data (2013-17)

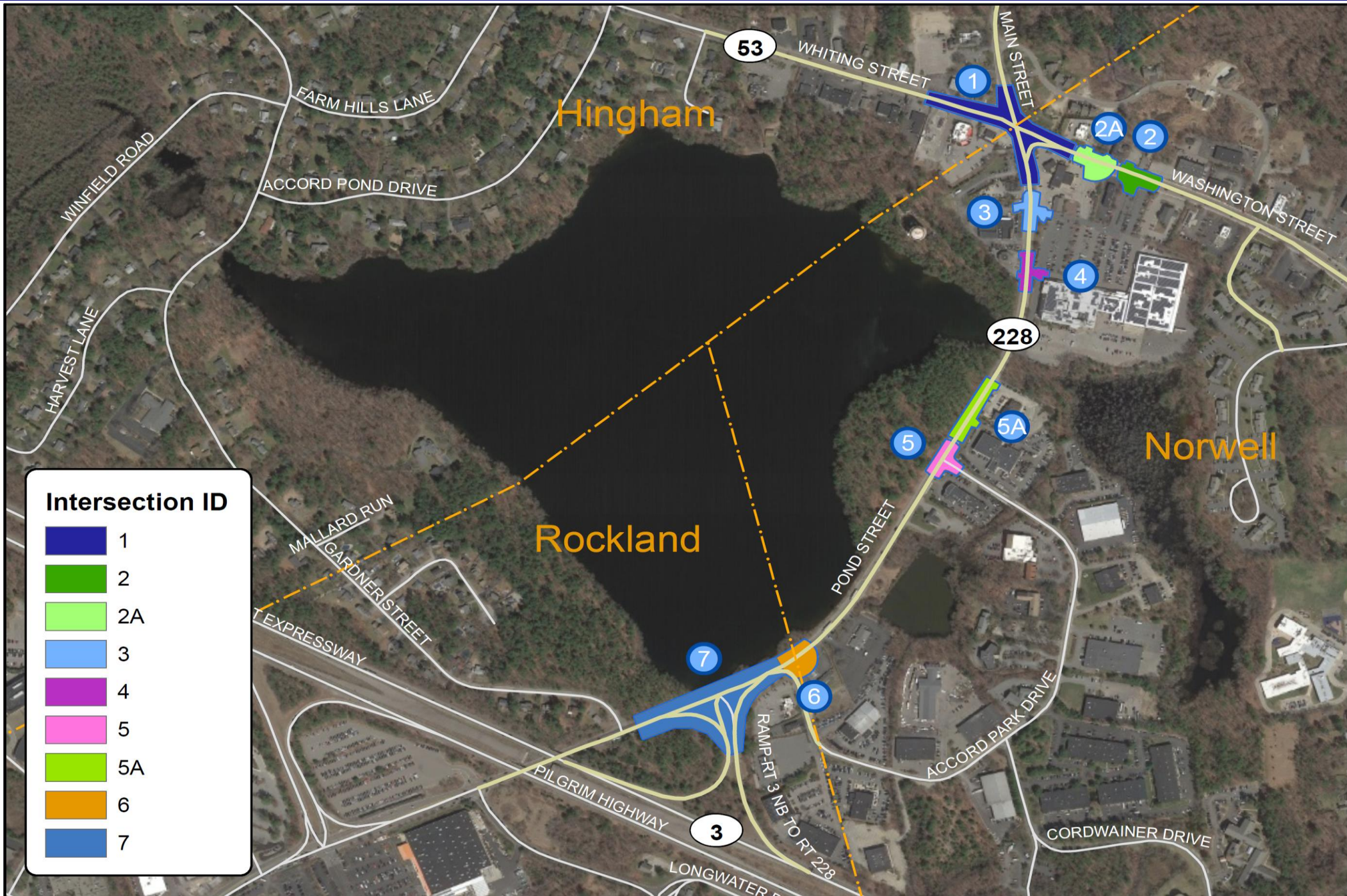
Route 228 and Route 53 Crashes 2013- 17

Intersection ID

- 1 Route 228 and Route 53
- 2 Route 53, Washington Street entrance to shopping center
- 2A Route 53, Washington Street at Dunkin's and KFC
- 3 Route 228 Pond Street at McLaren and shopping center driveway
- 4 Route 228 ,Pond Street at Papa Gino's and shopping center driveway
- 5 Route 228, Pond Street and Accord Park Drive (north end)
- 5A Route 228, Pond Street north of Accord Drive
- 6 Route 228, Pond Street and Accord Drive (south end)
- 7 Route 3 at Route 228, Pond Street NB exit
- Crash not located at intersection or critical crashes location.



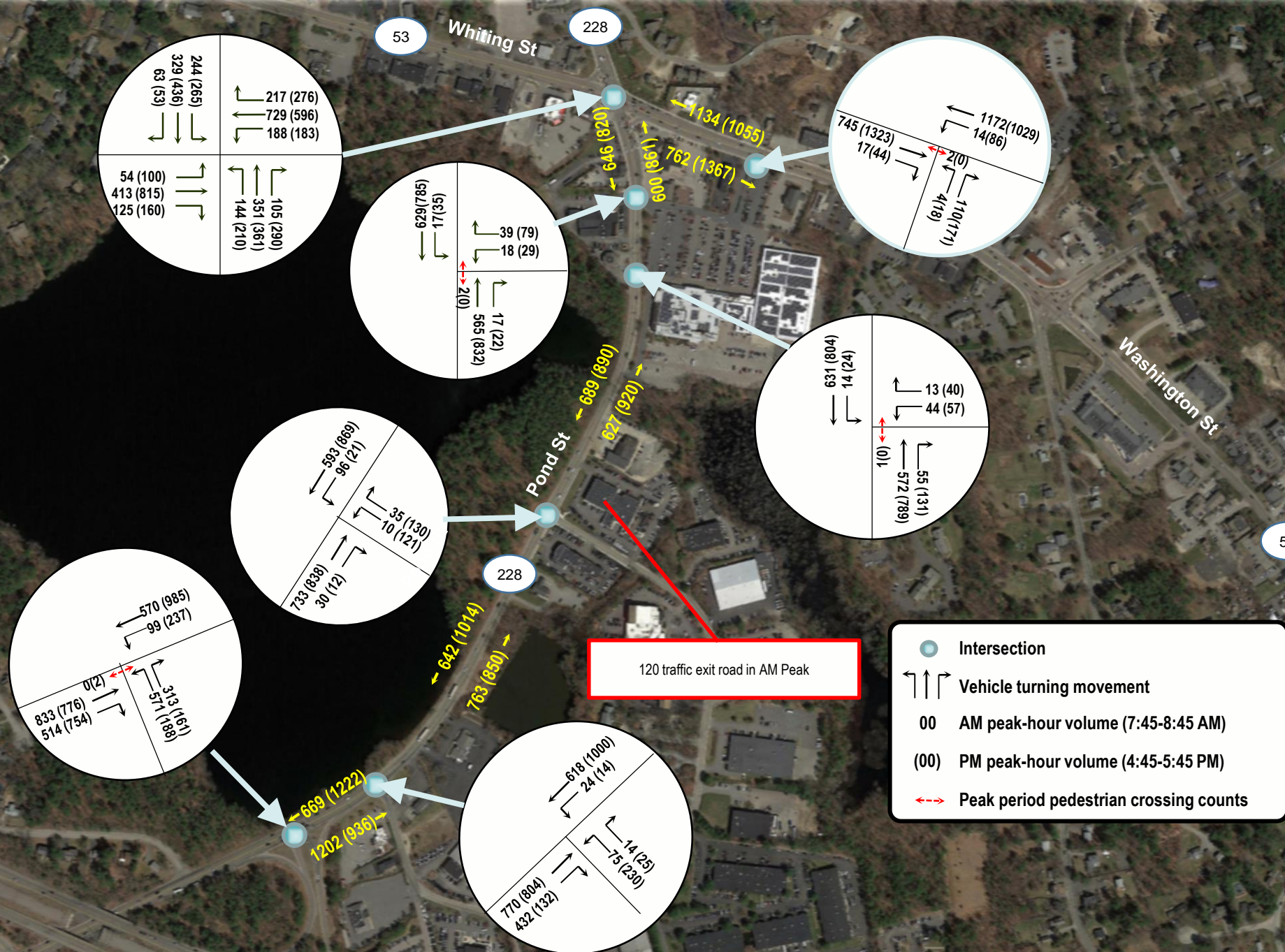
Crash Data (2013-17)



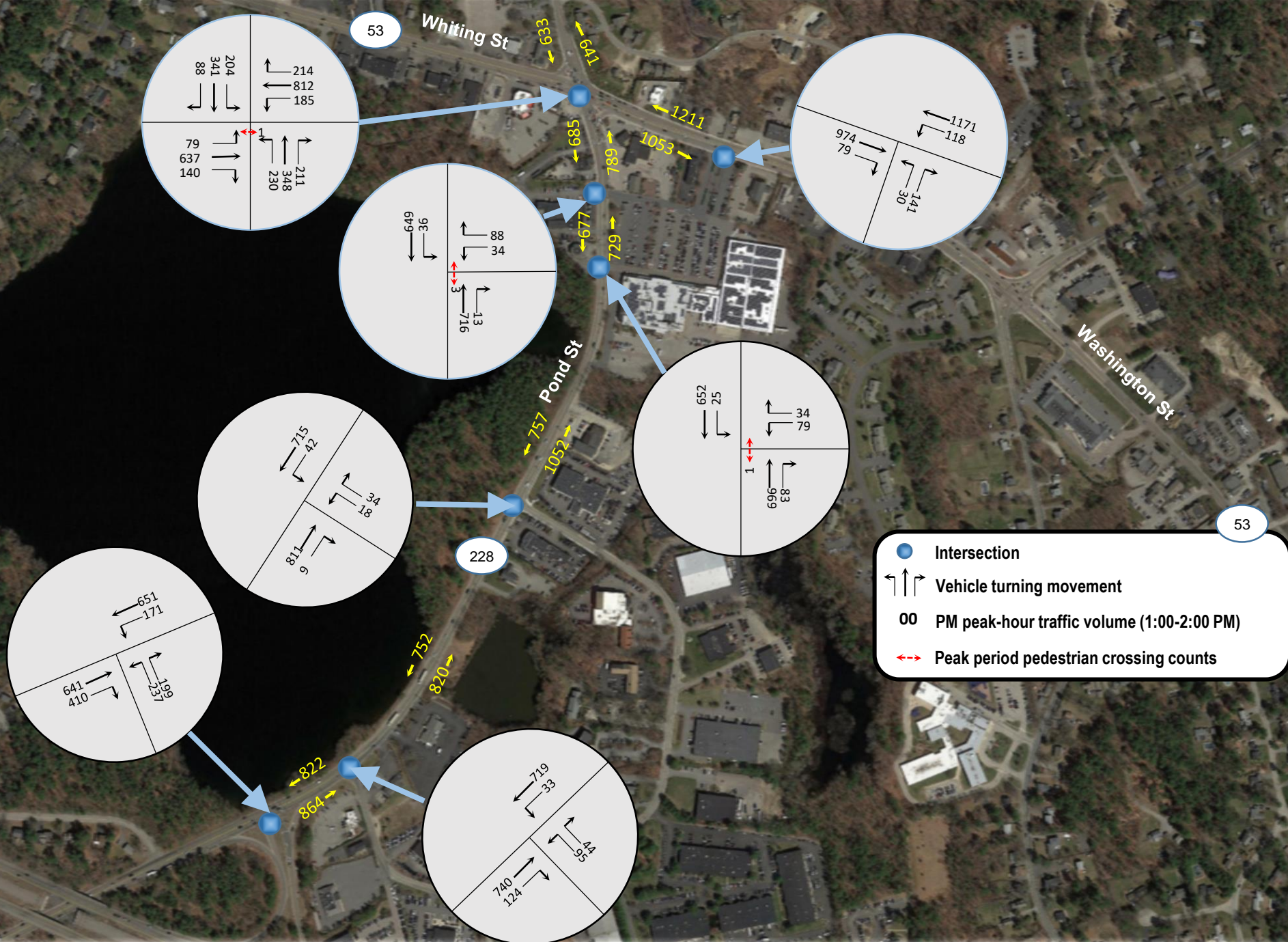
Traffic Count Location Map



Weekday AM+PM Peak-Hour Volumes

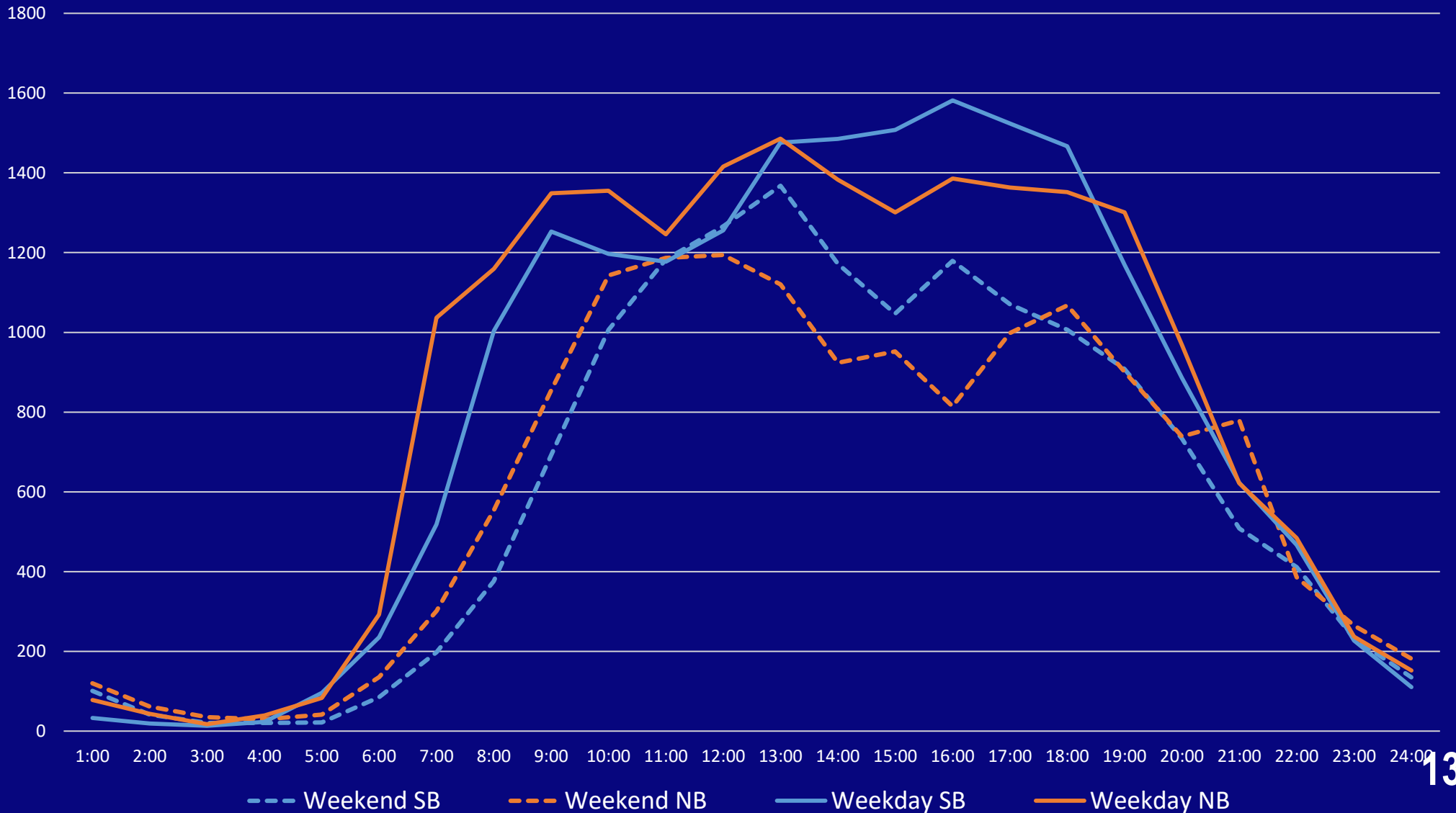


Weekend PM Peak-Hour Volumes



Average Weekday and Weekend Counts

Route 228 (Pond Street)



Traffic Signal Warrant Analysis

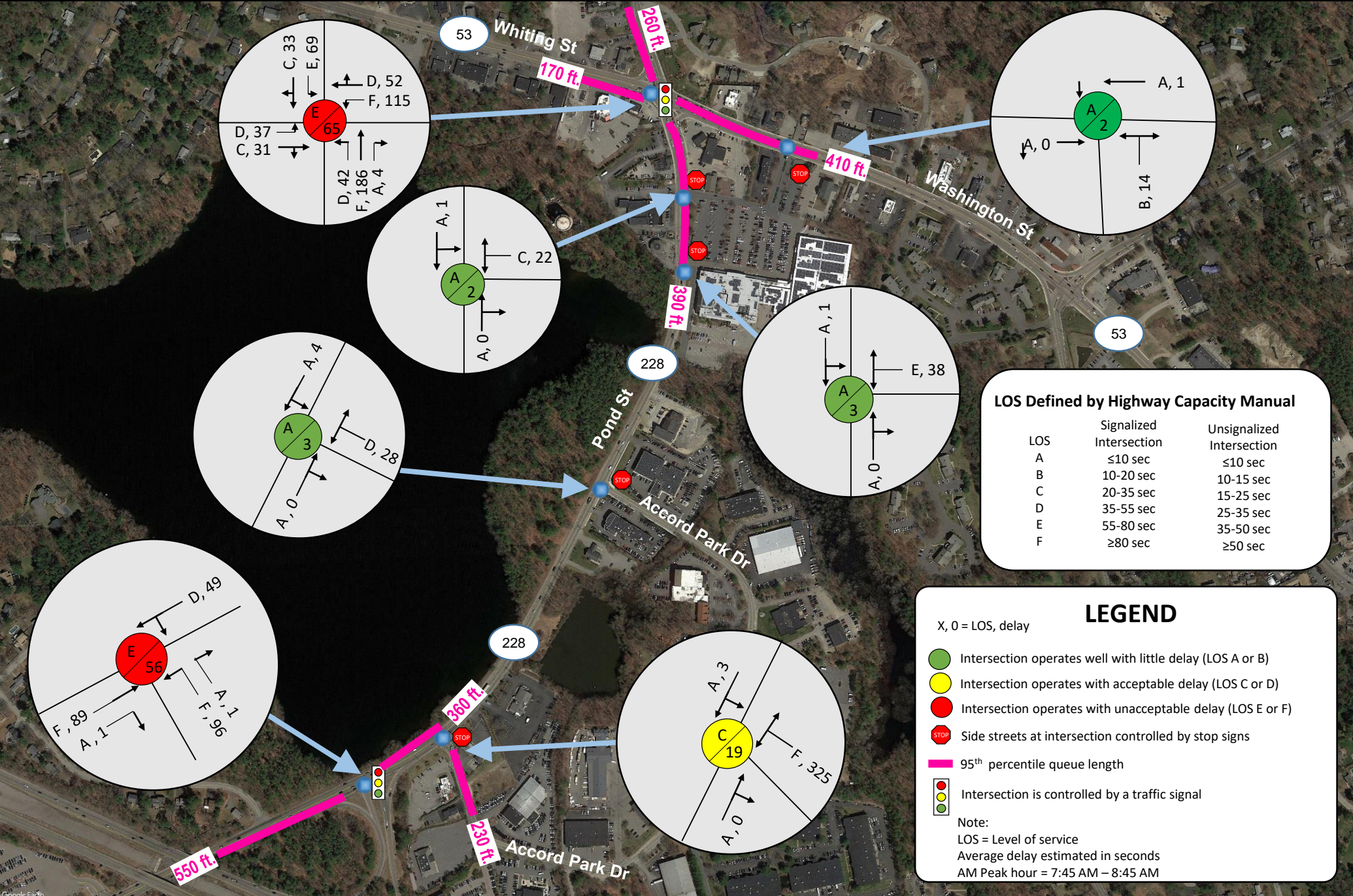
Pond Street and Accord Park Drive

Warrant	Results
Warrant 1, Eight-Hour Vehicular Volume	Satisfied
Warrant 2, Four-Hour Vehicular Volume	Satisfied
Warrant 3, Peak Hour	Satisfied
Warrant 4, Pedestrian Volume	Not satisfied
Warrant 5, School Crossing	Not satisfied
Warrant 6, Coordinated Signal System	Not satisfied
Warrant 7, Crash Experience	Not satisfied
Warrant 8, Roadway Network	Not satisfied
Warrant 9, Intersection Near a Grade Crossing	Not satisfied

Source: Central Transportation Planning Staff.

Level of Service and Delay

Weekday AM Peak Hour



LOS Defined by Highway Capacity Manual

LOS	Signalized Intersection	Unsignalized Intersection
A	≤10 sec	≤10 sec
B	10-20 sec	10-15 sec
C	20-35 sec	15-25 sec
D	35-55 sec	25-35 sec
E	55-80 sec	35-50 sec
F	≥80 sec	≥50 sec

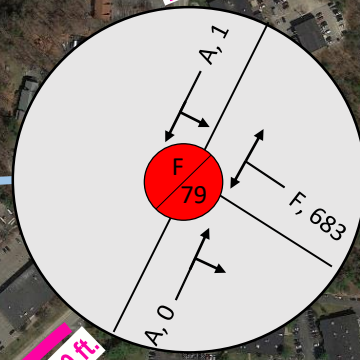
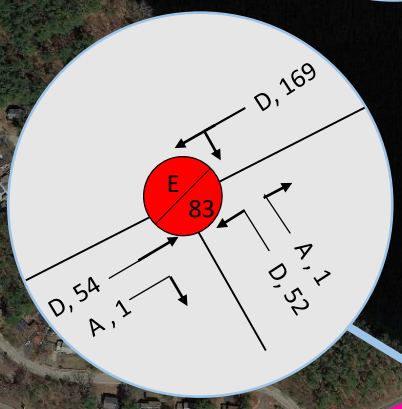
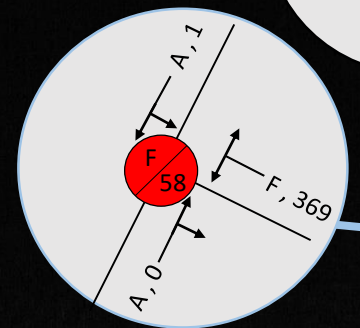
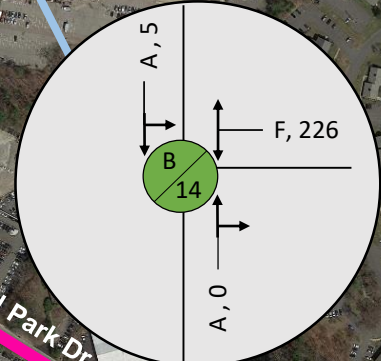
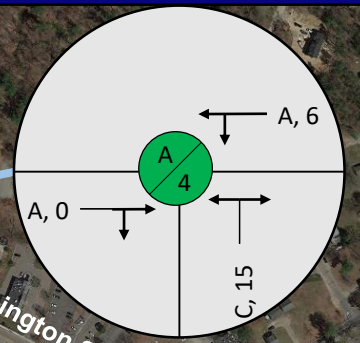
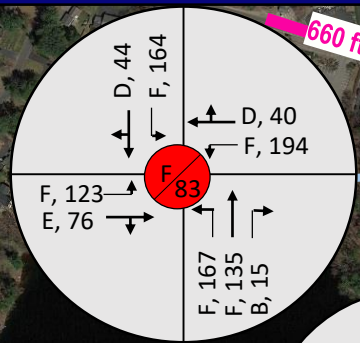
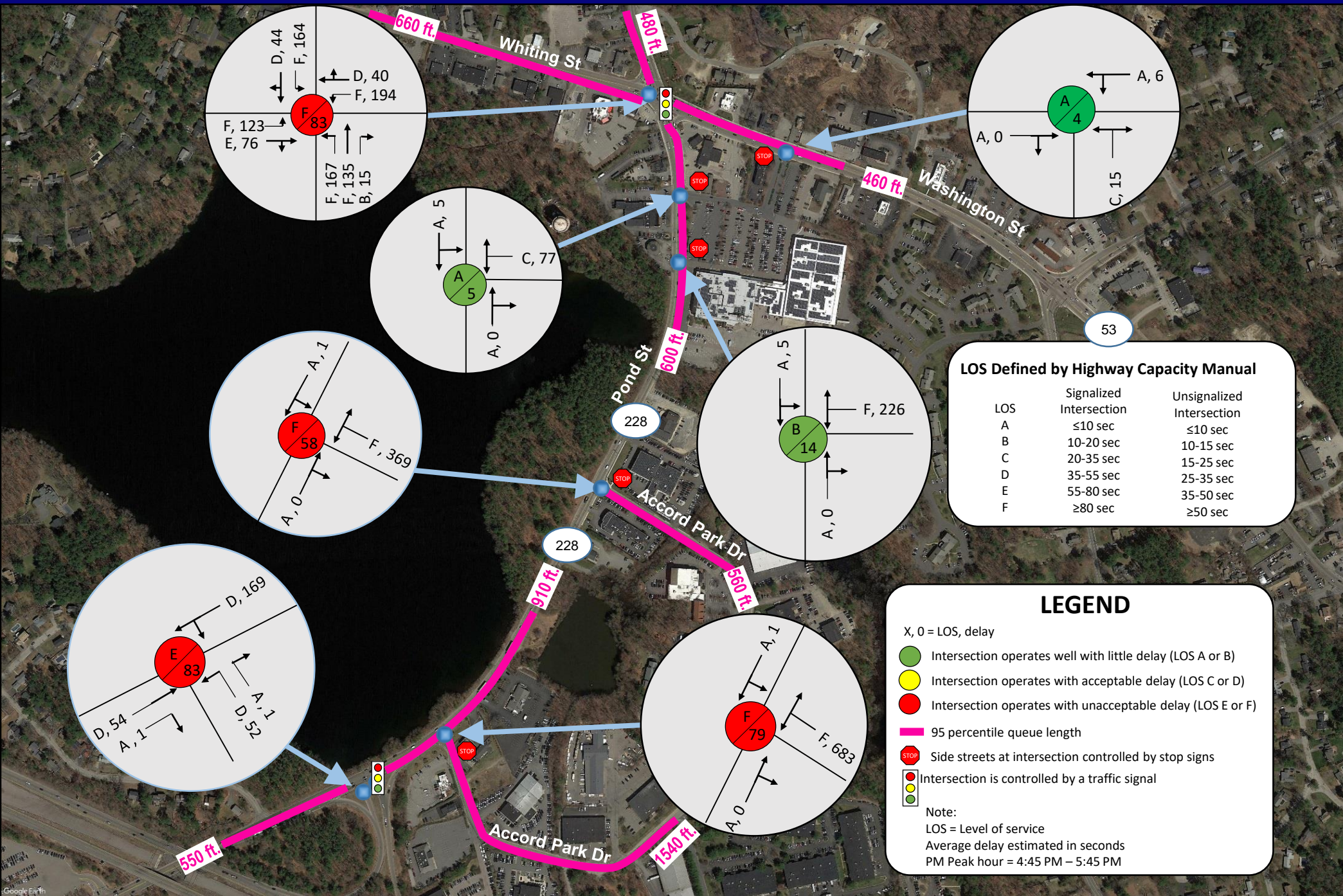
LEGEND

- X, 0 = LOS, delay
- Green circle: Intersection operates well with little delay (LOS A or B)
- Yellow circle: Intersection operates with acceptable delay (LOS C or D)
- Red circle: Intersection operates with unacceptable delay (LOS E or F)
- Red octagon: Side streets at intersection controlled by stop signs
- Pink line: 95th percentile queue length
- Traffic signal icon: Intersection is controlled by a traffic signal

Note:
 LOS = Level of service
 Average delay estimated in seconds
 AM Peak hour = 7:45 AM – 8:45 AM

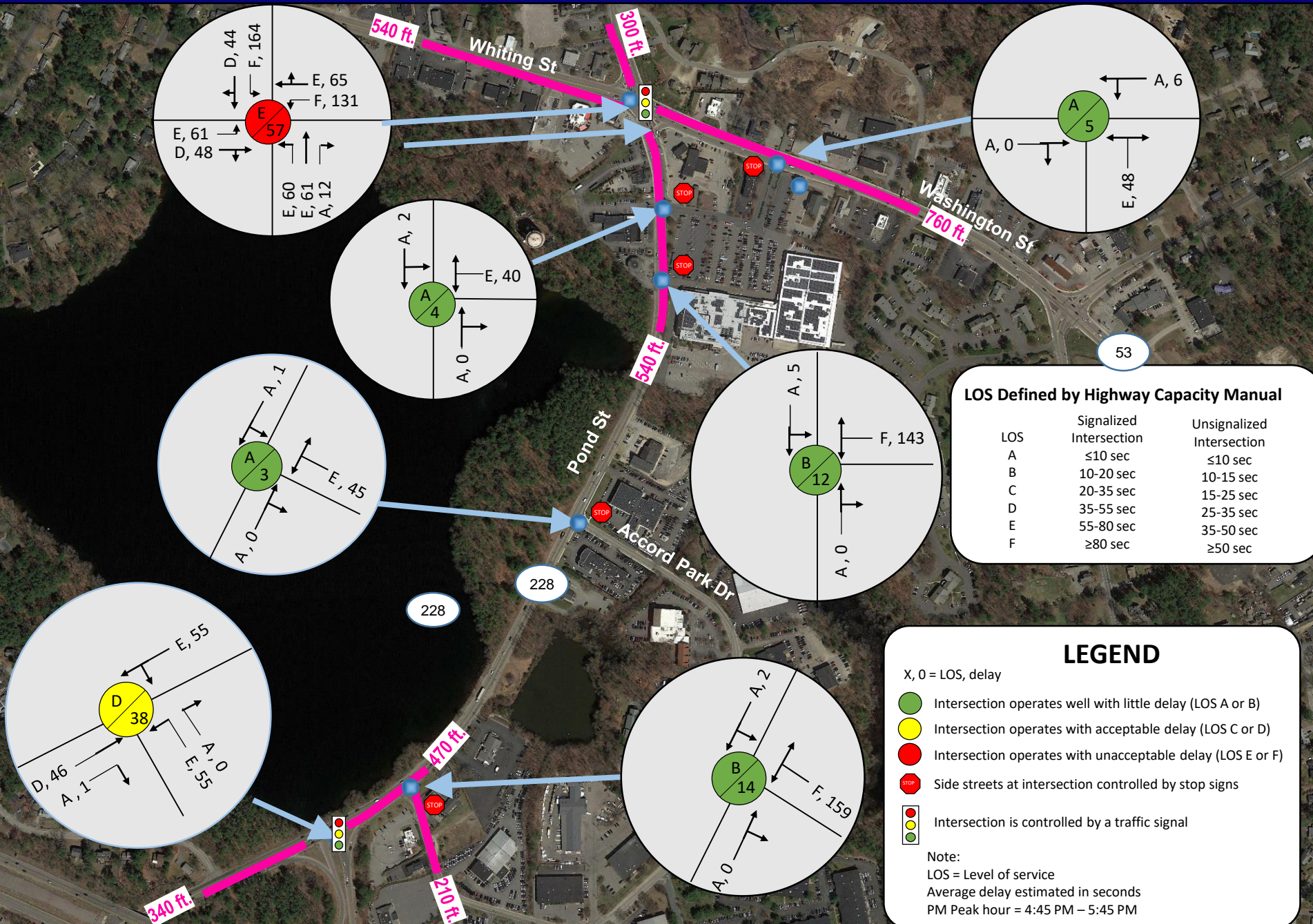
Level of Service and Delay

Weekday PM Peak Hour



Level of Service and Delay

Weekend Midday Peak Hour



LOS Defined by Highway Capacity Manual

LOS	Signalized Intersection	Unsignalized Intersection
A	≤10 sec	≤10 sec
B	10-20 sec	10-15 sec
C	20-35 sec	15-25 sec
D	35-55 sec	25-35 sec
E	55-80 sec	35-50 sec
F	≥80 sec	≥50 sec

LEGEND

- X, 0 = LOS, delay
- Green circle: Intersection operates well with little delay (LOS A or B)
- Yellow circle: Intersection operates with acceptable delay (LOS C or D)
- Red circle: Intersection operates with unacceptable delay (LOS E or F)
- Red STOP sign: Side streets at intersection controlled by stop signs
- Traffic signal icon: Intersection is controlled by a traffic signal

Note:
 LOS = Level of service
 Average delay estimated in seconds
 PM Peak hour = 4:45 PM – 5:45 PM

Next Steps

- Use feedback to update existing conditions analyses
- Project trips from two scenarios
- Determine impacts of new development
- Develop and recommend mitigation improvements
- Document study

Thank you!

Questions, Comments, and Discussion?