



**Highland Innovation Center
Needham, MA
Transportation Summary Focus**

May 4, 2022

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TRANSPORTATION STUDY PROCESS AND COORDINATION UPDATE

- Project team submitted a Transportation Scoping Letter to MassDOT to get review-of the scope and methodology supporting both the local and state permitting efforts.
- Scope was also closely coordinated with Town of Needham and Greenman-Pederson, Inc. (GPI) (the transportation consultant hired by the Town of Needham) prior to initiating traffic study .
- Comprehensive Transportation Study conducted by VHB supporting both MEPA (state) and Special Permit (town) application processes.
- Project team carefully reviewed the 2020 GPI Transportation Study and related outcomes commissioned by the Town in connection with the recent rezoning effort for this site.





Local Submittal Timeline

- Special Permit Submission with Traffic Study: April 8, 2022
- Town of Needham Development Review Team (DRT) Meeting: April 26, 2022
- Neighborhood Meetings: April 25, April 27, May 4, 2022 [*Upcoming: May 12, May 19, 2022*]

State Submittal Timeline

- State MEPA ENF Submission with Traffic Study: April 1, 2022
- MEPA Site Consultation Meetings: April 20, April 22, 2022
- Comment Letters Received: April 29, 2022

PROPOSED SITE PLAN

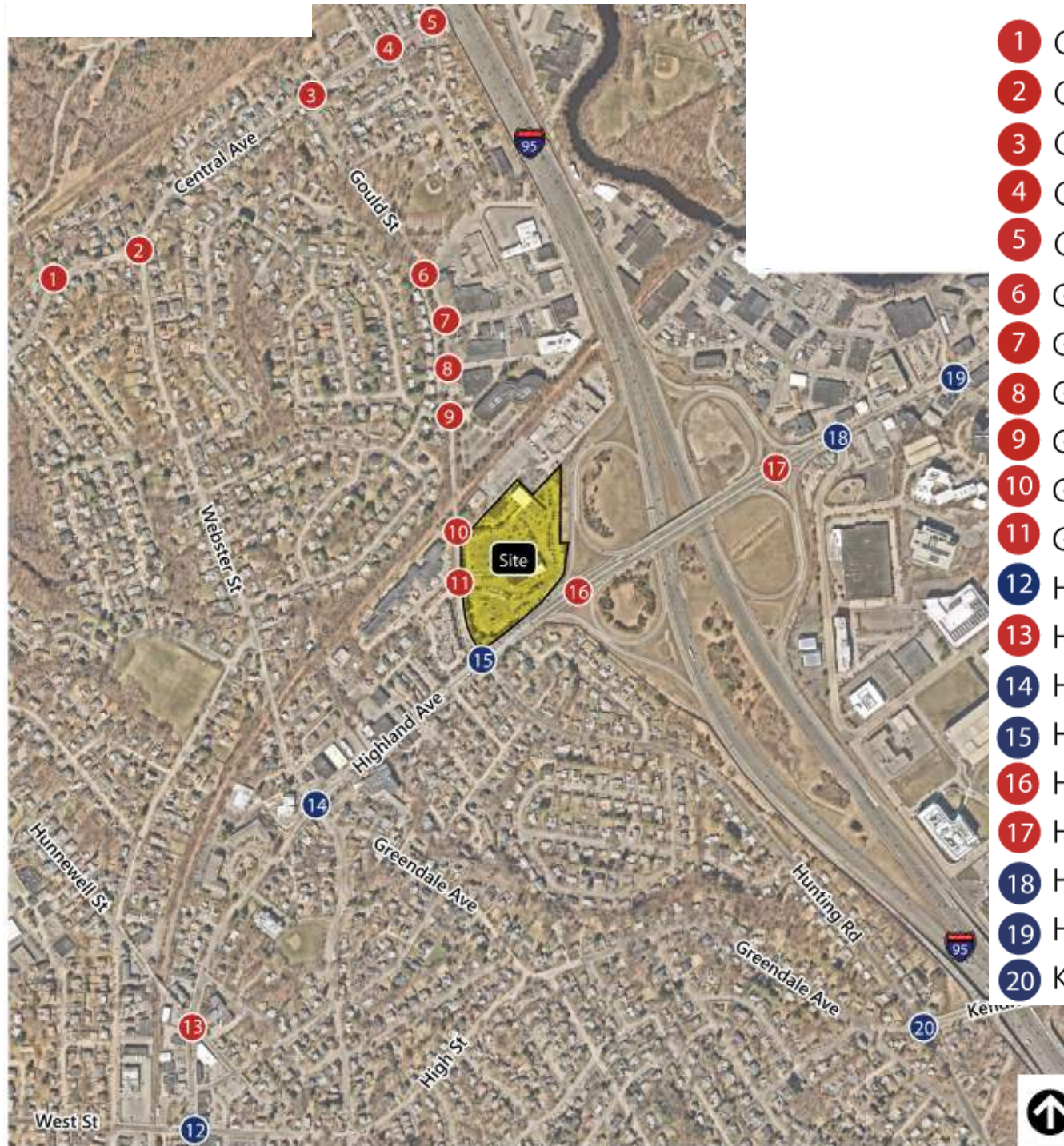
-  Vehicle Access
-  Vehicle Egress
-  Garage Access
-  Loadings Access

Use	Size (SF)
Office	248,347
R&D	248,347
Retail	10,000
Total	506,694
Open Space	38.76% of Site



STUDY AREA INTERSECTIONS AS DELINEATED

- # Unsignalized Intersection
- # Signalized Intersection



- 1 Central Avenue at Cedar Street
- 2 Central Avenue at Webster Street
- 3 Central Avenue at Gould Street
- 4 Central Avenue at Hampton Avenue
- 5 Central Avenue at River Park Street
- 6 Gould Street at Ellis Street
- 7 Gould Street at Kearney Road
- 8 Gould Street at Station Road
- 9 Gould Street at Noanett Street
- 10 Gould Street at TV Place
- 11 Gould Street at Muzi Ford/Wingate Res.
- 12 Highland Avenue at West Street
- 13 Highland Avenue at Hunnewell Street
- 14 Highland Avenue at Webster Street
- 15 Highland Avenue at Gould Street
- 16 Highland Avenue at I-95 SB Ramps
- 17 Highland Avenue at I-95 NB Ramps
- 18 Highland Avenue at 1st Avenue
- 19 Highland Avenue at 2nd Avenue
- 20 Kendrick Street at Hunting Road

BACKGROUND PROJECTS

1. **100 West Street** – This project involves the conversion of a former mill building into 83 assisted living units and 72 independent senior living units. Projected traffic volumes expected to be generated by this project were obtained from the published traffic study submitted as part of the permitting process for the project.
2. **Newton Northland Development** – This project involves the redevelopment of 22.6 acres of land on the corner of Needham Street and Oak Street in Newton, Massachusetts. The project will include approximately 1.4 million SF of development including 193,200 SF of office space, 115,100 SF of retail/commercial space, and 800 residential units. Projected traffic volumes expected to be generated by this project were obtained from the published traffic study submitted as part of the permitting process for the project.
3. **Boston Children’s Hospital at Founders Park** – This project involves the full build-out of the Founders Park development by Boston Children’s Hospital. The project will include an approximately 224,000 SF pediatric ambulatory center and 228,000 SF of office space for the hospital. Projected traffic volumes expected to be generated by this project were obtained from the published traffic study submitted as part of the permitting process for the project.
4. **589 Highland Avenue** – This project involves the conversion of 142-bed nursing home into 50 independent living units at the existing Wingate at Needham development. Based on a review of estimated trip generation for the existing and proposed uses, the project is expected to result in a net decrease in trips. Therefore, this project is mentioned for reference purposes only and no trips were added or removed from the roadway network to provide a conservative analysis.

TRIP GENERATION | EXISTING SITE TRIPS

- Existing trips quantified during COVID (July 2021) and pre-COVID volumes were likely measurably higher than what is quantified in the Transportation Study (conservative assumption)
- Car wash was busiest in late Winter/Spring, less busy in Summer
- Car wash alone was known to service up to 1,300 cars/day at peak times with daily average between October and May around 600 cars/day
- Existing daily trips for Muzi site included Chevrolet dealership, Ford dealership, body shop, service center, new car sales, used car sales, and outsourced sales

	Existing Site Trips ^c
Weekday Morning	
Enter	(-37)
<u>Exit</u>	<u>(-24)</u>
Total	(-61)
Weekday Evening	
Enter	(-29)
<u>Exit</u>	<u>(-57)</u>
Total	(-87)

a Includes adjustments for internal capture between retail and office/lab uses.
 b Pass-by includes trips for the retail uses already traveling on the roadway network under Existing Conditions.
 c Existing Site-Generated trips based on empirical counts conducted by VHB in July 2021.

TRIP GENERATION

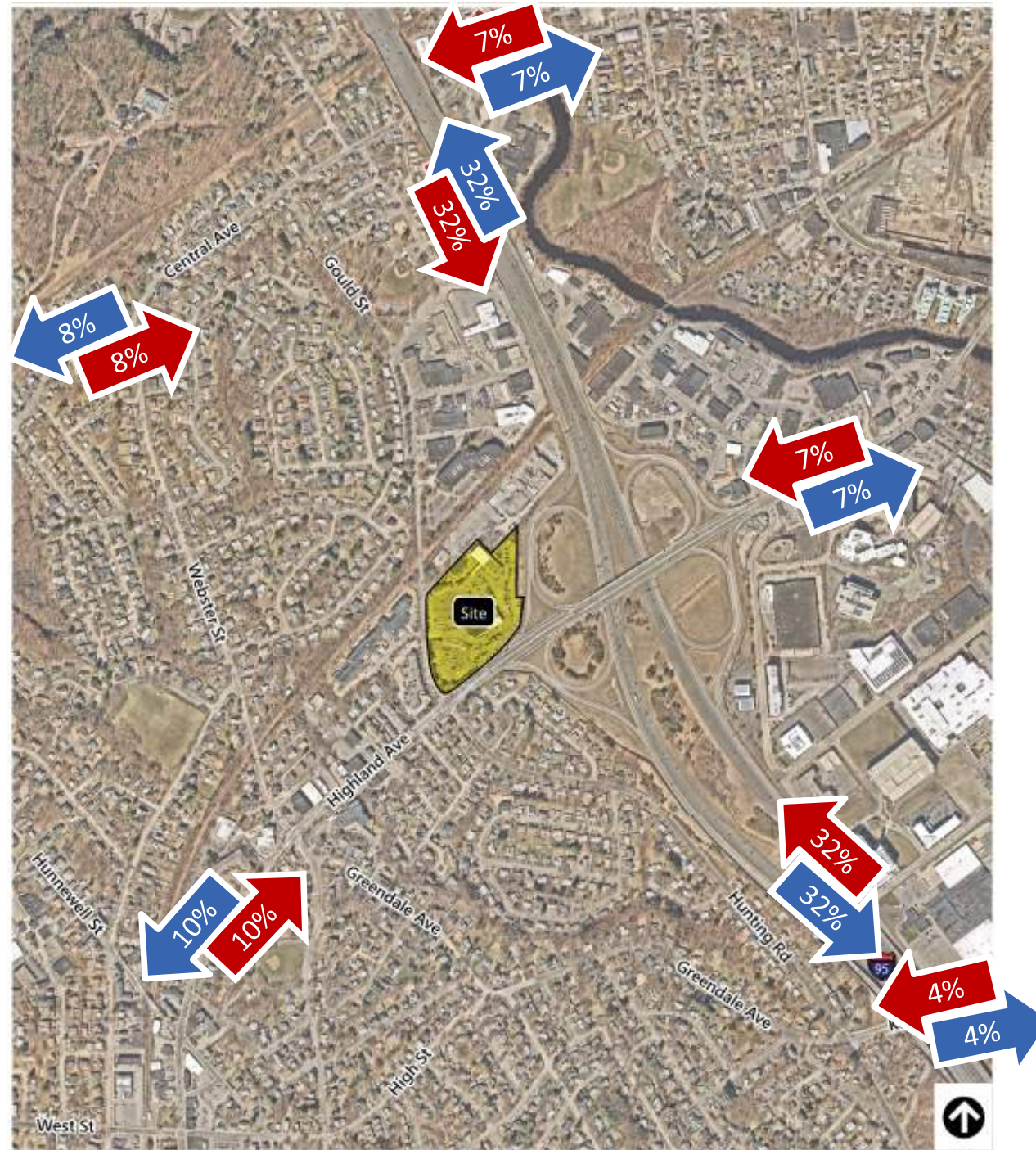
Adjusted Vehicle Trips ^a

	Office	R&D	Retail	Total	Pass-by ^b	Existing Site Trips ^c	Total Net-New Vehicle Trips
Weekday Morning							
Enter	334	209	11	554	(-2)	(-37)	515
<u>Exit</u>	<u>42</u>	<u>44</u>	<u>9</u>	<u>94</u>	<u>(-2)</u>	<u>(-24)</u>	<u>68</u>
Total	376	253	20	649	(-4)	(-61)	584
Weekday Evening							
Enter	62	39	36	136	(-15)	(-29)	92
<u>Exit</u>	<u>303</u>	<u>204</u>	<u>38</u>	<u>545</u>	<u>(-15)</u>	<u>(-57)</u>	<u>473</u>
Total	365	242	74	681	(-30)	(-87)	565

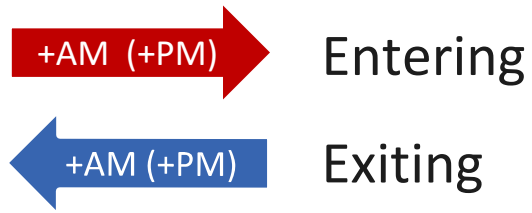
a Includes adjustments for internal capture between retail and office/lab uses.
 b Pass-by includes trips for the retail uses already traveling on the roadway network under Existing Conditions.
 c Existing Site-Generated trips based on empirical counts conducted by VHB in July 2021.

- Trip Generation assessment does not account for reductions due to:
 1. transit use
 2. work from home/hybrid work environment

TRIP DISTRIBUTION



NEW PROJECT-GENERATED TRIPS



- Trip Generation assessment does not account for reductions due to:
 1. transit use
 2. work from home/hybrid work environment



PARKING GENERATION

The Project proposes up to **1,408 off-street parking spaces** which exceeds the expected demand.

Use	Size (SF)	Employee/Patron Density ^a	Reduction for non-SOV ^b	Parking Demand
Office	248,347	3.33/ksf	0.92	762 spaces
R&D	248,347	2.46/ksf	0.92	562 spaces
Retail	10,000	3.33/ksf	0.92	31 spaces
Total				1,355 spaces

- a Based on Town of Needham zoning requirements for office and retail and data from existing R&D uses in Cambridge for R&D.
- b Estimated 8-percent reduction in required parking spaces to account for incentivized modes of transportation beyond single occupancy vehicles (SOV).

TRANSPORTATION DEMAND MANAGEMENT (TDM)

- Providing an Full-Time, Dedicated Transportation Employee Advisor who will coordinate with the 128 Business Council;
- Provide covered and secure bicycle parking spaces on-site;
- Exploring the feasibility of providing shuttle service connectivity to nearby public transportation nodes (commuter rail and Green Line) through electric shuttles purchased by the Proponent;
- Requiring tenants to provide a 50 percent transit pass subsidy for their employees;
- Carpool assistance and incentives;
- Emergency ride home;
- Bicycling/walking incentives and amenities;
- Provide on-site locker rooms and showers for employees;
- Offer on-site amenities for employees to reduce mid day trip making;
- Telecommuting and compressed workweeks, when feasible;
- Display in the Main Lobby real-time transportation-related information for tenants' employees and visitors on a 100" flat screen; and
- Promotional efforts.

Transportation Management Association (TMA):

The Transportation Management Association serving businesses in Needham is the 128 Business Council. The Proponent will join and become an active member of the 128 Business Council.

Transportation Monitoring:

Annual traffic counts will be conducted both on-Site and off-Site to evaluate the impact of the Project as compared to the estimated impact as outlined in this report. Off site locations include:

- *Central Avenue at Gould Street*
- *Gould Street at TV Place*
- *Gould Street at the Project Site driveway*
- *Highland Avenue at Gould Street / Hunting Road*

These counts will be collected on a non-holiday week, during midweek days.

TRANSPORTATION MITIGATION

- The Proponent will work with the Town of Needham to contribute funding to a future study of the feasibility of converting the former MBTA railroad ROW north of the Project Site and the Channel 5 property into a shared use path that would connect with Needham Heights to the south and the Charles River to the north.
- *Up to 100 bicycle parking spaces will be provided consisting of covered bicycle storage/long-term bicycle parking on-site and outdoor public bike racks/short-term bicycle parking.*
- *The Project Proponent plans to purchase and implement electric shuttle connectivity to improve public transportation access and accessibility to the Project Site.*
- *Parking facilities will be equipped with up to 400 Electric Vehicle charging stations, with consideration as to how increased EV capacity can be implemented in the future as warranted by demand and market conditions. Proposed cooperation agreement with Channel 5 property for vehicle charging*
- *The Project will include dedicated off-street loading docks to ensure that loading and service operations are handled internal to the buildings and will not impact traffic operations or pedestrian flow on adjacent streets.*



Starcraft Electric Shuttle powered by Phoenix Motorcars

NOANETT ROAD MITIGATION

1. Installing “Do Not Enter” signs between the hours of 7:00-10:00 AM and 3:00-6:00 PM such that the road will be limited to residents only – no through traffic.
2. Commissioning a police detail stationed in an unmarked cruiser, who will issue citations to violators upon opening of the project for the first three months and at such other intervals from time-to-time, as required. We have experience in this regard in Cambridge, MA on Acorn Park Drive and Whittemore Avenue.
3. Reconfiguring the sidewalk entrances to accommodate handicapped accessibility as well as the addition of bike facilities along Gould Street such that these traffic calming measures should slow traffic down and discourage drivers from “cutting through”.
4. Installing a traffic light at Gould Street and Central Avenue to facilitate traffic and encourage users to utilize the Gould/Central light in both directions.
5. Installing “Blind Driveway” signs and “Slow Children” signs as needed.



Example of peak period “Do Not Enter” sign in Cambridge, MA

ROUTE 128 ADD-A-LANE PROJECT

- MassDOT project completed in 2018 to add a lane in each direction on Route 128
- Project included new interchange at Kendrick Street and reconstructed interchange at Highland Avenue
- Traffic study completed in 2019 by McMahon Associates to compare traffic volumes before and after completion of the project

Cooridor	Location	Direction	2012/2013 Pre-Construction ⁽¹⁾		2019 Post-Construction ⁽²⁾		Average % Change ⁽³⁾	
			Morning Peak (vph)	Afternoon Peak (vph)	Morning Peak (vph)	Afternoon Peak (vph)	Morning Peak	Afternoon Peak
Kendrick Street	East of I-95/ Route 128	Eastbound	1,780	490	2,100	870	15.24%	43.68%
		Westbound	430	1,330	740	1,600	41.89%	16.88%
		TOTAL	2,210	1,820	2,840	2,470	22.18%	26.32%
	West of I-95/ Route 128	Eastbound	1,330	540	1,000	390	-33.00%	-38.46%
		Westbound	<u>330</u>	<u>1,360</u>	<u>300</u>	<u>770</u>	-10.00%	-76.62%
		TOTAL	1,660	1,900	1,300	1,160	-27.69%	-63.79%

(1) Calculated through movements from 2012/2013 Pre-Construction Turning Movement Counts
 (2) Calculated through movements from 2019 Post-Construction Turning Movement Counts
 (3) Differential between 2012/2013 Pre-Construction volumes and 2019 Post-Construction Volumes

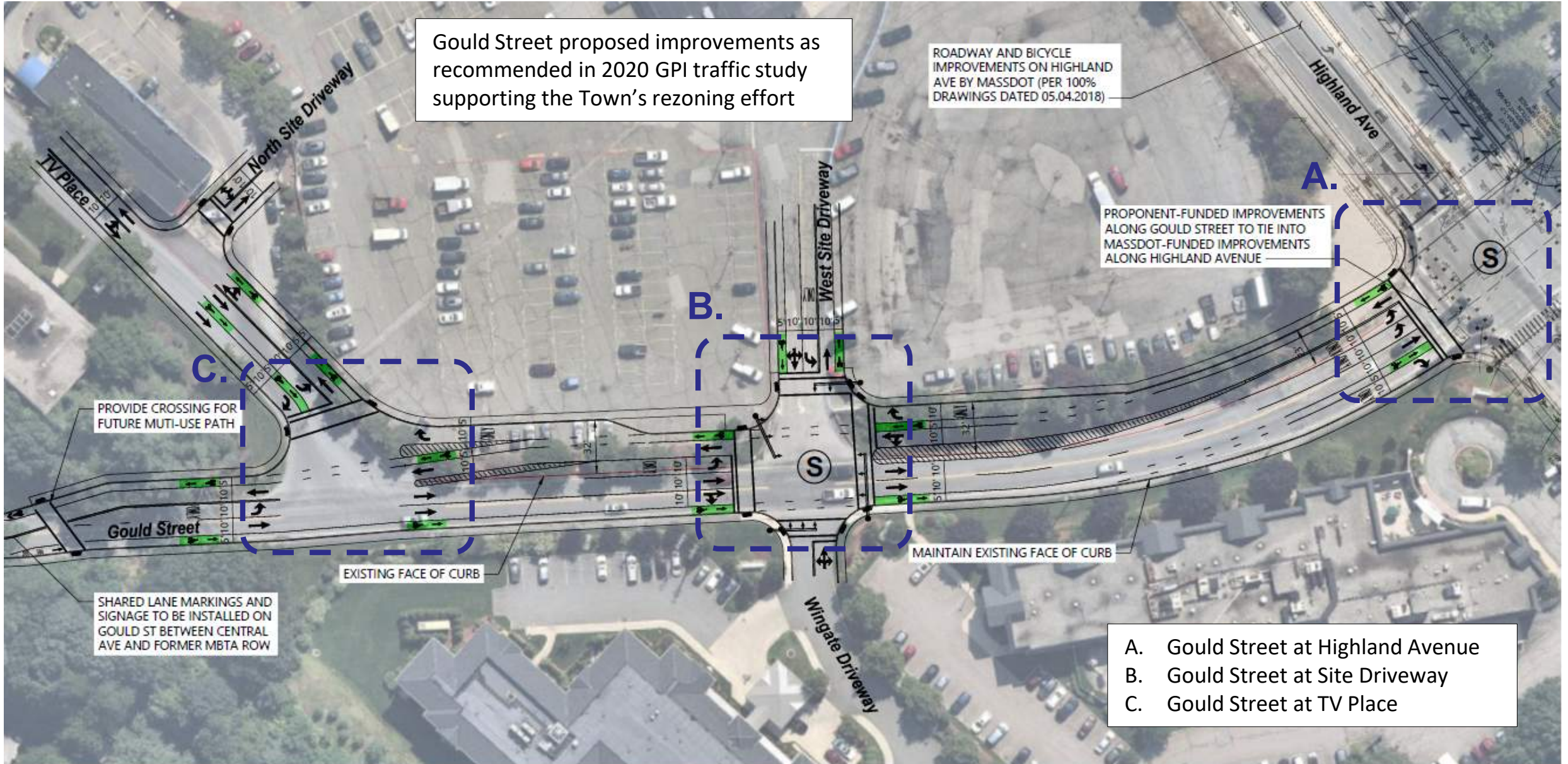
- Project resulted in a significant decrease in cut-through traffic between 10% and 75% for Kendrick Street / Hunting Road west of Route 128

HUNTING ROAD POTENTIAL MITIGATION SUGGESTIONS

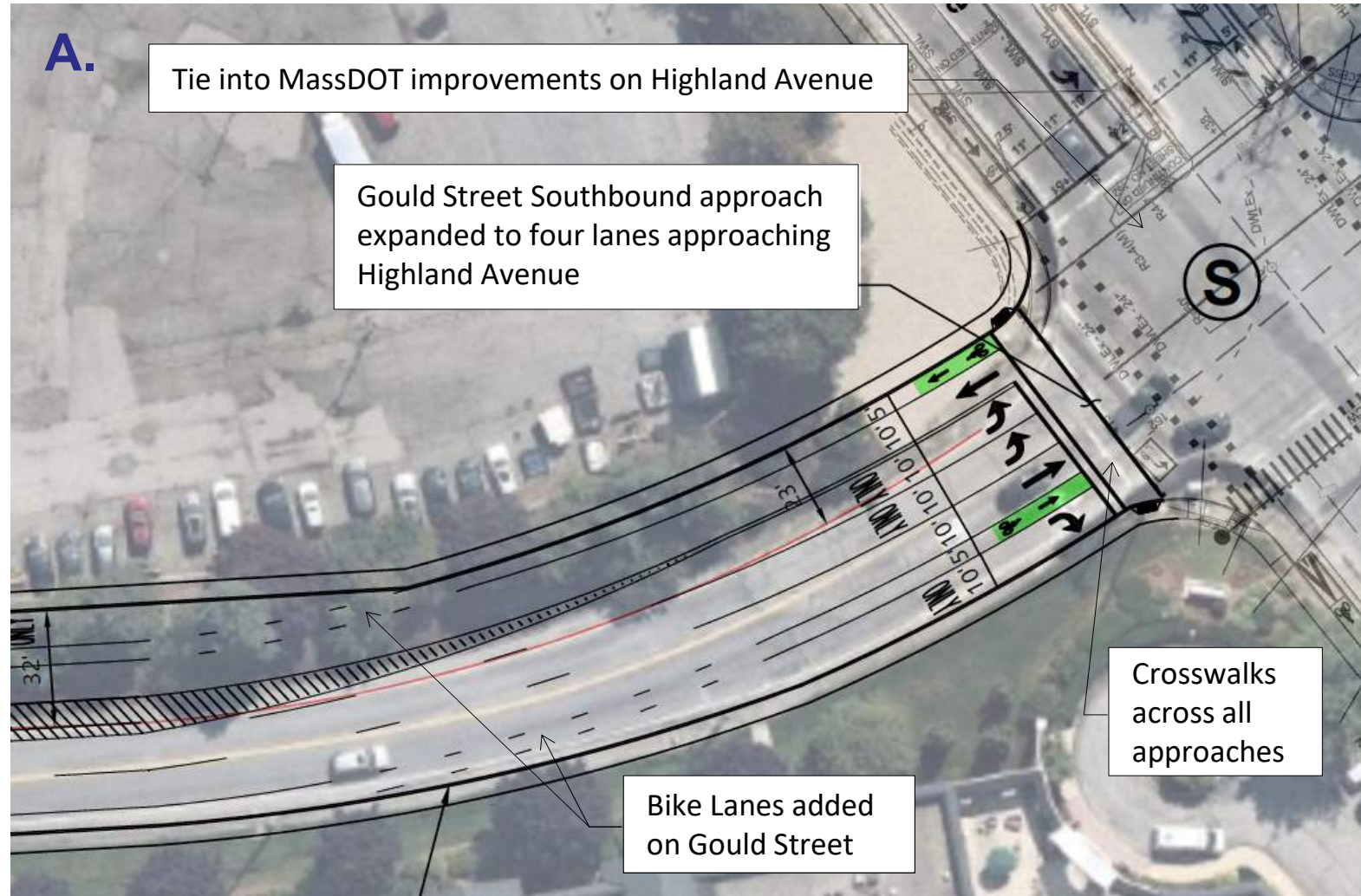


- Speed limit signs with embedded radar
*Radar alerts drivers to their current speed in comparison to the posted speed limit to try to slow speeds and create driver awareness
Can be permanent or temporary installments*
- Intermittent police speed detail to enforce speed limit
- Traffic monitoring to understand if cut-through traffic activity occurs and when
- Installing directional signage to deter through traffic on Hunting Road

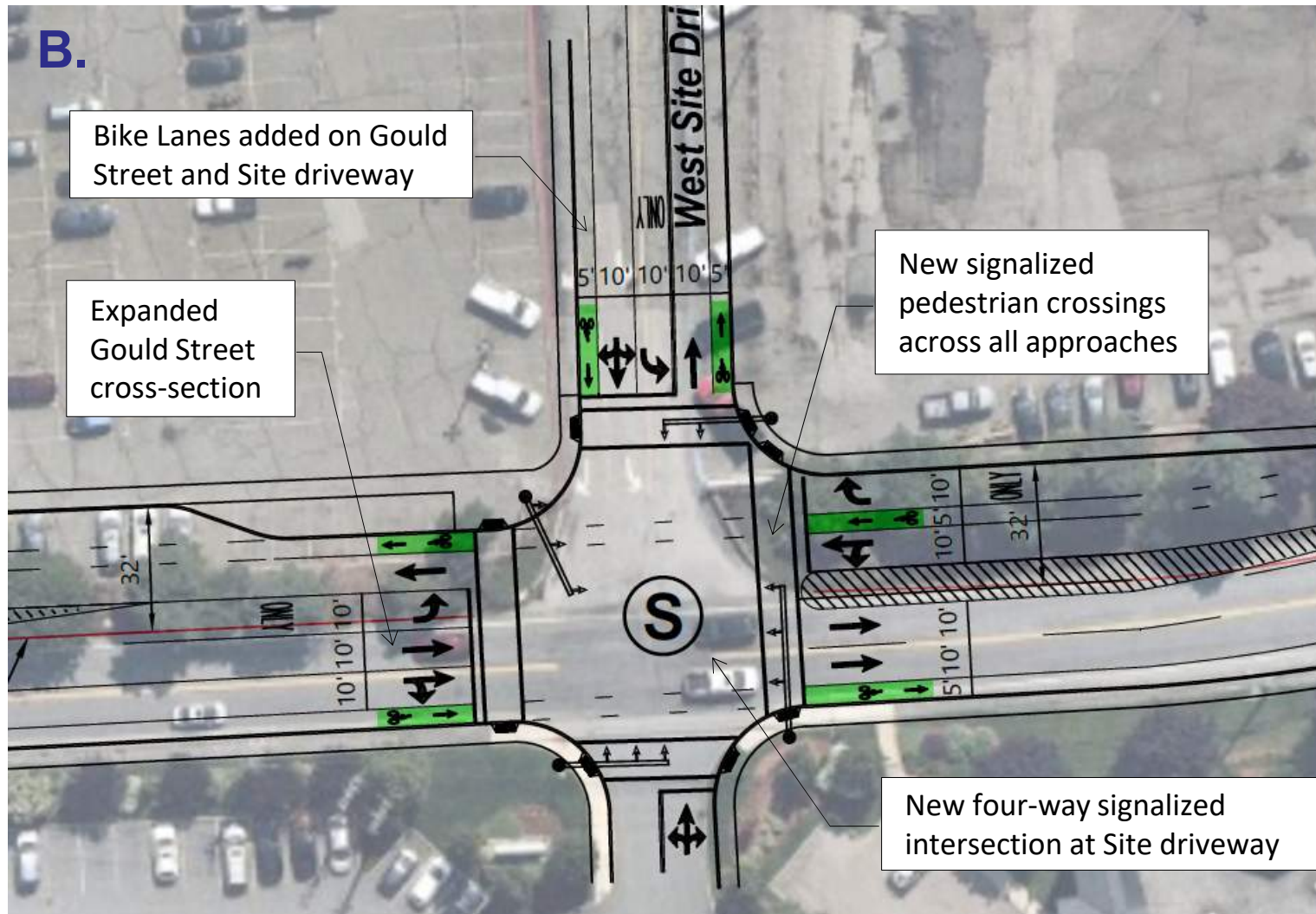
GOULD STREET PROPOSED IMPROVEMENTS



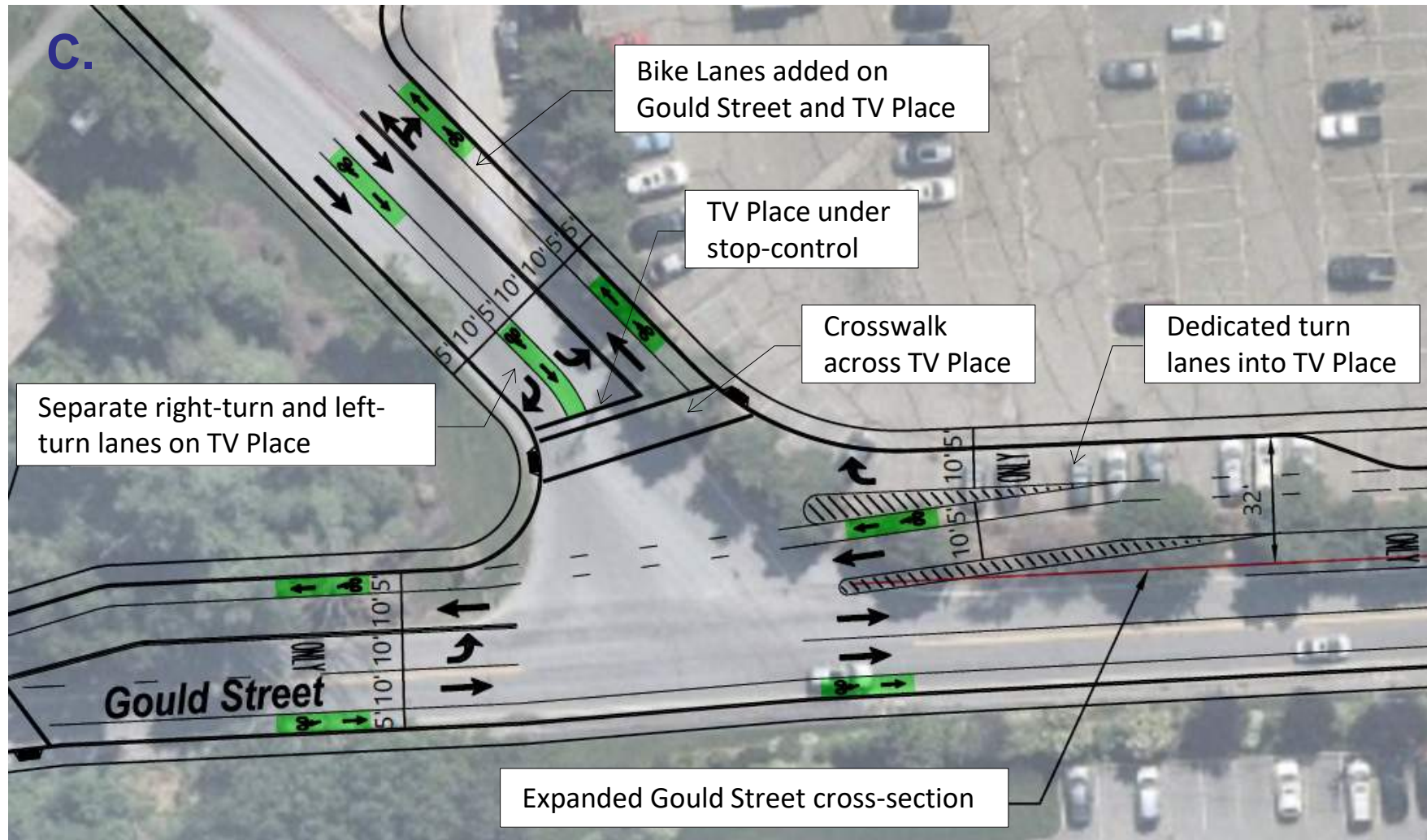
GOULD STREET AT HIGHLAND AVENUE



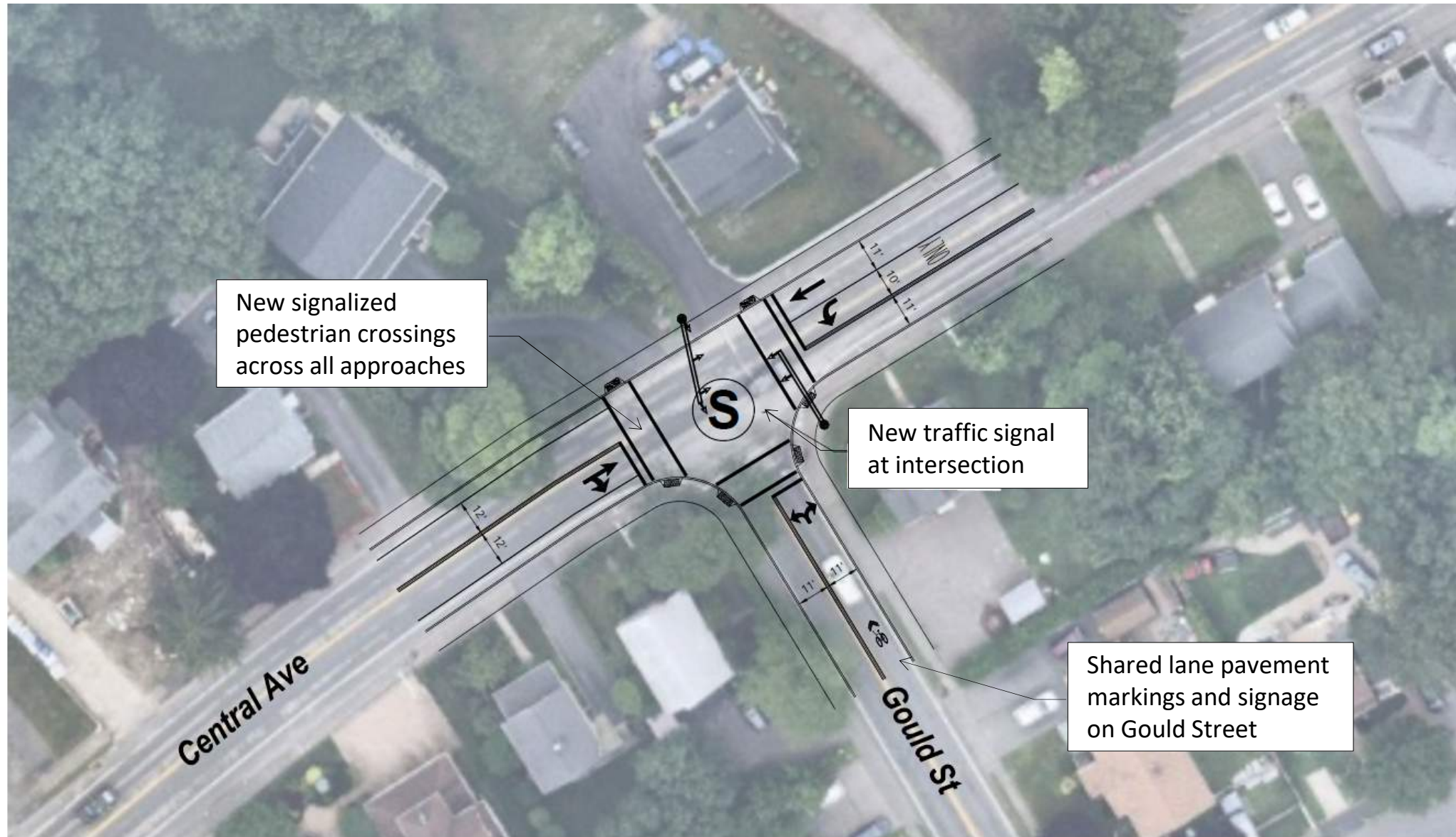
GOULD STREET AT SITE DRIVEWAY / WINGATE DRIVEWAY



GOULD STREET AT TV PLACE



GOULD STREET AT CENTRAL AVENUE



FOR ANY QUESTIONS, PLEASE E-MAIL
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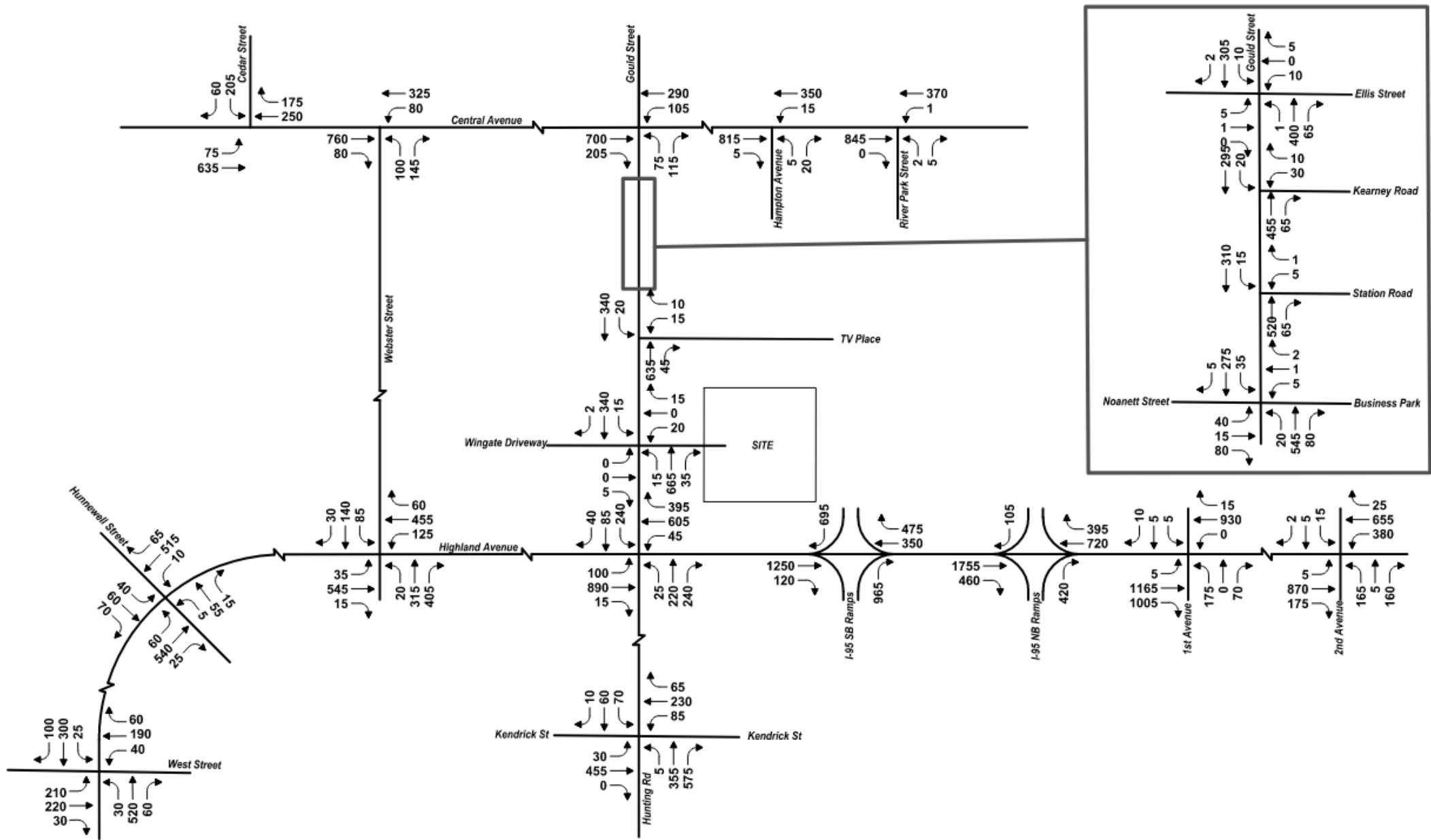
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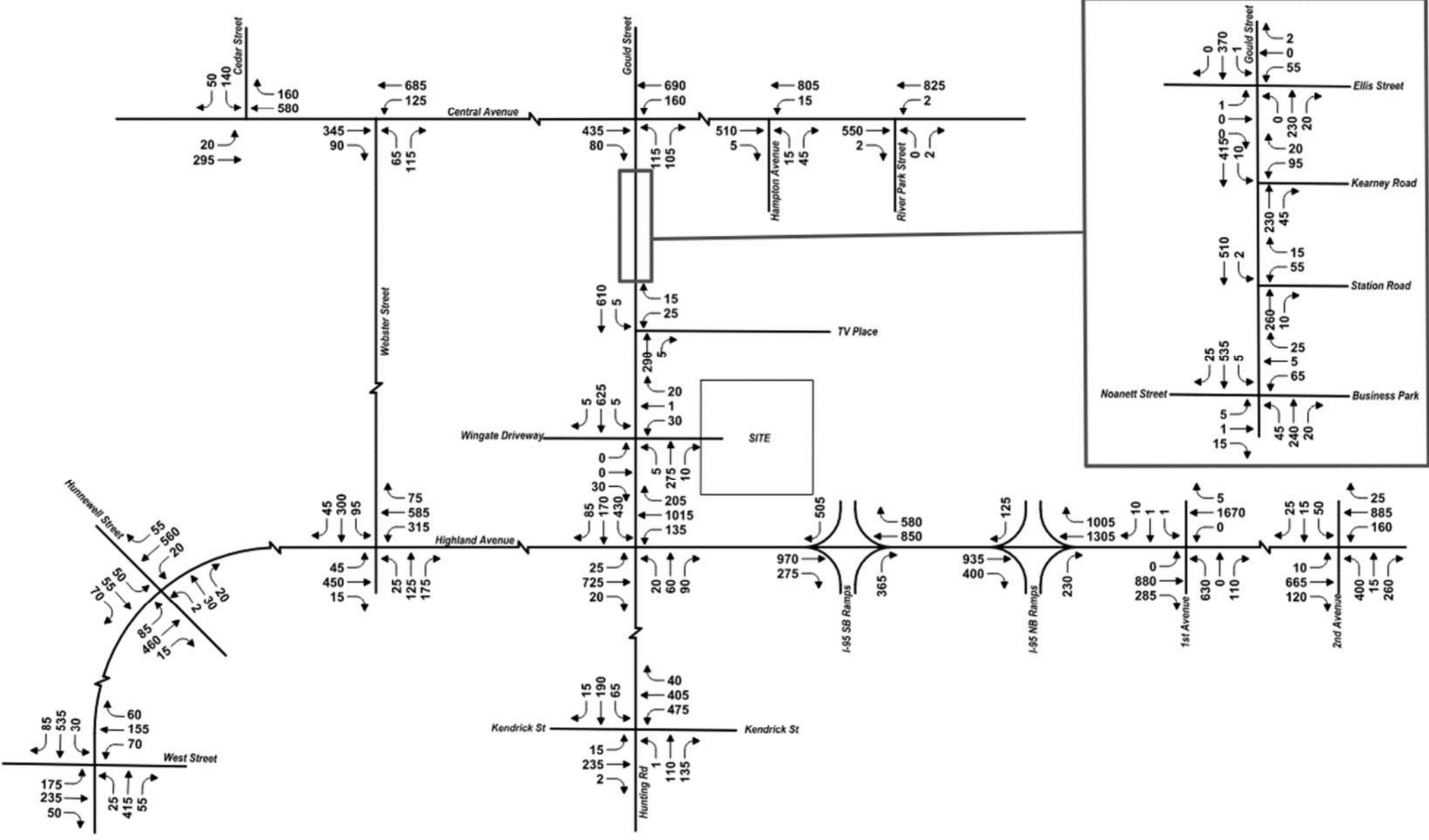


Offices located throughout the east coast

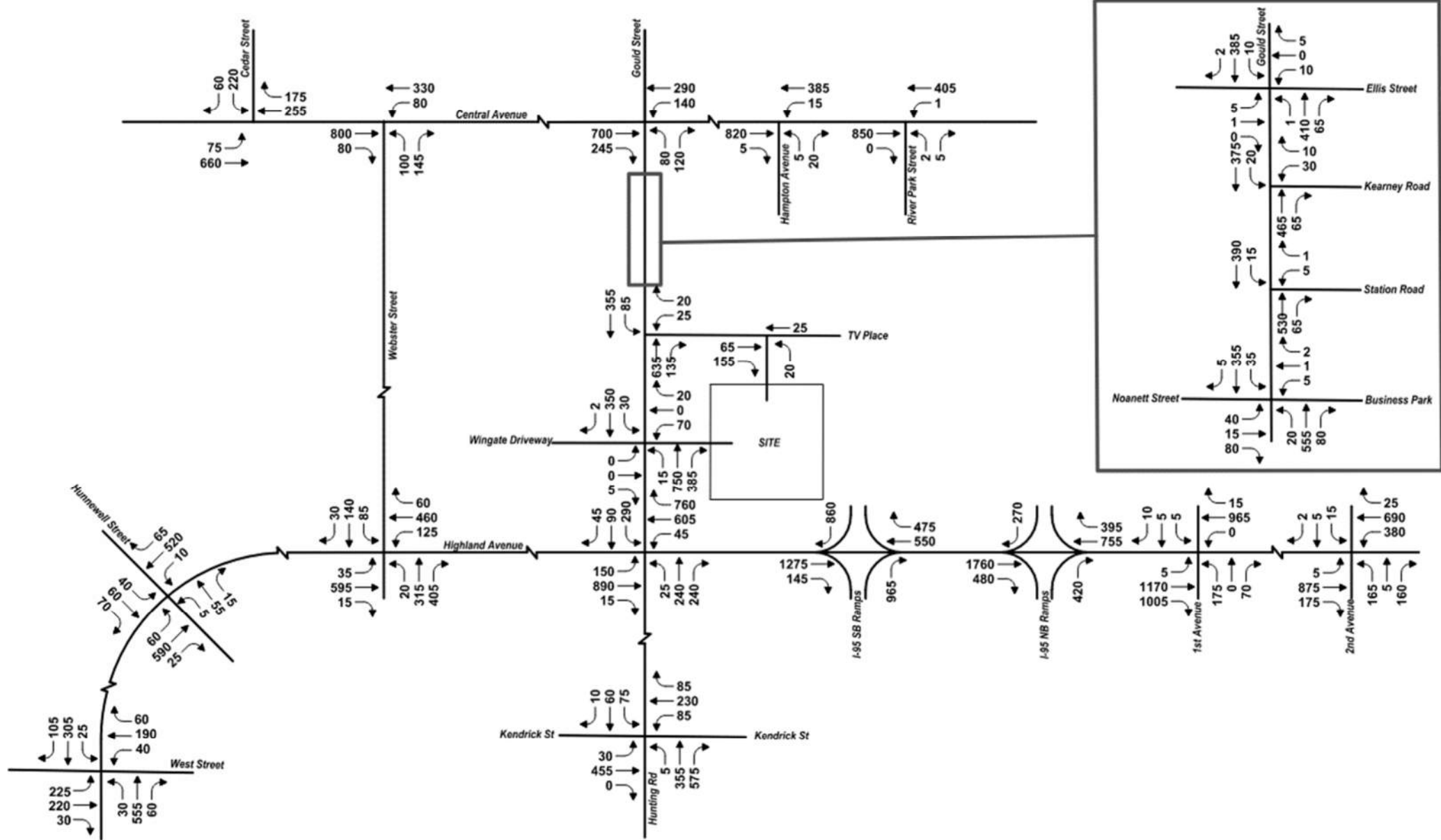
NO-BUILD CONDITIONS | MORNING PEAK HOUR



NO-BUILD CONDITIONS | EVENING PEAK HOUR



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