

MEMORANDUM

DATE: May 10, 2019

TO: Ms. Kate Scott, Executive Director
Neighborhood House Charter School
21 Queen Street
Dorchester, MA 02122

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



RE: **Proposed Neighborhood House Charter School (NHCS) Mitigation Plan**
21 Queen Street – Dorchester, MA

MDM Transportation Consultants, Inc. (MDM) has prepared traffic mitigation assessment and summary for the proposed Neighborhood House Charter School located at 21 Queen Street in Dorchester, Massachusetts. The location of the Site relative to the adjacent roadway network is shown in **Figure 1**. This evaluation documents anticipated traffic generation characteristics and pick-up/drop-off operations for the proposed school expansion, summarizes site access and circulation features associated with the proposed site plan, and summarizes the mitigation commitments by NHCS. Key findings of the study are as follows:

In summary, the proposed site layout has been designed to reduce or eliminate queuing impacts that currently occur on Claymont Terrace while also improving school bus operations. The increased on-site parking capacity will also reduce the potential for staff parking on neighborhood streets. The traffic increases due to the project will be minimal and will remain within day-to-day fluctuations of the total intersection volumes in the area with an increase of between 2-3 percent at the critical Neponset Street intersections with King Street and Claymont Terrace. NHCS further commits to design of off-site improvements on neighborhood streets aimed at reducing illegal parking that impairs school bus circulation, enhancing traffic capacity and improving pedestrian crossings. NHCS will pay for the design and reasonable improvement costs and NHCS's continued diligent application of a traffic management program will maximize safe and efficient pedestrian and vehicle flows.



Figure 1

PROJECT DESCRIPTION

The Neighborhood House Charter School Foundation (the “Proponent”) acquired the Project Site at 21 Queen Street in 2004 and undertook an extensive renovation and expansion of the previously existing building. The school moved into the completed space in 2006. The current Neighborhood House Charter School building at 21 Queen Street is a five (5)-story building totaling 68,650 square feet (sf). Within the Project Site there is also an outdoor recreation area (including basketball court, turf field, and playground) and parking for fifty-nine (59) vehicles, which exceeds the current zoning requirement of 55 on-site parking spaces.

Upon occupying the building at 21 Queen Street in 2006, the Proponent contemplated and planned further renovations to add a gymnasium and six (6) classrooms. These plans were ultimately postponed to a later date due to funding. NHCS currently includes an elementary/middle school (grades K-8) with an enrollment of 450± students and 126± staff (107 full-time and 19 part time staff). Site access is via Queen Street and Claymont Terrace. A one-way drop-off area with a queue storage of 4 to 5 vehicles and single point loading is located near the corner of Queen Street and Claymont Terrace with bus staging at designated bus areas along Queen Street.

On February 8, 2019, the Proponent filed a Small Project Review Application (“SPRA”) with the BPDA for a proposed expansion to the existing Neighborhood House Charter School location at 21 Queen Street, totaling approximately 21,000 gross square feet and containing twelve (12) additional classrooms, a middle school gymnasium, and support spaces (the “Proposed Project”). The Proposed Project also includes contemplates reconfiguring the existing parking area on the Project Site to improve traffic flow around and through the campus to bring cars off the road and allow them to queue on site in efforts to improve traffic conditions, especially during drop-off and pick-up times. Additionally, the proposed project plans to increase on-site parking from the fifty-five (55) spaces currently required to at least seventy (70) parking spaces on-site.

Proposed Neighborhood House Charter School

Under the proposed development plan, Neighborhood House Charter School proposes to expand its enrollment by about 78 students and 9 staff. The hours of operation, school bus levels, and the traffic management plan (TMP) will remain unchanged. The proposed site layout prepared by Arrowstreet as presented in **Figure 2** is designed to reduce or eliminate queuing impacts that currently occur on Claymont Terrace while also improving school bus operations. The enhanced drop-off/pick-up area will provide for a vehicle queue area of 14+ vehicles with multi-car loading/unloading. The increased on-site parking capacity will also reduce the potential for staff parking on neighborhood streets.



Site Plan Source: Arrowstreet Associates
Figure 2

Site Plan

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

North
Scale: Not to Scale

The traffic flow during the weekday morning drop-off period and weekday afternoon pick-up period are summarized graphically in **Figure 3** and include the following characteristics:

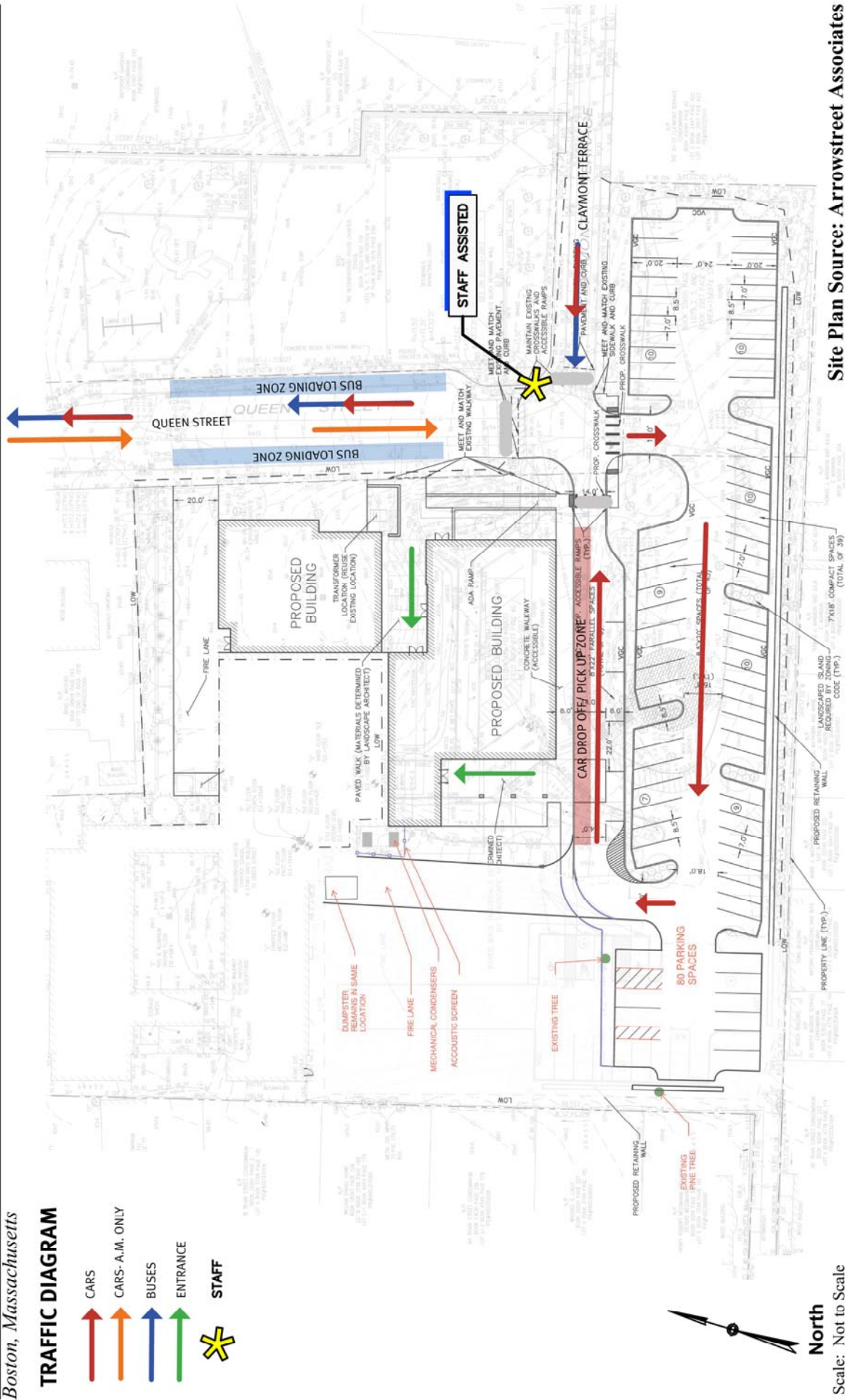
- *Weekday Morning Drop-Off Period.* During the morning drop-off period parents will continue to arrive using Queen Street and Claymont Terrace and will enter the parking lot to proceed to the expanded car drop-off/pick-up zone. The school buses will continue to use the bus loading zone along the eastern side of Queen Street. Staff will be positioned to assist student unloading, bus unloading and on-site crosswalks.
- *Weekday Afternoon Pick-up Period.* During the afternoon pick-up period parents will continue to arrive Claymont Terrace while Queen Street in the Site vicinity will continue to be restricted to one-way egress during afternoon pick-up periods, as managed by NHCS staff. Parents will enter the parking lot to proceed to the expanded car drop-off/pick-up zone. The school buses will continue to use the bus loading zones along the eastern and western sides of Queen Street. Staff will be positioned to assist student unloading, bus unloading and on-site crosswalks.

Trip Generation

Trip generation (NHCS) was projected for the critical school activity periods including the weekday morning drop-off period, weekday afternoon pick-up period, and weekday evening pick-up period (after school activity). A detailed trip generation summary for the projected NHCS school, based on the existing NHCS school with an expansion to include an additional 78 students and 9 additional staff members is presented in **Table 1** with a breakdown of the new vehicular trips by staff member, pick-up/drop off (student) and bus is presented in **Table 2**.

TRAFFIC DIAGRAM

-  CARS
-  CARS- A.M. ONLY
-  BUSES
-  ENTRANCE
-  STAFF



North
Scale: Not to Scale

Site Plan Source: Arrowstreet Associates
Figure 3

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Traffic Circulation Plan

TABLE 1
PROJECTED NHCS TRIP-GENERATION SUMMARY

Period	Existing NHCS ¹			Future NHCS ²		
	Staff Auto	Student Auto	Bus	Total	Net New	Total
<i>Weekday Morning Drop-Off Peak-Hour (7:45-8:45 AM):</i>						
Enter	26	145	13	184	29	213
<u>Exit</u>	--	<u>145</u>	<u>13</u>	<u>158</u>	23	<u>181</u>
Total	26	290	26	342	52	394
<i>Weekday Afternoon Pick-Up Peak-Hour (3:30-4:30 PM):</i>						
Enter	--	87	7	94	10	104
<u>Exit</u>	<u>22</u>	<u>87</u>	<u>9</u>	<u>118</u>	16	<u>134</u>
Total	22	174	16	212	26	238
<i>Weekday Evening Peak-Hour (4:30-5:30 PM):</i>						
Enter	--	39	1	40	5	45
<u>Exit</u>	<u>5</u>	<u>39</u>	<u>1</u>	<u>45</u>	7	<u>52</u>
Total	5	78	2	85	12	97

¹Peak hour trips based on empirical trip generation observed at NHCS in February 2019.

²Peak hour trips based on mode share statistics shown for the Existing NHCS and an increase to 528± students and 9 staff.

**TABLE 2
NHCS TRIP-GENERATION SUMMARY
(NEW TRIPS)**

Period	Vehicle-trips ¹			Total
	Staff Auto	Student Auto	Bus	
<i>Weekday Morning Drop-Off Peak-Hour (7:45-8:45 AM):</i>				
Enter	6	23	0	29
<u>Exit</u>	--	<u>23</u>	<u>0</u>	<u>23</u>
Total	6	46	0	52
<i>Weekday Afternoon Pick-Up Peak-Hour (3:30-4:30 PM):</i>				
Enter	--	10	0	10
<u>Exit</u>	<u>6</u>	<u>10</u>	<u>0</u>	<u>16</u>
Total	6	20	0	26
<i>Weekday Evening Peak-Hour (4:30-5:30 PM):</i>				
Enter	--	5	--	5
<u>Exit</u>	<u>2</u>	<u>5</u>	<u>--</u>	<u>7</u>
Total	2	10	--	12

¹Peak hour trips based on mode share statistics shown for the Existing NHCS and an increase to 528± students and 9 staff.

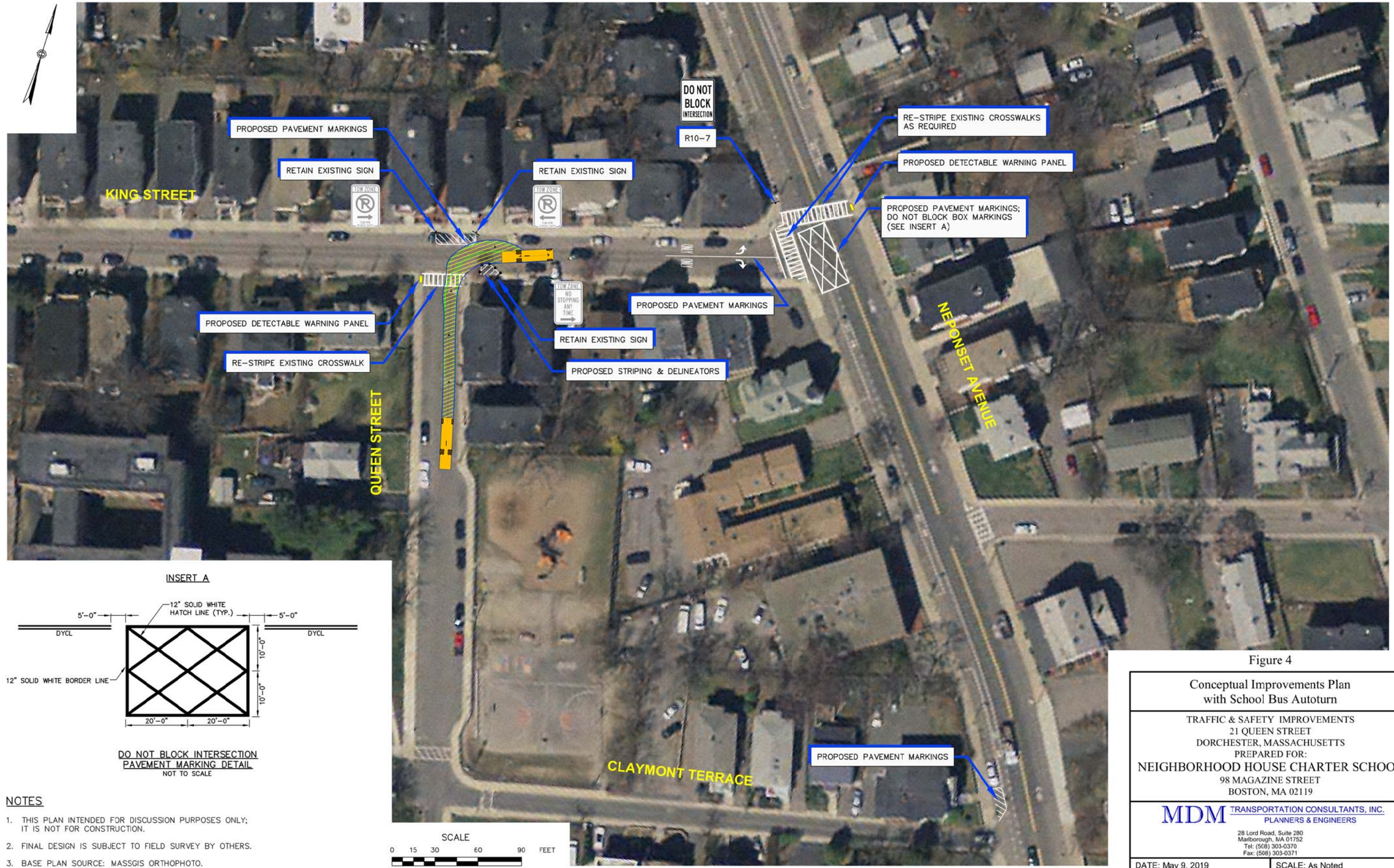
As presented in **Table 1** and **Table 2**, the projected peak increase in design volumes for school pick-up/drop-off activity (i.e., trips that must be actively managed by staff within the site) is 23 autos during the weekday morning drop-off period and 10 autos during the weekday evening pick-up period. With the proposed student/staff expansion in place, the projected peak design volumes for school pick-up/drop-off activity (i.e., trips that must be actively managed by staff within the site) will be 168 autos (145 existing and 23 new) and approximately 13 school buses during the weekday morning drop-off period and 97 autos (87 existing and 10 new) and approximately 9 school buses during the weekday evening pick-up period. The traffic increases on area intersections will remain within day-to day fluctuations with an total intersection increase of between 2 to 3 percent at the critical Neponset Street intersections with King Street and Claymont Terrace.

MITIGATION

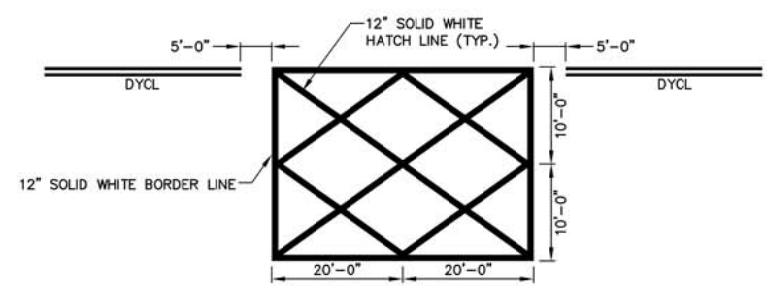
The proposed Site modifications will fully accommodate NHCS pick-up/drop-off activity within the property, thereby reducing or eliminating queuing impacts that currently occur on Claymont Terrace while also improving school bus operations. The increased on-site parking capacity will also reduce the potential for staff parking on neighborhood streets.

NHCS further commits to design of off-site improvements on neighborhood streets aimed at reducing illegal parking that impairs school bus circulation, enhancing traffic capacity and improving pedestrian crossings. NHCS will pay for the design and reasonable improvement costs. Specific mitigation elements are conceptually on **Figure 4** which includes the following design elements:

- *King Street at Queen Street:* Improved pavement striping and delineators that clearly define illegal or restricted parking areas within the intersection that currently impair bus turns during peak hours.
- *King Street at Neponset Avenue:* Improved pavement striping that includes separate left-turn and right-turn lanes for the King Street approach and “Do Not Block the Box” markings and associated signs on Neponset Avenue.
- *Neponset Avenue at Claymont Terrace:* Improved pavement striping along the eastbound Neponset Avenue approach to Claymont Terrace that delineates parking restrictions near the intersection. This improvement will reduce the potential for illegal parking that occasionally impairs bus turns onto Claymont Terrace.
- *Pedestrian Crossings:* The pedestrian crossing at King Street/Queen Street will be re-striped and tactile warning strips will be provided where missing at this intersection as well as King Street/Neponset Avenue.



INSERT A



DO NOT BLOCK INTERSECTION PAVEMENT MARKING DETAIL NOT TO SCALE

NOTES

1. THIS PLAN INTENDED FOR DISCUSSION PURPOSES ONLY; IT IS NOT FOR CONSTRUCTION.
2. FINAL DESIGN IS SUBJECT TO FIELD SURVEY BY OTHERS.
3. BASE PLAN SOURCE: MASSGIS ORTHOPHOTO.

Figure 4

<p>Conceptual Improvements Plan with School Bus Autoturn</p>		
<p>TRAFFIC & SAFETY IMPROVEMENTS 21 QUEEN STREET DORCHESTER, MASSACHUSETTS PREPARED FOR: NEIGHBORHOOD HOUSE CHARTER SCHOOL 98 MAGAZINE STREET BOSTON, MA 02119</p>		
<p>MDM TRANSPORTATION CONSULTANTS, INC. PLANNERS & ENGINEERS 28 Lord Road, Suite 280 Marlborough, MA 01752 Tel: (508) 303-0370 Fax: (508) 303-0371</p>		
DATE: May 9, 2019	SCALE: As Noted	
PROJECT No. 929	File: 929 Concept Plan (5-9-2019).dwg	Sheet 1 of 1