

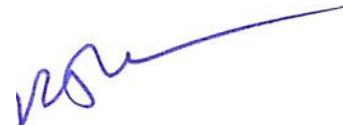
MEMORANDUM

DATE: November 13, 2023

TO: Mr. Danny Paisner
Scrub-A-Dub Auto Wash Centers, Inc.
172 Worcester Road
Natick, MA 01760

FROM: Robert J. Michaud, P.E. – Managing Principal
Daniel A. Dumais, P.E. – Senior Project Manager

RE: **Proposed ScrubaDub Carwash – Revised Site Plan Layout**
171 Pelham Street, Methuen, Massachusetts

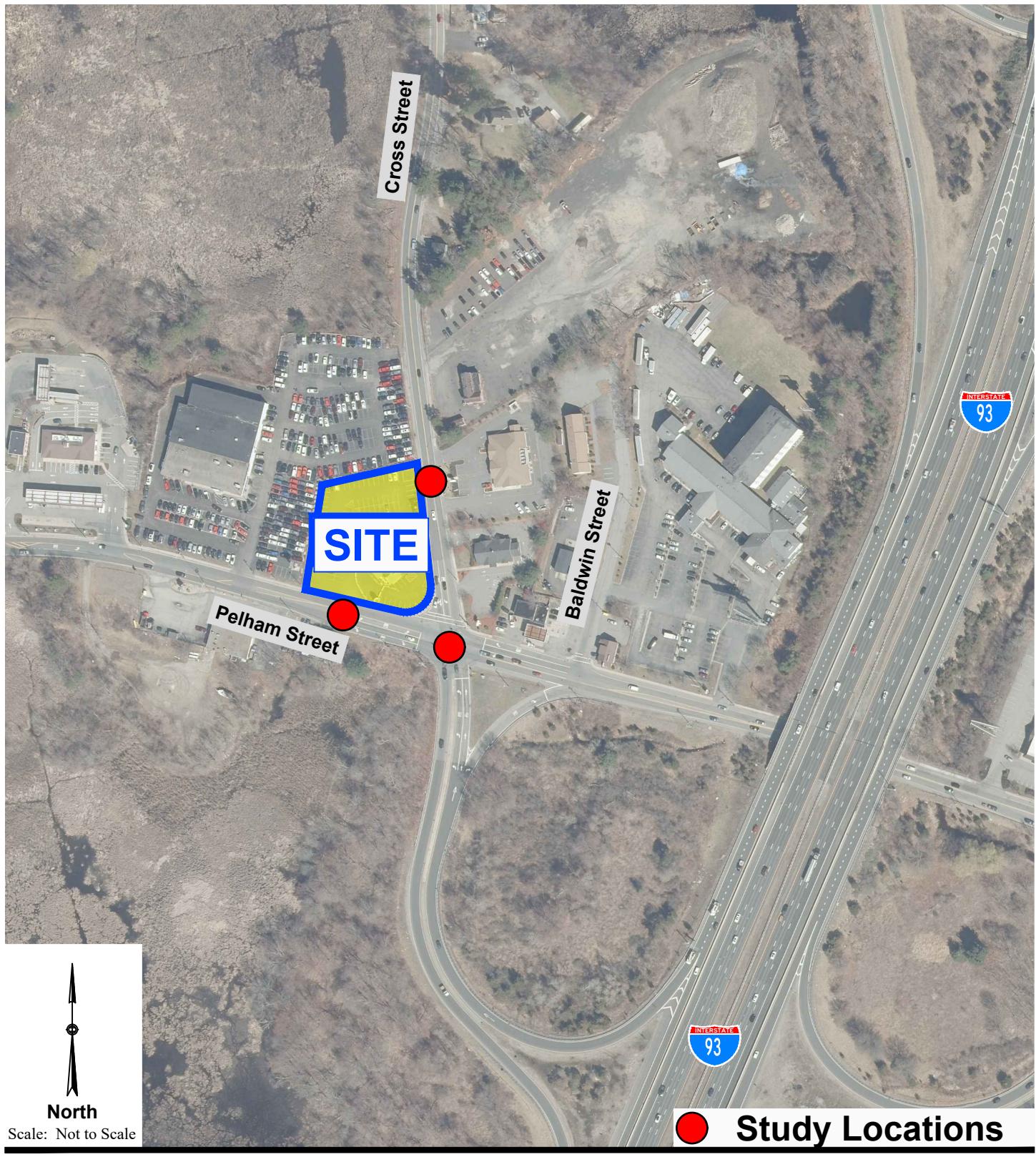


EXECUTIVE SUMMARY

MDM Transportation Consultants, Inc. (MDM) has conducted an updated traffic impact assessment (TIA) for a proposed ScrubaDub Car Wash development to be located at 171 Pelham Street in Methuen, Massachusetts. Based on initial feedback from the City, a revised site plan layout has been prepared; access/egress to the Site will now retain two curb cuts; one curb cut along Pelham Street that will allow full access but will restrict egress movements to right turn out only, and one curb cut along Cross Street that will allow egress only movements. The location of the site relative to the adjacent roadway network is shown in **Figure 1**; the preliminary site layout prepared by MetroWest Engineering Inc. is presented in **Figure 2**.

Key findings of the assessment are as follows:

Trip Generation. The proposed ScrubaDub use when compared to the recent historical use of the property, will result in approximately 43 additional vehicle trips during the weekday morning peak hour, 57 additional trips during the weekday midday peak hour, 67 additional trips during the weekday evening peak hour, and 135 additional trips during the Saturday midday peak hour. Refer to summary table below.

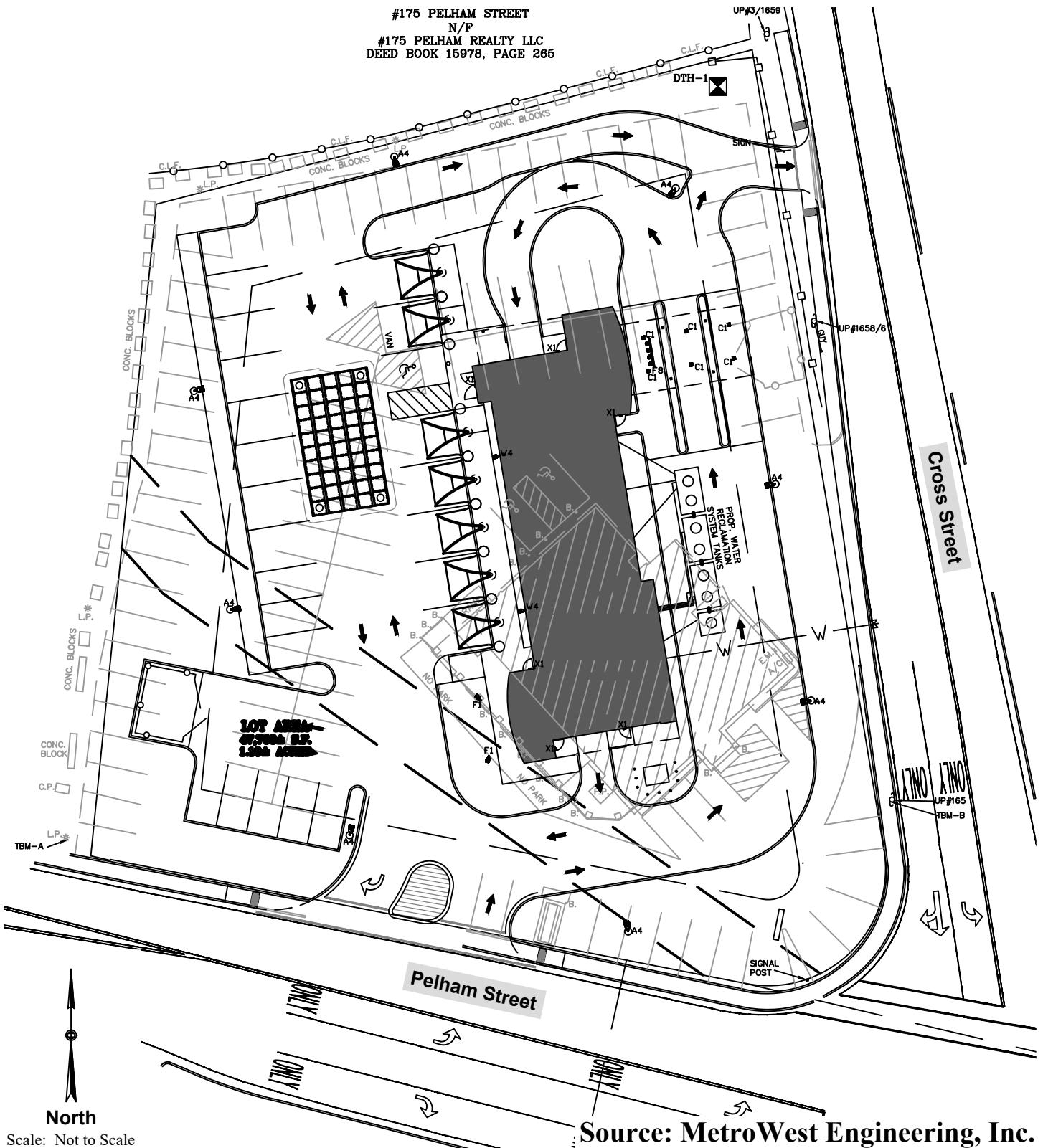


MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Figure 1

Site Location

#175 PELHAM STREET
N/F
#175 PELHAM REALTY LLC
DEED BOOK 15978, PAGE 265



Source: MetroWest Engineering, Inc.

MDM TRANSPORTATION CONSULTANTS, INC.

Planners & Engineers

Preliminary Site Plan

Figure 2

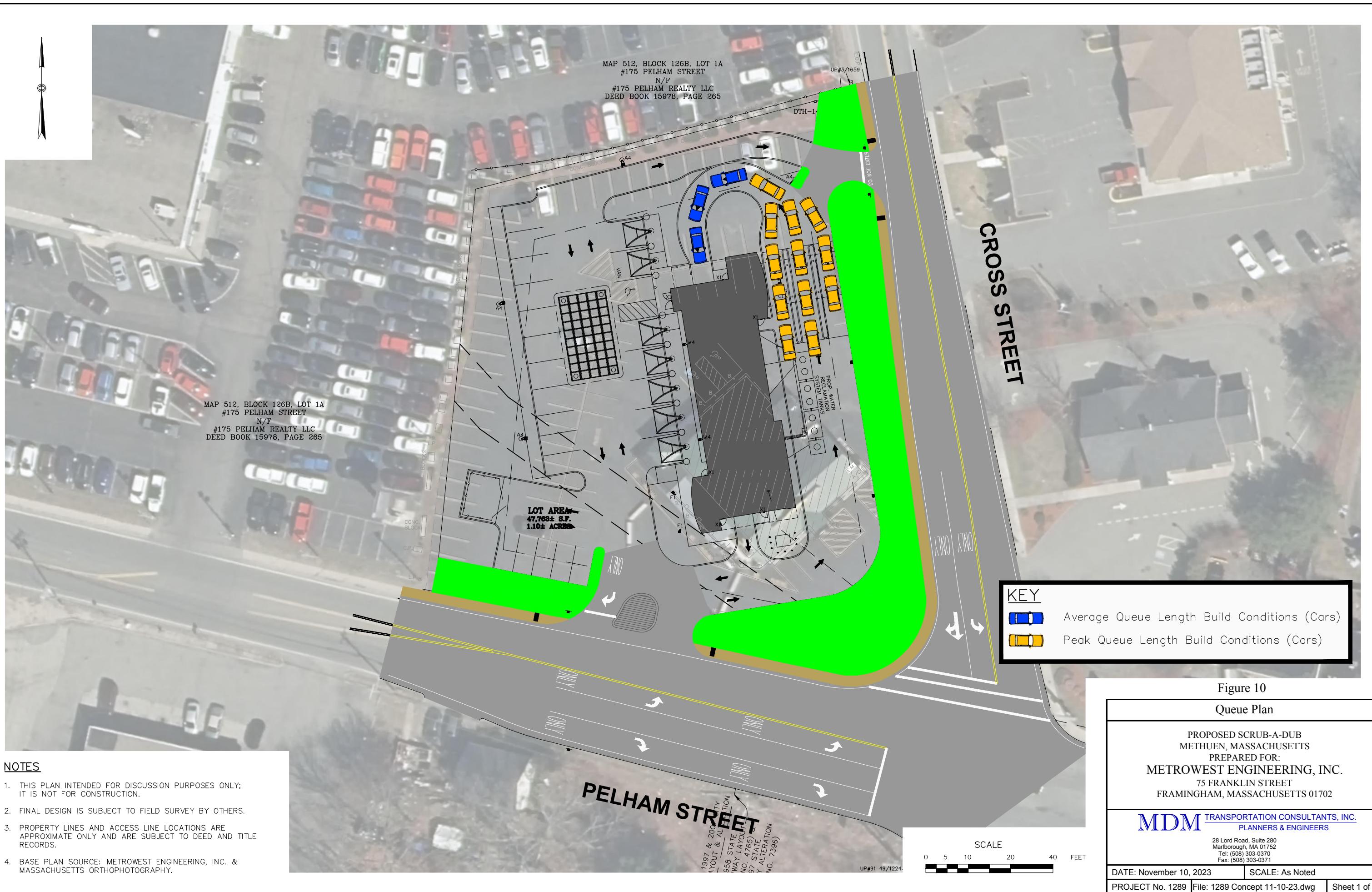
TRIP-GENERATION COMPARISON

Period/Direction	Existing Use ¹	Proposed Car Wash ²	Δ
<i>Weekday Morning Peak Hour:</i>			
Entering	4	25	+21
<u>Exiting</u>	<u>3</u>	<u>25</u>	<u>+22</u>
Total	7	50	+43
<i>Weekday Evening Peak Hour:</i>			
Entering	18	47	+29
<u>Exiting</u>	<u>19</u>	<u>47</u>	<u>+28</u>
Total	37	94	+57
<i>Weekday Evening Peak Hour:</i>			
Entering	27	58	+31
<u>Exiting</u>	<u>23</u>	<u>59</u>	<u>+36</u>
Total	50	117	+67
<i>Saturday Midday Peak Hour:</i>			
Entering	32	91	+59
<u>Exiting</u>	<u>14</u>	<u>90</u>	<u>+76</u>
Total	46	181	+135

¹Based on Count Data collected in June 2023.

Adequate Operational Capacity. The proposed development does not result in any significant change in operations along Pelham Street or Cross Street compared to Baseline conditions. The proposed site driveway approaches to Pelham Street and Cross Street will operate at LOS B or better with minimal on-site queuing. Furthermore, improvements as outlined in the *Conclusions and Recommendations* section of this report will enhance safety and operations with regards to the development.

Adequate On-Site Queue Storage. The car wash tunnel configuration and queue lanes can accommodate the projected maximum queues with limited impact to site access, circulation or parking and will not have any impact on Pelham Street or Cross Street. The projected peak hour car wash tunnel trip activity is estimated at approximately 91 trips under a theoretical peak season condition. The critical peak hour demand under this theoretical condition is estimated to result in a maximum estimated queue of 15 vehicles and an estimated queue of 7 cars under maximum efficiency conditions. The car wash tunnel configuration and queue lane can accommodate a 32-vehicle queue with no impact to site access, circulation or parking and would not impact Pelham Street or Cross Street. See TIA Figure 10 showing average and maximum queues for the carwash.

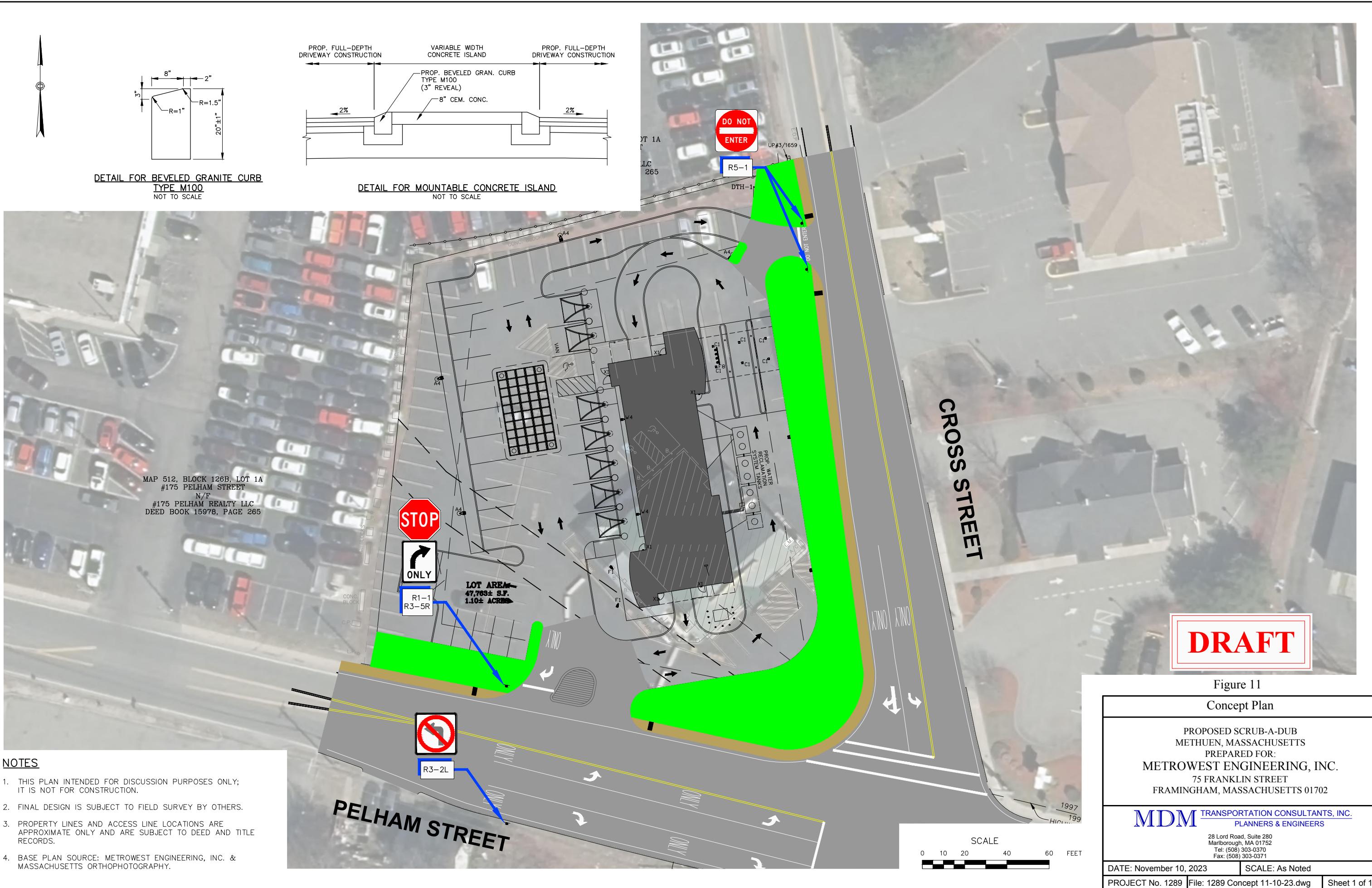


CONCLUSIONS AND RECOMMENDATIONS

In summary, the projected traffic increases due to the proposed development will be nominal in the immediate study area (2 vehicles or less per minute during the peak periods) and adequate capacity is available under 2023 Design Year conditions along Pelham Street and Cross Street to accommodate the proposed site use. The project is not projected to materially change any reported operating levels compared to Baseline conditions. The car wash tunnel configuration and queue lanes can accommodate the projected maximum queues with limited impact to site access, circulation or parking and will not have any impact on Pelham Street or Cross Street. In addition, access/egress along Pelham Street and Cross Street will be designed to ensure that adequate sight lines are provided in accordance with recommended AASHTO criteria based on posted travel speeds.

MDM recommends the following design elements to accommodate site-generated traffic:

- *Pelham Street Driveway – Signs and Pavement Markings.* The driveway alignment, widths and curb radii have been designed to achieve (a) approximate perpendicular orientation with Pelham Street; (b) curb radii as required to accommodate Town emergency vehicles and single unit/refuse truck design vehicles for the Site. A MUTCD compliant “STOP” sign (R1-1), STOP line pavement markings, “Right Turn Only sign (R3-5R), and right turn only pavement markings are recommended on the proposed driveway approach to Pelham Street. The driveway has been designed to include a mountable concrete island to promote the right turn only restriction and provide separation between entering and exiting movements along Pelham Street while allowing for emergency vehicle access/egress. To further enhance the right turn only restriction onto Pelham Street, a “No Left Turn sign (R3-7L) sign is recommended along Pelham Street facing the driveway. On-site pavement markings and signage should be provided to promote the car wash tunnel lanes, escape lane, control on-site traffic, height limitations, and reinforce driveway restrictions and on-site circulation restrictions. The signs and pavement markings shall conform to MUTCD standards. The conceptual access/egress plan is shown in **Figure 11**.
- *Cross Street Driveway – Signs and Pavement Markings.* The driveway alignment, widths and curb radii have been designed to achieve (a) approximate perpendicular orientation with Cross Street; (b) curb radii as required to accommodate passenger vehicles for the Site. A MUTCD compliant “STOP” sign (R1-1), STOP line pavement markings, “Do Not Enter” signs (R5-1), and “Do Not Enter” pavement markings are recommended on the proposed driveway approach to Cross Street. The signs and pavement markings shall conform to MUTCD standards. The conceptual access/egress plan is shown in **Figure 11**.



- *Maintain Clear Driveway Sight Lines.* Existing and/or new plantings (shrubs, bushes) and structures (walls, fences, etc.) should be maintained at a height of 2 feet or less within the sight line triangles with respect to Pelham Street and Cross Street to provide unobstructed sight lines for vehicles entering and exiting the proposed site driveways.
- *Escape Lane.* The Proponent has designed the Site to provide the ability to by-pass the car wash tunnel and exit to Cross Street in case a vehicle enters the queue but does not fit into the tunnel or should the tunnel be shut down.