

# **THE GROTON FARMS**

500 Main Street Groton – May 10, 2023



# AGENDA

- Bayside Engineering Qualifications
- Traffic Impact and Access Study Summary
- Site Components
- Recommended Offsite Improvements
- Response to MDM (Peer Review) Letter

# BAYSIDE ENGINEERING

- Kenneth P. Cram, P.E.
- Director, Traffic Engineering
- Overall experience
- Projects completed around Groton



# LOCATION

## 500 MAIN STREET

- Project located west of the center of Groton on Main Street
- Formerly Deluxe Corporation site
- 128,000+ SF office building



# PROJECT OVERVIEW

- 3 Multi-Family Buildings – 56 units each (168 units)
  - 4 Stories
  - Elevated buildings
  - 1&2-bedroom units
- 32 Townhomes
  - 2&3-bedroom units
  - Single car garage in each unit
- Covered Parking
  - 24 garages
- Clubhouse
- Other Amenities



# STUDY AREA

Nod Road

500  
Main  
Street

Anytime Fitness

Country Kids Child  
Development

Groton Residential  
Gardens

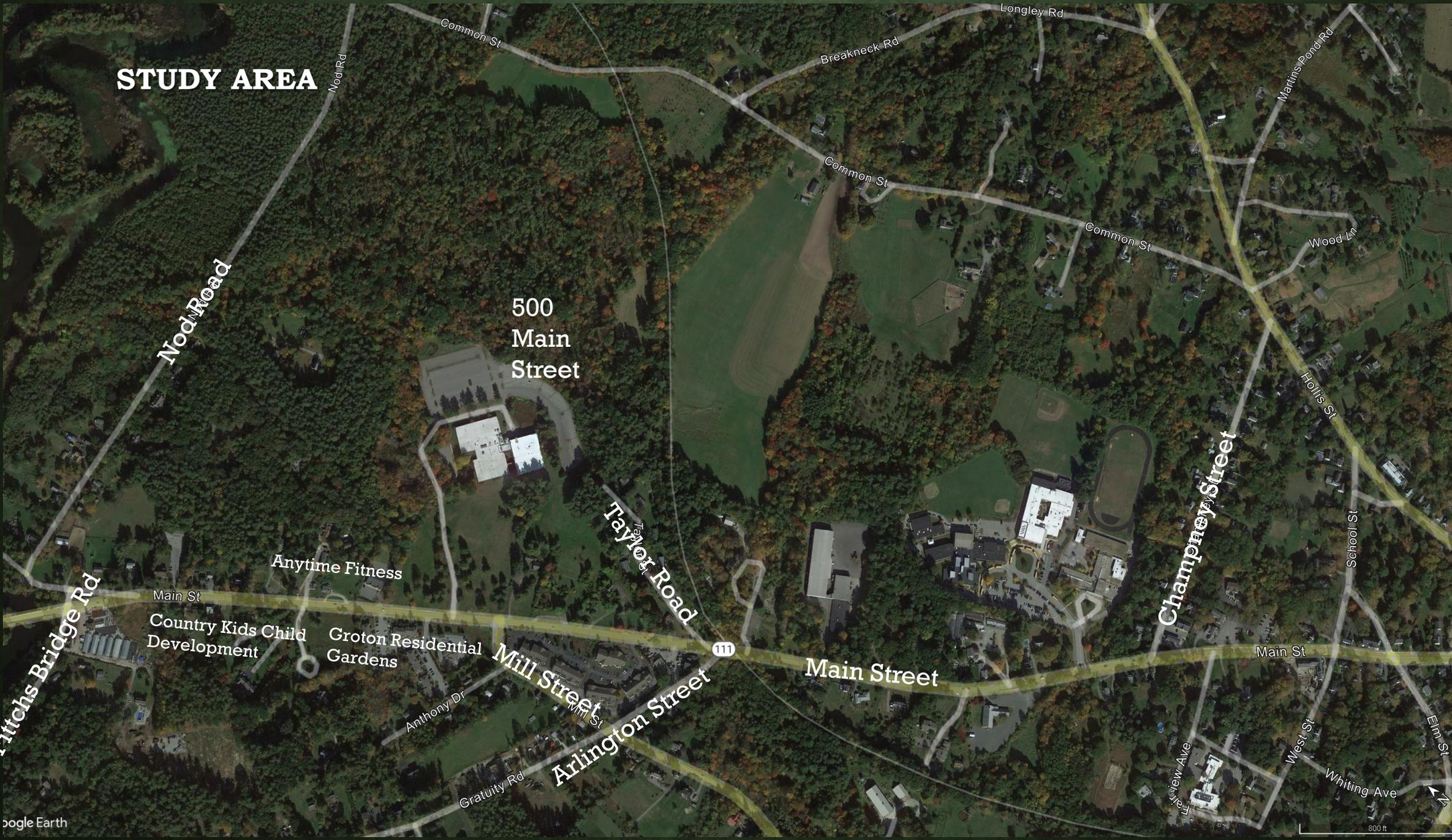
Mill Street

Arlington Street

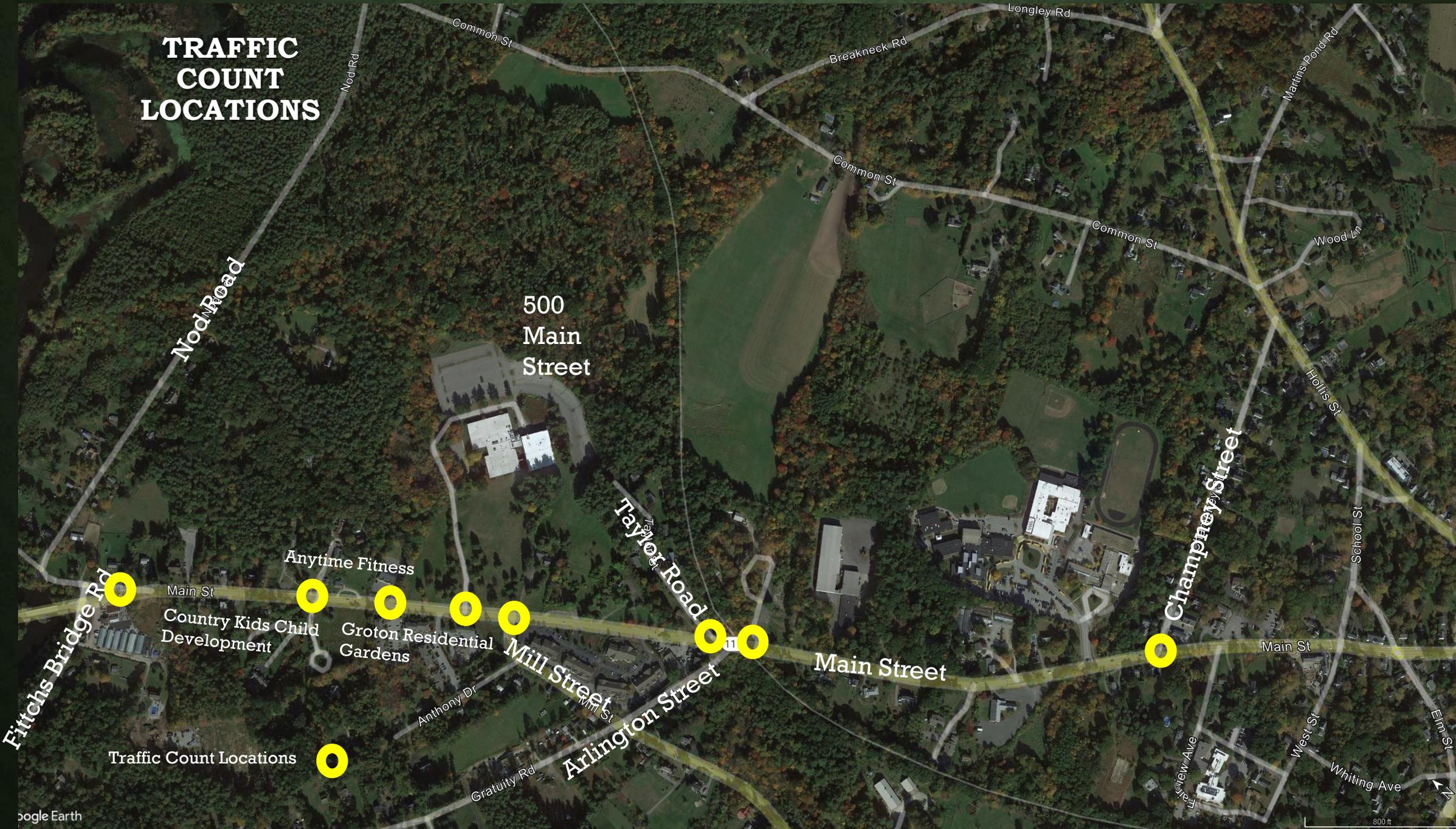
Main Street

Champany Street

Main St



# TRAFFIC COUNT LOCATIONS



500  
Main  
Street

Nod Road

Fittchs Bridge Rd

Anytime Fitness

Main St

Country Kids Child  
Development

Groton Residential  
Gardens

Mill Street

Taylor Road

Arlington Street

Main Street

Champrney Street

Main St

Traffic Count Locations

# TIAS OVERVIEW

- Existing Traffic Volumes on Main Street obtained February 2, 2022 - 16,550 Vehicles Per Day
  - Weekday Morning 7:00 to 9:00 AM – 1,382 Vehicles per Hour
  - Weekday Evening 4:00 to 6:30 PM – 1,551 Vehicle per Hour
- Vehicle Speeds – Posted Speed 40 MPH
  - Average Speed 38.9 mph
  - 85<sup>th</sup> percentile speed 43 mph
- Motor Vehicle Crash Data
  - Total of 32 crashes – no fatalities
  - No intersections on MassDOT Highway Safety Improvement Program List

**EXISTING TRIP GENERATION SUMMARY**

	<u>Existing Office Building Trips<sup>a</sup></u>
Average Weekday Daily Traffic	1,442
<i>Weekday Morning Peak Hour:</i>	
Entering	183
<u>Exiting</u>	<u>25</u>
Total	208
<i>Weekday Evening Peak Hour:</i>	
Entering	35
<u>Exiting</u>	<u>169</u>
Total	204

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<sup>a</sup>Based on ITE LUC 710 – General Office Building; 128.4 ksf.

**EXISTING  
TRIP  
GENERATION  
SUMMARY  
(TABLE 5)**

**PROPOSED TRIP GENERATION SUMMARY**

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	<u>Townhouse Trips<sup>a</sup></u>	<u>Apartment Trips<sup>b</sup></u>	<u>Total Trips</u>
Average Weekday Daily Traffic	194	754	948
<i>Weekday Morning Peak Hour:</i>			
Entering	3	14	17
<u>Exiting</u>	<u>8</u>	<u>48</u>	<u>56</u>
Total	11	62	73
<i>Weekday Evening Peak Hour:</i>			
Entering	9	40	49
<u>Exiting</u>	<u>6</u>	<u>26</u>	<u>32</u>
Total	15	66	81

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<sup>a</sup>Based on ITE LUC 215 – Single-Family Attached Housing; 32 dwelling units.

<sup>b</sup>Based on ITE LUC 221 – Multifamily Housing (Mid-Rise); 168 dwelling units.

**PROPOSED  
TRIP  
GENERATION  
SUMMARY  
(TABLE 6)**

# TRAFFIC VOLUMES

- Compared to Deluxe when in operation – 494 Fewer daily vehicle trips
  - Weekday Morning Peak – 135 Fewer
  - Weekday Evening Peak – 123 Fewer

# MILL STREET NORTHBOUND TO MAIN STREET OBSERVED DELAYS AND QUEUES

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<b>Time Period</b>	<b>Average Peak Hour Delay per Vehicle<sup>a</sup> (sec)</b>	<b>Minimum Peak Hour Delay Observed (sec)</b>	<b>Maximum Peak Hour Delay per Vehicle Observed (sec)</b>	<b>Average Vehicle Queue Observed (Veh)</b>	<b>Maximum Queue Observed (Veh)</b>
<b>Weekday Morning Peak Hour</b>	21	0	132	1.4	5
<b>Weekday Evening Peak Hour</b>	23	1	81	2.2	6

Based on count data compiled on February 2, 2022. Morning Peak Hour from 7:00 – 8:00 AM.  
Evening Peak Hour from 4:30 – 5:30 PM.

**PROPOSED TRIP DISTRIBUTION**

<u>Route</u>	<u>Direction</u>	<u>Percent of Trips</u>
Main Street	West	3
Main Street	East	80
Mill Street	South	11
Champney Street	North	<u>6</u>
TOTALS		100

**PROPOSED  
TRIP  
DISTRIBUTION  
(TABLE 7)**



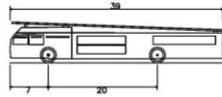
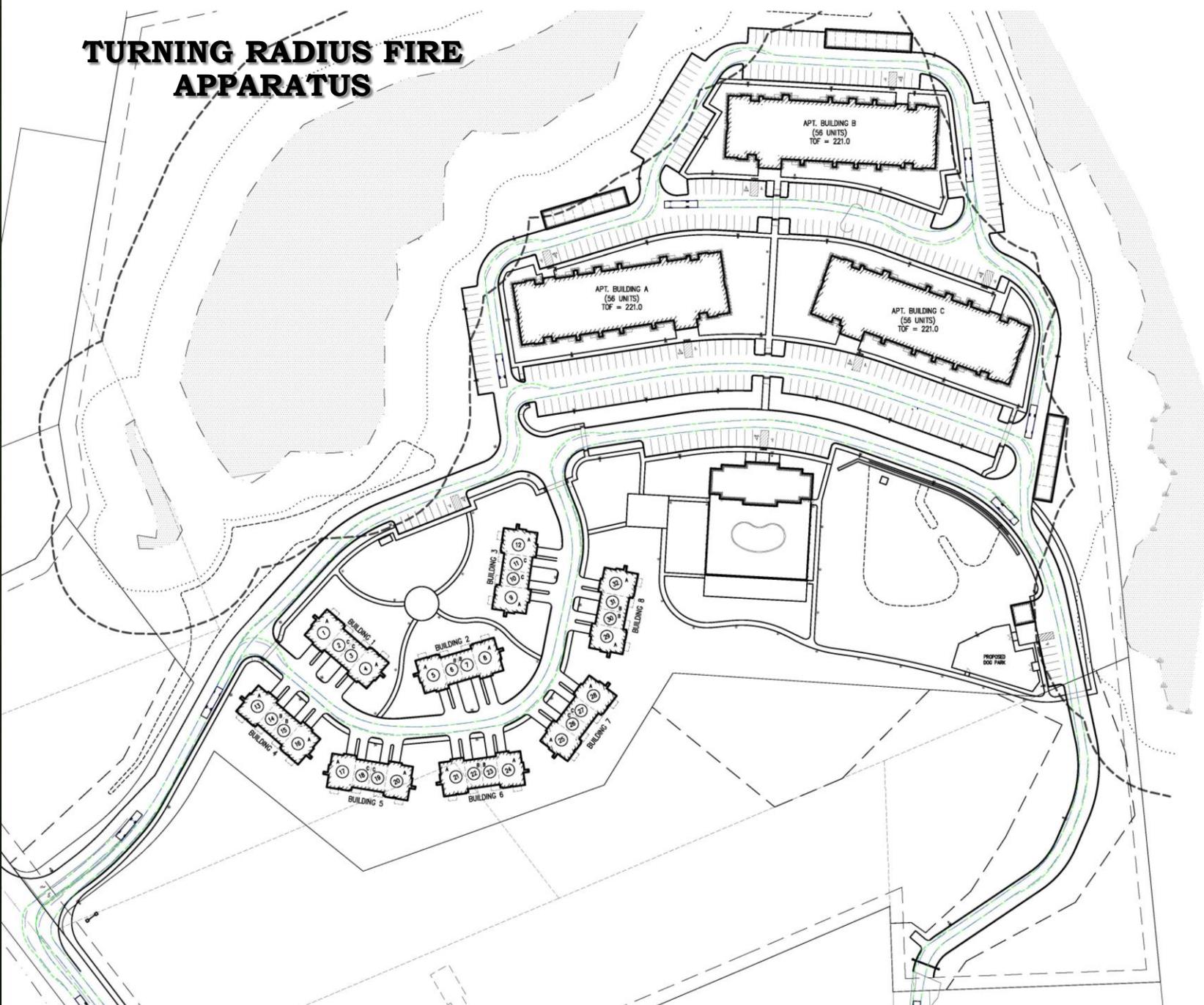
# SITE COMPONENTS

- EV Charging Stations
  - 56 garages will have 220-volt outlets for charging
  - Additional charging stations will be installed outside each multi-family building and the clubhouse (quantity TBD)
  - Approximately 30% of the residential units will have access to charging stations
  - Applicant will meet with GELD to discuss installation of infrastructure to support future charging stations
- All signs to be MUTCD compliant
- All pedestrian access within project will be ADA compliant

## **SITE COMPONENTS**

- Applicant will work with school bus company to ensure safe pick-up and drop-off of students
- “Delivery” parking designation in one spot outside each multifamily building and clubhouse
- Roads/Turning radius designed to support largest emergency vehicle
- Applicant has requested information regarding ZIP cars
- Applicant investigating public transportation options for residents
- Parking for 404 vehicles

# TURNING RADIUS FIRE APPARATUS



Aerial Fire Truck  
 Overall Length  
 Overall Width  
 Overall Body Height  
 Min Body Ground Clearance  
 Track Width  
 Lock-to-lock time  
 Max Wheel Angle

## DESIGN VEHICLE

NOT TO SCALE

LEGEND	
PROP. FEATURE	DESCRIPTION
	Turning Radius Path
	Proposed Dog Park

## **RECOMMENDED OFFSITE IMPROVEMENTS**

- Crosswalk with Rectangular Rapid Flashing Beacon (RRFB) to safely cross Main Street
- Sidewalk along property frontage
- TDM Program
- Discussions with MassDOT underway relative to highway access and safety
- Post Development review of Mill St / Main St and Champney St / Main St

# MDM PEER REVIEW

- Received MDM Letter of May 3<sup>rd</sup>
- Currently reviewing MDM recommendations
- Any plan updates will be compiled into next submission scheduled after civil review
- Written response to MDM will be provided to ZBA and MDM

**THANK YOU**