Project Notification Form

Match Community Day Charter Public School Project

Hyde Park, Massachusetts

PREPARED BY

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PREPARED FOR

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1001 Commonwealth Avenue
Brighton, MA 02115

IN ASSOCIATION WITH

Qroe Preservation
Studio G Architects
Skanska USA
Nitsch Engineering
SAR Engineering
Carol R. Johnson Associates
GZA GeoEnvironmental, Inc.

September 2013

Expanded Project Notification Form

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Submitted by Match School Foundation, Inc.
1001 Commonwealth Avenue
Brighton, MA 02115

Prepared by **VHB/Vanasse Hangen Brustlin, Inc.**
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Project Description and Impact Summary

Match Schools Overview

Match operates two charter public schools (with three campuses) in Boston. The mission of the schools is to prepare students, especially those with no family history of college attendance, to succeed in college and beyond. Our first school, the Match High School, opened in September 2000 to serve grades nine through twelve. In 2004, the school initiated the Match Corps Urban Fellowship program in order to provide students with intensive academic support and to attract talented recent college graduates to careers in urban education. In August 2008, the Match Middle School opened as an extension of the high school with its first class of sixth graders. It now serves grades six through eight. While the school's original 1999 charter was for 180 students, for a high school only, Match will now serve 550 students across middle and high school (grades 6 – 12) when these two charters reach full capacity.

In 2011, Match decided to open another school, one focused on serving a growing and traditionally under-served portion of Boston's population, English Language Learners (ELLs, students who may not speak English at home and need extra support to complete coursework and classroom work in English). The Governor, Secretary of Education, and Mayor of Boston have all called on charter schools to serve more ELLs and Match responded by opening a new school, the Match Community Day School. The school focuses on boosting the academic achievement of ELLs and began with 50 students in Pre-kindergarten and 50 students in second grade. In 2013 – 2014, this school will serve 300 students in grades pre-kindergarten to four. The school has a charter to eventually serve 700 students in grades pre-kindergarten through twelve.

Students come to Match Community Day mainly from the Boston neighborhoods of Dorchester, Roxbury, Mattapan, and Hyde Park and are selected through a random lottery.

The school's demographic make-up is similar to that of Boston Public Schools: over 90% of our students are minority, and 85% qualify for free or reduced-price lunch. Over 80% of the students speak a language other than English (or in addition to English) at home.

Match provides a rigorous college preparatory education that addresses underachievement by combining high standards with innovative academic programs, personalized academic support provided by the full-time "Match Corps" tutors, strong personal relationships with students and their families, and an old-fashioned "no-shortcuts" ethic. The Match School academic program is focused on turning all of the school's scholars into well-rounded students who are prepared to succeed in college and beyond.

The Match Community Day School provides high-quality educational services to 300 students in grades Pre-kindergarten to four (50 students in each grade). Students take the Boston Public Schools bussing/transportation services to and from school and breakfast and lunch are served to all. The school day goes from 7:30 AM to 4 PM. Within that time, all students receive 5 hours per day of instruction in core curriculum areas (math, English, science, social science) and 2 hours per day of individual tutoring. Pre-kindergarten and kindergarten students have a snack, nap and story time included in their 5 hours of instruction.

As described above, Match asks the students to work incredibly hard. The school believes that students will work hard and meet the high expectations set for them if they have strong, authentic relationships with the adults with whom they are working. Because of this, the Match Schools search the country to recruit the best principals, teachers, and tutors they can find. Every person hired at Match must truly believe that every student who they interact with has what it takes to succeed in college and beyond and must be able to build real relationships with kids and families. Match's founding Principal, the late Charles Sposato, often said: "The kids don't care how much you know until they know how much you care". The Match faculty and staff still live by these words every day.

Project Description

The Match Charter Public School and the Match School Foundation, Inc (the "Proponent" or "Match") is currently located across two locations. K1 through 2nd grade is located in leased space at 86 Wachusett Street and the 3rd and 4th grade are located in shared space at 215 Forest Hills Street. Match Community Day will slowly grow from these grades to 700 students in grades K1 through 12. The school proposes to locate the permanent home for all Match Community Grades at the terminus of Poydras Street in the Belnel Village neighborhood in Hyde Park. The new location will accommodate the full projected enrollment of 700 students and enable this diverse school to provide a more appropriate campus setting for its students with

greater indoor and outdoor space and enhanced amenities, including community spaces and play areas. The Hyde Park site is also more centrally located to the majority of Boston's neighborhoods to whom this institution serves: Dorchester, Mattapan, Roxbury, and Hyde Park.

The Hyde Park site was formerly a commercial/light industrial site located adjacent to Belnel Village, a neighborhood of residential homes. A portion of the Project site was also part of the previously-approved Neponset Fields Residential Project. The six-acre site is currently vacant, with only a small cinder-block storage structure on site (which would be demolished in connection with the Project). Match intends to completely reconstruct the site with new school buildings, a gymnasium, and adjacent playing fields and playgrounds. The site will also have ample off-street parking, bus and parent drop-off/pick-up areas, sidewalks, and shade trees. It is anticipated that the overall school program will be able to accommodate up to 700 students. The Project will also qualify for LEED certification, a requirement of Article 37 of the Boston Zoning Code.

Site improvements include the addition of pervious areas to the site (in the form of landscaped green space), substantially increasing the available sports and place space for students and increasing environmental benefits like stormwater infiltration and cleaner runoff to the Neponset River that comply with DEP stormwater management requirements. Parking will be provided for approximately 79 off-street spaces for faculty, staff, and visitors. Match staff will be required to park their vehicles on-site and not on nearby Belnel Village neighborhood streets. An internal circulation roadway has been designed to carry school buses and automobiles into the school campus to centralized pick-up/drop-off areas. **Figure 1-1** depicts the proposed site plan for the Match Community Day Charter Public School Project.

Match is also proposing significant off-site improvements, including a traffic light at the intersection of Old Poydras and River Streets and sidewalk repair on Poydras Street.

The Project is subject to Large Project Review under Article 80 of the City of Boston Zoning Code. Accordingly, the Proponent submits this expanded Project Notification Form (PNF), including the substantive components that are required for Large Project Review, such as urban design, environmental, transportation, public review process, as well as other components generally prepared in fulfillment of Draft Project Impact Report (Draft PIR) requirements.

This Expanded PNF fully discloses the potential impacts of the Proposed Project in the relevant environmental impact areas and identifies measures incorporated into the Project that will adequately mitigate potentially negative environmental effects.

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Existing Site Conditions

The Project site consists of approximately 5.2 acres of land located south of the existing MBTA Fairmont Commuter Rail Line and north of the Neponset River in the Belnel Village neighborhood of Hyde Park. The site will be accessed via River Street, Old River Street, Poydras Street and Neponset Field Lane.

The site location plan and site plan depicting existing site conditions are shown in **Figures 1-2** and **1-3**.

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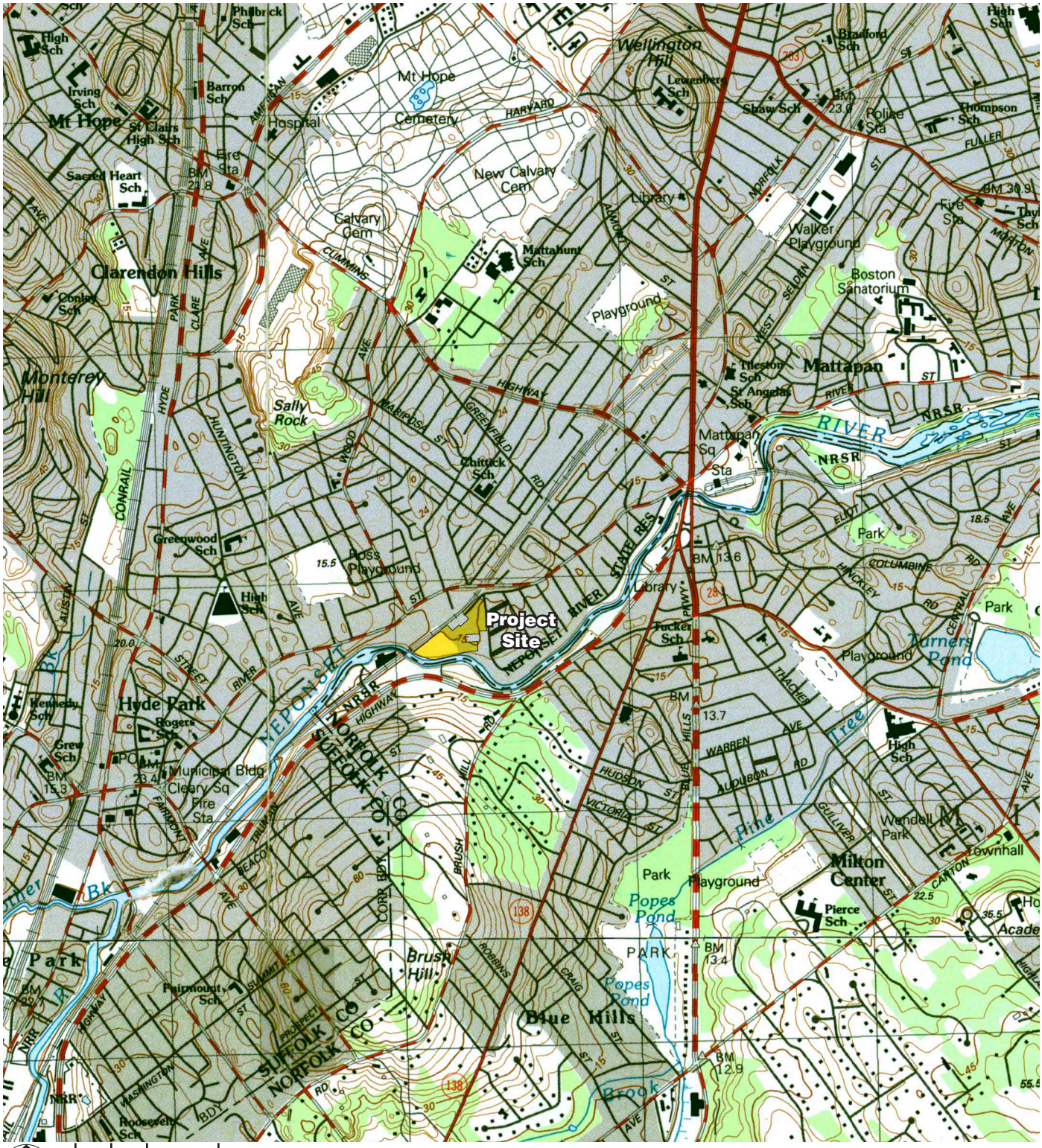
Project Program Summary

The Project will benefit the school's students significantly, providing an opportunity to create a premiere campus environment with improved classroom, common space and recreational amenities for the children who attend the school and their parents. The current Jamaica Plain facility, which is too small for full enrollment and subject to a short-term lease arrangement, lacks sufficient parking, outdoor recreation spaces, and lacks adequate common space. The new facility is organized in a more traditional school layout with two floors and includes a gymnasium and a 'Commons' multi-purpose space for each classroom building. It also includes ample designated outdoor recreational space for the children's use, along with adequate parking for both staff and visitors.

The Project will benefit the City and surrounding neighborhood by creating an academic campus on parcels of land that have been formerly used to support light industrial uses—which does not fit appropriately within the surrounding residential context. Further, the site's design will allow the bus and parent drop-off to take place on site, a significant benefit to the neighborhood. The Project will also support the neighborhood by improving infrastructure on Poydras, and Old River Street, and installing a traffic light at the intersection of River and Old River Streets.

Building Program

It is intended that the new construction and improvements will be put in place immediately after the required project approvals are obtained. Table 1-1 summaries the proposed development program for the Project. In total, the Proposed Project will include the construction of approximately 70,000 square feet of educational, community, and administrative space.

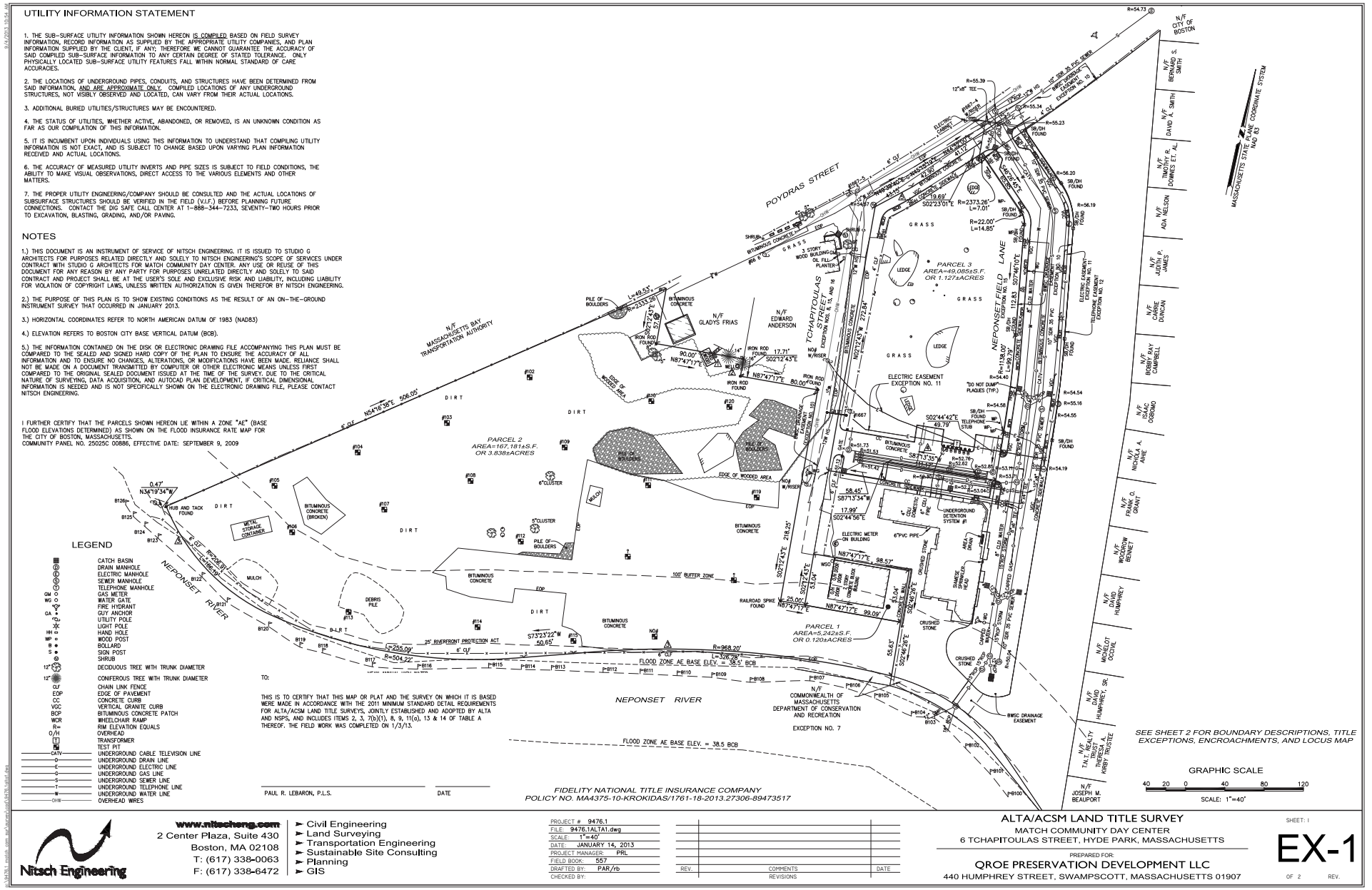


match COMMUNITY DAY | Charter Public School

Figure 1-1

Project Locus Map

VHB Vanasse Hangen Brustlin, Inc.



match COMMUNITY DAY | Charter Public School

Figure 1-2

Existing Survey

VHB Vanasse Hangen Brustlin, Inc.

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Figure 1-3

Proposed Site Plan

VHB *Vanasse Hangen Brustlin, Inc.*

Table 1-1
Proposed Building Program

Building	Square Feet (SF)
Classroom Building 1; Poydras Building	19,000
Classroom Building 2; River Building	38,000
Gymnasium	13,000
Grand Total	70,000

Project Design

The Match design includes two classroom buildings, the Poydras Building and the River Building, the Gymnasium, playing field, playground, and landscaped open spaces. At the entry to the campus, the Poydras Building at the corner of Poydras Street and Neponset Field Lane includes classrooms, offices, and the commons, a double-height multi-purpose Commons for dining, group meetings, and small group tutoring. The large, glazed common's windows are prominent and inviting. The long elevation of the building forms a strong street edge along Neponset Field Lane, extending from Poydras Street to the Neponset Field senior housing.

The River Building includes the extensive offices, classrooms, and a double-height Commons overlooking the Neponset River and the 20,000 SF synthetic turf playing field. The playgrounds and rain gardens to filter the stormwater runoff extend from the buildings to the 25' setback to the riverfront. To accommodate the Match program of extensive tutoring, the two classroom buildings feature many small meeting rooms and booths in addition to the classrooms and laboratories typical for a school program.

The Gymnasium includes a regulation basketball court, team locker rooms and toilets, and storage for sports and landscape equipment.

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Site Access Improvements

The Project site will be accessed via curb cuts on Neponset Field Lane (for bus access only) and Poydras Street (for staff and parent access/egress). The driveways will provide access to the campus with dedicated parking, bus drop-off area, and parent drop-off area as shown previously in **Figure 1-1**, the Proposed Site Plan. The drop-off/pick-up areas will provide a dedicated lane for school buses and for parents who choose to drop-off and pick-up their children attending the school. The intent of the access configuration of the site is to ensure that all school-related traffic is handled on site and not in the adjacent neighborhood. This design will be further managed via a

very proactive traffic management plan that is intended to eliminate unintended traffic impacts to the surrounding residential area. This plan is described in greater detail in **Chapter 4,** *Transportation*.

The Project will be constructed with approximately 79 supporting off-street parking spaces located on the western portion of the site. The School's main entrance on Neponset Field Lane will be Stop-controlled. It will also be physically separated from the adjacent Neponset fields Senior Housing facility. Both the entrance and exit driveways will be constructed with ADA/ABA accessible pedestrian amenities in order to safely manage pedestrian traffic in conjunction with vehicular movements. On-site pedestrian amenities include sidewalks surrounding the site between the program spaces and the vehicular loop/parking lots and crosswalks to safely guide students between the drop-off/pick-up loop and the sidewalk.

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Public Review Process

The Proponent contacted various public officials before commencing public meetings to present concepts for the Proposed Project. As described in greater detail in Chapter 7 (Public Review Process) of this PNF, the Proponent has consulted with City Councilor Robert Consalvo (District 5) and representatives of several neighborhood associations coordinated by the Mayor's Office of Neighborhood Services. The Proponent has also consulted with representatives of the Boston Redevelopment Authority (BRA).

On October 15, 2012, the Proponent submitted a Letter of Intent to the BRA Director in accordance with the "Executive Order of Mayor Thomas M. Menino Relative to the Provision of Mitigation by Development Projects in Boston[1]" (Executive Order). The purpose of the Executive Order is to provide for the review of project impacts and proposed mitigation by an Impact Advisory Group (IAG). The IAG consist of Mayor-appointed individuals including residents, business owners, and designees of relevant community organizations. It is anticipated that the IAG will evaluate expected project-related impacts and proposed mitigation efforts. Additionally, a public meeting will be advertised in the Boston Herald and held at the Neponset Field Senior Housing adjacent to the site to inform local residents about the Project, and to solicit comments to better respond to community issues and observations related to the Project.

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[1] *Executive Order of Mayor Thomas M. Menino Relative to the Provision of Mitigation by Development Projects in Boston*, October 10, 2000, as amended by Executive Order dated April 3, 2001.

Project Impacts

This section summarizes project impacts, including transportation and environmental protection. Impacts to infrastructure and a discussion regarding historic resources are also presented. Overall, as described below, the Proposed Project will not have significant environmental impacts.

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Transportation

The primary finding of this transportation analysis is that the transportation improvement and mitigation plan proposed by Match will provide for improved access to the Project site from River Street, which will be upgraded to safely and efficiently manage traffic and pedestrian movements to and from the school. A series of actions have been developed to reduce the impact of the Project on neighborhood streets and generally improve both the vehicular and pedestrian access realms both within and surrounding the Project site. The proposed parking for the Project will satisfy the expected parking demands generated by the Project (which is driven almost entirely by the faculty/staff population). Finally, the Proponent will explore proactive Transportation Demand Management measures (TDM) and supporting amenities to encourage and support the use of transit, walking, and cycling.

A summary of key findings of the transportation analysis for the Project is as follows:

- The Project will generate approximately 209 additional vehicle trips during the weekday morning and evening peak hours.
- Match is committed to designing and implementing a fully-functioning traffic signal at the intersection of River Street/Old River Street/Wachusett Street. This amenity will help to appropriately manage school traffic during peak school arrival and dismissal times. This improvement will also support safe and efficient vehicle access for Belnel Village residents at this location, including safer opportunities to pull into this intersection from the neighborhood. This improvement will also support safer pedestrian crossings at the intersection and provide a new opportunity to slow overall River Street traffic down along this stretch of the corridor.
- With this new traffic signal installed, this intersection will operate at the same or improved levels, even with the additional trips generated by the school.
- The study area intersections will continue to operate at the same levels of service when the school opens as under future no-build conditions.
- Site driveway intersections on Neponset Field Lane, Poydras Street, and Old River Street will operate acceptably during both the morning and evening peak hours with the school opened and fully occupied.

- Match is committed to designing and installing ADA/ABA sidewalks, ramps, and crosswalks to safely and efficiently manage vehicle traffic and pedestrian activity. In particular, this will include construction of "gaps" in available sidewalk that would connect the Match campus back to River Street.
- On-site parking will comprise of approximately 79 spaces, which will support parking demands generated by the Project.
- The Project site's transportation infrastructure will be designed such that all drop-off/pick-up activity is accommodated on-site. School buses and parents will not be permitted to drop-off and pick-up students on nearby Belnel Village residential streets.
- Redevelopment of the site will eliminate a former commercial/light industrial site, which in the past generated a measurable amount of trucking activity along both Poydras and Old River Streets.
- The Project will also discontinue the existing Tchapitoulas Street—providing an opportunity for a generous, densely planted buffer to adjacent residential homes.
- The Proponent is also committed to providing and enhancing a wide array of Transportation Demand Management (TDM) measures offered to faculty and staff as a means to encourage the use of alternative transportation modes.

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Environmental Protection

The Proposed Project will have no significant environmental impacts. As compared to the existing site, the Proposed Project will upgrade site access conditions, improve stormwater runoff quality, and the aesthetic character of the Project site and the surrounding area.

Details of each of these environmental components are provided in **Chapter 5**, *Environmental Protection*.

Wind

The Proposed Project is not expected to generate changes in wind impacts on adjacent buildings or on open space since the new construction will not exceed three stories at the highest point. Most of the campus buildings are proposed to be only two stories high.

Shadow

The Proposed Project will not produce significant new shadow impacts outside of the Project site.

Daylight

As there is currently no building on the Poydras Building site, daylight obstructions will occur on Poydras Street and Neponset Field Lane due to the new Poydras Building in comparison to existing conditions. These obstructions will be minimal due to the property line offset and minimal height of the building.

Solar Glare

The Project will not include large areas of reflective glass or other materials that would contribute to solar glare.

Air Quality

It is expected that the Proposed Project will comply with the requirements of the City of Boston, the Massachusetts State Implementation Plan (SIP), and Housing and Urban Development (HUD) criteria for residential receptors. Carbon monoxide concentrations are expected to fall below the National Ambient Air Quality Standards (NAAQS).

Water Quality

The Proposed Project will improve water quality at the site in terms of both stormwater quality and quantity. Up to 80 percent of Total Suspended Solids will be removed from runoff originating from roof areas, parking lots, and other impervious surfaces, in compliance with DEP Stormwater Regulations. In addition, the Proponent is investigating the use of other techniques, like rainwater harvesting to reduce the volume of stormwater flow into storm drains.

Flood Hazard Zones/Wetlands

The Project site is subject to regulations established for a few resource areas as regulated under the Massachusetts Wetland Protection Act: Banks, Land Under Water Bodies and Waterways (LUW), Land Subject to Flooding (LSF), a Riverfront Areas. The Proposed Project does not propose any alterations to the Land Under Water Bodies and Waterways resource.

The Project site features both Bank and Riverfront Area but will not adversely affect either from pre- to post-construction conditions. The Project will not alter the Neponset River and will provide a 25 foot vegetated riverfront area along the length of the river.

Groundwater

Groundwater is anticipated to be present within a typical depth of 9 to 13 feet below ground surface or deeper. It is not anticipated that foundation construction will require excavation below the groundwater level as no basements are proposed for the new development.

Geotechnical Conditions

Based upon the subsurface conditions and materials underlying the Project site and the proposed scope of development, it is anticipated that foundation support will be provided by a conventional spread footing foundation system with either a slab-on-grade or structural slab for the lowest level, after limited removal of organic soils and replacement with engineered structural fill has been performed within the building footprints.

Hazardous Materials

A limited pre-construction soil and groundwater quality testing program was performed to evaluate the options for reuse, recycling, disposal, or treatment of contaminated soil and/or groundwater. Four soil samples were submitted for laboratory analysis. Results for one of the samples indicated arsenic and certain polycyclic aromatic hydrocarbons (PAHs) at concentrations that would require special management if the material were to be taken off-site. Groundwater results for two samples tested for volatile organic compounds (VOCs) were below the method detection limits.

Based on the limited data generated, excess excavated soil to be taken off-site will be subjected to laboratory analysis to evaluate its disposition for off-site reuse, disposal, treatment, or recycling in accordance with Massachusetts Department of Environmental Protection (MassDEP) policy and the Massachusetts Contingency Plan (MCP). The construction contractor will be responsible for on-site re-use and/or proper off-site removal of contaminated soil, and disposal of solid waste and debris. Additional groundwater testing may be performed in support of obtaining temporary construction dewatering permits and to assess the need for on-site treatment to remove contaminants prior to off-site discharge.

Noise

It is expected that the noise impacts generated at the Project site will be improved with the Proposed Project in place. The site formerly accommodated several industrial tenants and an active trucking and materials management operation. These uses were relocated in advance of the Project and will be permanently replaced with educational uses, resulting in improved noise conditions.

Primary noise sources from the Proposed Project will be the mechanical equipment to support the heating, ventilation, and air conditioning (HVAC), which will control the climate within the buildings. The actual capacity, manufacturer, screening methodology, and exact locations of HVAC equipment are not yet known as the design is still in progress. One of the foremost HVAC manufactures provided sound level data for the proposed mechanical equipment. With careful attention to the equipment selection and adequate screening, the Project will comply with the City of Boston Zoning District Noise Standards.

The Proponent is committed to instituting noise attenuation measures and to comply with the Regulations for the Control of Noise in the City of Boston.

The construction activities related to the development of the site will generate noise for a short period of time. Although construction sound levels will be higher than the existing sound levels, they will be temporary, and construction-related noise will be minimized.

Construction Impacts

Construction of the Proposed Project is expected to last approximately 15 months, with the school anticipated to open for the 2015-2016 academic year. Typical construction hours will be from 7:00 AM to 3:30 PM, Monday through Friday. The Proponent will require its contractors to construct the Project in compliance with all applicable City, State and Federal regulations governing noise, dust, and traffic maintenance. In addition, the Proponent will develop a Construction Management Plan with the Boston Transportation Department to address pedestrian and vehicular access concerns. A stone entrance will be built to reduce mud and dirt on City streets. When necessary, the contractor will be required to sweep the street to remove any construction-generated debris.

Rodent Control

The City of Boston has declared that the infestation of rodents in the City is a serious problem. In order to control this infestation, the City enforces the requirements established in the Massachusetts State Sanitary Code, Chapter 11, 105 CMR 410.550 and the State Building Code, Section 108.6 Policy Number 87-4 (City of Boston).

These regulations established that extermination of rodents should be required for issuance of permits for demolition, excavation, foundation, and basement rehabilitation. The Proponent will develop a rodent control program prior to construction commencement.

Historic Resources

There are no existing structures located on the property, with the exception of a small cinder block storage building that is approximately 2,000 GSF.

Several buildings within a 0.25-mile radius of the Project site have been previously recorded on either area or individual building inventory forms and are included in the *Inventory of Historic and Archaeological Assets of the Commonwealth*. However, none of these buildings is listed in the State Register of Historic Places. One roadway, Truman Parkway, east of the Project site and across the Neponset River, is part of a National Register historic district. There are no anticipated impacts to the Parkway or those properties as a result of this Project.

A review of previously recorded archaeological resources within a 1-mile radius of the Project site was conducted at the Massachusetts Historical Commission. No archaeological resources are listed in the State Register of Historic Places on the Project site or within a 1-mile radius of the Project site, but one archaeological site within the 1-mile radius is listed in the *Inventory of Historic and Archaeological Assets of the Commonwealth*. Chapter 5, Environmental Protection, provides additional details on historic resources both on and near the Project site.

Sustainability

Article 80B-6 provides that new development projects that are over 50,000 sf must comply with green building standards and sustainable design features as described in Article 37 of the City's Zoning Code. The Proponent is committed to incorporating numerous design elements into this renovation and construction Project to respond to environmental concerns, reduce energy consumption, and reduce water use.

A LEED for Schools checklist is included in the PNF in **Chapter 5,** *Environmental Protection*, which quantifies the green building points defined by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) building rating system.

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Infrastructure Systems

Utility connections supporting the Project will be designed and constructed in accordance with city, state, and federal standards. The Proponent will coordinate

with the following regulatory agencies throughout the design and construction process:

- The Boston Water and Sewer Commission (BWSC) is responsible for the majority of water, sewer, and stormwater systems. BWSC reviews any modifications of on- and off-site water, sewer, and drainage systems through their site plan review and approval process. This process includes a comprehensive design review of the proposed service connections, assessment of system demands and capacity and establishment or updating of service accounts.
- The Massachusetts Department of Environmental Protection (DEP) Office of Coastal Zone Management (CZM) has established a stormwater management policy that will be implemented and reviewed through the filing of a Notice of Intent (NOI) with the City of Boston Conservation Commission.
- The Boston Fire Department (BFD) will review the Project with respect to fire protection measures such as Siamese connections and standpipes.
- Design of the site access, hydrant locations, and energy systems will also be coordinated with the respective system owners.
- Design of the site access, hydrant locations and energy systems (electric) will also be coordinated with the respective system owner.
- New utility connections will be authorized by the Boston Public Works Department through the street opening permit process, as required.

Project Benefits

The Proposed Project will provide the following significant community benefits to the City and Hyde Park:

- The new facilities will remediate and reuse a former industrial property in a largely residential neighborhood;
- It will provide a new public school facility for the children and families it serves in Boston and the surrounding communities;
- It will provide a space that can be used by the Neighborhood for meetings and events;
- Implementation of new traffic signal at the intersection of River Street/Old River Street/Wachusett Street; providing improved safety conditions to the surrounding neighborhood;
- Construction of new sidewalk along portions of the Poydras Street;
- It will bring school bus marshaling and queuing off the street and onto the site; and

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Employment

The Project will create construction-related jobs and retain permanent employment opportunities.

Construction Employment

The construction of the Project will contribute directly to the local economy by providing numerous employment opportunities. An Employment Plan/Quarterly Work Force Projection Table (the "Plan" will be submitted in accordance with the Boston Residents Jobs Policy. The Plan will provide that the company will make best efforts to have at least 50 percent of the total on-site employee work hours for the Project be performed by Boston residents, at least 25 percent of such hours be performed by minorities and at least 10 percent of such hours be performed by women. As a public construction project, all on-site construction work will conform to prevailing wage law.

Permanent Employment

The Match Charter School will employ approximately 60 full time staff on site at full enrollment.

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Economic Benefits

The Project is estimated to cost approximately $25 million and will have several economic benefits for the City. Financing will come from various sources including tax-exempt bonds as well as the owner's equity and community contributions from a capital campaign.

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General Information

Applicant Information

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Development Team

The Proponent has assembled a development team of experts familiar with the City's substantive requirements and approval process.

Proponent

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Legal Information

Legal Judgments or Actions Pending Concerning the Proposed Project

The Proponent is not aware of any legal judgment or pending legal actions relating to the Project.

History of Tax Arrears on Property Owned in Boston by Development Entity

The Proponent owns no real estate in Boston for which real estate tax payments are in arrears.

Evidence of Site Control Over Entire Project Area

The Proponent has control over the entire Project site pursuant to a Purchase and Sale Agreement dated July 31, 2012, as most recently amended by a Seventh Amendment to Purchase and Sale Agreement dated May 23, 2013.

Regulatory Controls and Permits

Zoning

According to Boston Zoning Map 12 (Hyde Park), the Project site is located entirely within the Hyde Park Neighborhood District (the "District") of the City of Boston which is governed by Article 69 of the Boston Zoning Code (the "Zoning Code"). Within the District, the Project site is located partially within a two-family residential subdistrict (2F-5000) and partially with a multifamily residential subdistrict (MFR) (the "Subdistricts"). The Project site is also located in the Neponset River Riverfront Protection Overlay District. The Project will be used as a K-12 public school. Pursuant to Section 69-8 and Table A of the Zoning Code, kindergarten and elementary or secondary school uses are permitted as of right in the Subdistricts. Accessory services incidental to educational uses (for educational institutions with more than 400 full-time students) are conditional uses within the Subdistricts, and if the Project includes such accessory services, a conditional use permit will be required. The preliminary bulk and dimensional calculations for the Project are set forth in **Table 2-1.**

Table 2-1
Project Dimensional Requirements

Dimensional Table			
Category	Required in 2F-5000 and MFR Subdistricts[1]	Provided by Project	Required?[3]
Maximum Floor Area Ratio	.5 (2F) 2 (MFR)	.31 (70,000/221,508)	No
Maximum Building Height	2 ½ stories/35 ft. (2F) 3 stories/35 ft. (MFR)	2 stories/35 ft.	No
Minimum Lot Area per Dwelling Unit(since each 1,500 SF of gross floor area devoted to non-residential use = 1 dwelling unit, the Building is deemed to have 47 dwelling units)	8,000 SF (2F) 5,000 SF (MFR)	8,000 SF (for first dwelling unit)	No
Minimum Lot Area for Each Additional Dwelling Unit (since each 1,500 SF of gross floor area devoted to non-residential use = 1 dwelling unit, the Building is deemed to have 47 dwelling units)	None (2F) 2,500 SF (MFR)	4,642 SF (for each of 46 additional dwelling units)[4]	No
Minimum Lot Width[5]	50 ft. (2F) None (MFR)	267 ft.	No
Minimum Lot Frontage[5]	50 ft. (2F) None (MFR)	127 ft.	No
Minimum Usable Open Space	1,750 SF (2F) 400 SF/unit (MFR)	2,319 SF/unit (108,994/47)	No
Minimum Front Yard[5]	20 ft. (2F) 20 ft. (MFR)	20 ft.	No
Minimum Side Yard[5]	10 ft. (2F) 10 ft. (MFR)	30 ft.	No
Minimum Rear Yard[5]	40 ft. (2F) 40 ft. (MFR)	40 ft.	No
Rear Yard Maximum Occupancy by Accessory Buildings[5]	25% (2F) 25% (MFR)	No accessory buildings	No

1 See Section 69-9 and Table C. Analysis assumes that Project must comply with the more onerous restriction between 2F and MFR.
2 Dimensions of Premises and Project Components Upon Completion of Project in Accordance with the Plans.
3 Zoning Relief Required?
4 Lot is 221,508 SF; after deduction of 8,000 SF for 1st unit, 213,508 SF remains for 46 additional units.
5 Property fronts on Poydras Street.

Section 69-29 of the Zoning Code provides that for projects subject to Large Project Review, required off-street parking and loading shall be determined through such review. For purposes of such review, the following information is provided:

Table 2-2
Required Off-Street Parking and Loading

Category	Requirement[1]	Provided by Project
Off-Street Parking	0.7 Spaces per 1,000 Square Feet of Gross Floor Area[2] (49 spaces)	79 spaces
Loading	1.0 loading bay required for projects 15,001 to 49,999 square feet	2 bay

1 These are requirements that would have applied had the Project not been subject to Large Project Review.
2 Per Section 69-29 and Table F of Article 69 of the Zoning Code.
3 Per Section 69-29 and Table G of Article 69 of the Zoning Code.

■

Article 80

The Project exceeds the threshold of 50,000 square feet of gross square footage of development, which requires Large Project Review under Article 80B of the Zoning Code. The Proponent has commenced Large Project Review under Article 80 of the Boston Zoning Code with the filing of a Letter of Intent with the Boston Redevelopment Authority (BRA) on October 15, 2012, which indicates the Proponent's intention to file a Project Notification Form in connection with the Project. The Proponent has reached out to and met with City agencies, neighborhood representatives and groups, elected officials, and other interested parties over the last several months.

This Expanded Project Notification Form (PNF) presents details about the Project and provides an analysis of transportation, environmental protection, infrastructure, and other components of the Proposed Project in order to inform the City agencies and neighborhood residents about the Project, its potential impacts, and mitigation proposed to address those potential impacts. Based on a comprehensive approach to addressing potential impacts and mitigation similar to the level of information normally presented in a Draft Project Impact Report (DPIR), it is the desire of the Proponent that the BRA, after reviewing public and agency comments on this Expanded PNF, will issue a Scoping Determination Waiving Further Review pursuant to the Article 80 process.

As currently contemplated, the Project will not be a Development Impact Project. Under Article 80 of the Zoning Code, such a project is one that (i) requires zoning relief; (ii) will devote more than 100,000 sf to a Development Impact Use; and (iii) involves the creation or substantial rehabilitation of more than 100,000 sf of gross floor area. Because the total gross floor area of the Project will be less than 100,000 sf, the Project is not a Development Impact Project.

■

Project Schedule

The following list provides a preliminary assessment of the construction schedule for the Proposed Project:

- Project Review, Approval, and Permitting — Spring 2013 - Winter 2014
- Site Enabling and Remediation — Spring 2014
- Site Excavation and Construction — Spring 2014 - Fall 2014
- School Construction — Fall 2014 - Summer 2015
- School Opening — September 2015

It is anticipated that the Project construction will commence by late Spring 2014. The Project includes demolition of an existing structure on the site, site enabling, and excavation activities. The entire construction schedule is anticipated to be approximately 15 months with completion scheduled by August 2015 and the new school opening in September 2015.

■

State and Local Permits & Other Approvals Anticipated

The Proponent will seek the following federal, state, and local permits and will take the following actions in notification of relevant agencies in the months prior to obtaining a Building Permit (See **Table 2-2**).

Table 2-2
Anticipated Permits and Approvals

Agency Name	Permit or Action*
Federal Government	
Environmental Protection Agency	(i) Region 1 Toxic Substances Control Act (TSCA) coordination and (ii) National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP)
Commonwealth of Massachusetts	
Massachusetts Dept. of Environmental Protection, Division of Water Pollution Control	Sewer Connection Permit
Massachusetts Dept. of Environmental Protection, Bureau of Waste Site Cleanup	(i) Release Notification and Retraction Form BWSC-103; (ii) MCP Phase I Initial Site Investigation, Tier Classification, Tier Transfer of RTN 3-25435, ; (iii) Release Abatement Measure Plan (iv) Class A-3 Response Action Outcome; and (v) Activity Use Limitation
Massachusetts Dept. of Environmental Protection, Bureau of Waste Prevention	Beneficial Use Determination Permit for ABC Rubble Re-use
Massachusetts Dept. of Environmental Protection, Division of Air Quality Control	Notice of Commencement of Demolition and Construction; Notice of Asbestos Removal; Fossil Fuel Utilization; Comprehensive Air Quality Permit
Massachusetts Water Resources Authority	Sewer Use
Massachusetts Historical Commission	Determination of "No Adverse Effect" on Historical Buildings or Districts
City of Boston	
Boston Redevelopment Authority	Article 80 Large Project Review- Scoping Determination Waiving Further Review
Boston Conservation Commission	Order of Conditions
Boston Transportation Department	Transportation Access Plan Agreement; Construction Management Plan (each as part of Article 80 Large Project Review)
Boston Department of Public Works	Curb-Cut Permit (also requires approval of BTD and PIC); Street Opening Permit; Street/ Sidewalk Occupancy Permit
Public Improvements Commission	Abandonment of Tchapitoulas Street (private way); Street Sidewalk Specific Repair Plan; Maintenance Agreement
Boston Water and Sewer Commission	Local Sewer and Water Tie-in and Site Plan Approval
Boston Fire Department	Site Plan Approval per PIC review
Boston Department of Inspectional Services	Building Permits; Other Construction-Related Permits; Site Cleanliness Permit; Certificates of Occupancy; Permission to Divide Existing Lot

The table above sets forth a preliminary list of permits and approvals from federal, state, and local governmental agencies, which are presently expected to be required for the Project, based on Project information currently available. It is possible that not all of these permits or actions will be required, or that additional permits or actions may be needed all of which may become evident during Project design and development.

3

Urban Design

This chapter describes the urban context, the proposed architectural design, pedestrian amenities, and landscape treatment for the Project.

Project Description

The Match Community Day Charter Public School proposes to relocate their public school programs to Poydras Street in the Belnel neighborhood of Hyde Park, one mile west of Mattapan Square. The new location will enable the diverse school to provide a small campus setting with greater space and enhanced amenities than their current school campus. The Poydras Street site will include a gymnasium, an outdoor playing field and play areas for elementary students. This Project proposes to transform a former industrial property into a vibrant, child-friendly campus.

The school will serve 700 students from kindergarten through the 12th grade. The school proposes constructing approximately 70,000 square feet of new space in three buildings: the Poydras Building, the River Building and the Gymnasium Building. **Figure 3-1** illustrates the proposed site plan for the Project.

Existing Site Conditions

The site encompasses approximately 5.2 acres. It is bounded on the north by Poydras Street, the MBTA Fairmount commuter rail right-of-way and two single-family residences; to the east by Neponset Field Lane and undeveloped land zoned for residential use; to the south by the Neponset River; and to the southeast by The Residences at Neponset Field, an independent senior housing facility. **Figure 3-2** shows an aerial photograph of the site (note: photo was taken prior to the recent construction of the Neponset Senior Housing facility).

The site was formerly used for a variety of industrial uses. In 1899, a factory and warehouse complex was built on the site which grew to approximately 50,000 SF. The former industrial buildings were demolished by ETC Development Corporation,

which developed The Residences at Neponset Field as the first phase of a planned affordable, multi-phase housing development on the site. ETC obtained City approvals for the full proposed development. ETC is now under agreement to transfer ownership of portions of the remaining undeveloped parcels to Match. ETC will retain the undeveloped parcel on the east side of Neponset Field Lane for future development of affordable residential housing, as originally stipulated and permitted under previous Article 80 permitting for that parcel.

The Residences at Neponset Field is a prominent four-story, 28,000 SF building clad in fiber cement panel siding in multiple colors, with overhangs at windows, doors and eaves. The 30-unit complex for residents age 62 and over includes a garden near the Neponset River. **Figure 3-3** illustrates a photograph of The Residences at Neponset Field.

The Project site, shown in **Figure 3-4**, is a relatively degraded and underutilized property due to its former industrial use and years of vacancy. The vast majority of the site is paved, and in completely neglected condition. Rubble, debris, and broken glass are scattered across the site.

The only structure remaining on site is a single story high, 2,300 SF concrete block warehouse/garage that will be demolished as part of this project (**Figure 3-5**).

The site displays a hard-edged image to the community and has virtually no public face, due to its former industrial use, the embankment for the Fairmount Commuter Rail line, and the fact that River Street, crossing the commuter rail, towers over the parcel. The northeast portion of the site was used as a stockpile area for rubble and boulders by a construction company.

The primary amenity of the site is its lengthy frontage along the Neponset River. The parcel faces the Neponset River Reservation (**Figure 3-6**), and is directly across the river from Truman Parkway, and the planned Neponset River Greenway on the Milton side. On the school site, little has been made of this amenity. The chain link fence along the riverfront is broken and rusted, the river edge vegetation has not been maintained, and the overgrown weeds are full of debris.

Design Goals and Context

■

Urban Context

The Match parcel is impacted by, and can contribute to, a number of broader urban design initiatives of the City, State and Federal governments. The BRA commissioned the Hyde Park Neighborhood Strategic Plan, prepared by Bergmeyer Associates in 2011, which establishes broad guidelines for new and re-development

in Hyde Park. While the plan did not specifically address the Belnel neighborhood, the proposed Match campus development fits well with the integrated urban design goals advocated in the plan.

■

Fairmount Corridor

The site is located along the MBTA Fairmount Commuter Rail line as shown in **Figure 3-7**. One of the planned new stations on the line, the River Street Station, is immediately adjacent to the site at the River Street overpass. The school's staff and students will greatly benefit from the proximity to the planned station in the future.

The Fairmount Corridor has been designated one of five pilot corridors by the Partnership for Sustainable Communities, an interagency program of HUD, EPA and US DOT. The program supports metropolitan planning efforts that integrate housing, land use, economic and workforce development, transportation, and infrastructure investments to help communities become economically strong and environmentally sustainable. Investments from the Partnership are helping to turn the rail line into an engine of economic development and community revitalization: EPA has provided funding to clean up more than 30 brownfield sites within a half-mile of the stations and will provide assistance to a Green Jobs Incubator. HUD funding supports a significant portion of more than 2,000 new housing units being built along the corridor. The Partnership is working with the city and other partners to encourage development of affordable and mixed-income housing near transit.

Match's new campus enhances this planned development, as a school educating the children of existing and new families in the area, and as an employer. Match employees and families benefit from this location along a transit-oriented corridor.

■

Neponset River Greenway

The Neponset River Greenway connects 11 existing and proposed urban wilds in Hyde Park, Mattapan, and Dorchester, as well as the Town of Milton. When complete, the Greenway will be a ten mile pedestrian/bike trail from the mouth of the Neponset River to the 894-acre Fowl Meadows at the City limits, and will provide a direct connection to the Harborwalk. The Greenway will also connect to the 5,800-acre Blue Hills Reservation, providing access to the largest open space within thirty-five miles of Boston.

The Greenway is at the heart of the Massachusetts Department of Conservation and Recreation's (DCR) Neponset Reservation. DCR's 2006 Neponset River Reservation Master Plan provides a long-term plan for improvements to the Reservation, including creating a continuous multi-use trail, improving access to the River and providing new canoe/kayak access points, and upgrading park and recreation areas.

A significant portion of the multi-use trail in Hyde Park has been constructed, and much of the remaining section is in design. The proposed location of this trail is on the south side of the Neponset River within the town of Milton as it passes the proposed site.

■

Immediate Neighborhood Context

The new Match campus is located at the edge of Hyde Park's Belnel neighborhood, a small network of streets with well-maintained single and two-family homes and an active neighborhood association.

The nearest commercial centers to this neighborhood are the shopping areas along River Street and Mattapan Square. The neighborhood is defined by a single point of entry at the intersection of River Street, Old River Street, and Wachusett Street.

Neponset Field Lane, a new street off Poydras Street, was built for the ETC-planned affordable housing residential development. To the east is an undeveloped residential parcel intended for townhouse development, which backs onto Belnel Road homes. The Project parcel fronts onto the west side of the road. At the end of the lane is The Residences at Neponset Field, and one of the only public access points to the Neponset River in the Belnel neighborhood.

■

Design Goals and Concept

The school campus is designed to be respectful of the community and to express and reinforce the strong sense of community, intimacy and collective responsibility that are central to the school's spirit.

The respect for the community is evident in several ways. The Poydras Building is located at the corner of Poydras Street and Neponset Field Lane. The building clearly marks the arrival at the school campus as an inviting and friendly focal point for the community.

The interior of the campus is organized as a courtyard around the playing field, with the River Building on the north and east sides, the Gymnasium on the west, and the Neponset River on the south side. The courtyard and extensive network of open spaces, fields and playground, help reinforce the school's strong sense of community.

■

Campus Layout

The school driveway links the Poydras Building, the River Building, and the Gymnasium Building serving all the Match schools. The driveway is adjacent to the

MBTA right of way to separate vehicular traffic from the central green open spaces and pedestrian student paths.

Each academic building includes classrooms, offices and a multi-purpose space ("the Commons"). The River Building Commons is located across from the entry and looks out onto the play area and the Neponset River beyond. See **Figure 3-8** through **Figure 3-20**, which depict the proposed school and the surrounding areas.

Height and Massing

The Proposed Match School buildings are one or two stories and are significantly lower than their closest neighbor, the four-story Residences at Neponset Field. The two abutting single-family homes at the north edge of the site are 2 ½ stories, as are most of the homes in the Belnel neighborhood.

In keeping with the school's community spirit, the campus is designed as a low-rise complex of small buildings and green open spaces, rather than as a single massive structure. Each building is further subdivided into smaller volumes. The campus is designed to work together with the neighboring residential buildings and the senior housing development, to provide a lower low-density presence on the site.

The proposed academic buildings are two stories high, in keeping with the scale of the Belnel residential neighborhood. The school campus is subdivided into three structures, each of which is further subdivided into smaller components. The Commons in each building is expressed as a separate volume with larger windows. The double-height gymnasium is wrapped by single-story structures housing the lobby and toilets.

The site's location at the end of Poydras Street minimizes its visual impact on the surrounding neighborhood.

Character and Materials

The three school buildings feature large, inviting windows. The cladding materials will be modern and simple, reflecting the school's mission and consistent with the character of the site.

The school buildings have a combination of two building fabrication systems. The two-story wood frame classroom buildings are clad with fiber-cement rain-screen panels of varied colors with projecting overhangs. This cladding system is similar to the adjacent senior housing.

The single story steel frame structures for the gymnasium and the Commons are clad with insulated metal panels, as an updated and modern reminder of the former industrial character of the site.

Open Space, Pedestrian Ways, and Amenities

Accessible paths link the main entrances of all buildings with the play areas located between the driveway/parking area and the river, including the 100′ x 200′ playing field, playground and natural play areas. Children will have direct access from the River Building and Gymnasium to the playgrounds and field by the river, without crossing any driveways. The playground and field form a courtyard bordered by campus buildings and the Neponset River.

From the playground, children will hear the water rushing over the small rapids in the river, and the views of the water through the trees will change throughout the seasons.

The rain gardens between the buildings and the river enhance the continuity between the school yards and the riverfront, while storing and treating the site stormwater. The existing chain link fence along the river will be replaced with a new fence, and new plantings will be indigenous species appropriate for the wooded riverfront habitat.

Landscaping

The new campus will have a variety of different landscaped areas along the Neponset River as well as at the school entrance on Poydras Street and Neponset Field Lane.

Groves of existing and new trees surround the edge of the site, providing visual cues that connect the buildings, parking, and amenities, while mitigating views to and from the abutting properties.

The lawn area extends from the parking lot to the sports field and playground, quickly transitioning into a more natural field of dry meadow as it stretches towards the Neponset River. A children's playground is nestled between the River Building and a grove of trees to provide respite for children. The natural playgrounds will be designed using the site's natural features, including grassy berms and hills as well as boulders and logs salvaged from the clearing of the site.

To the south a multi-use synthetic turf sports field extends between the Gymnasium and River Building.

The rain gardens adjacent to the riverfront setback will be planted with native and adapted species selected for their capacity to treat stormwater, as well as provide a visual amenity for the riverfront site.

Site Signage

The signage for the school will be designed to make the vehicular and pedestrian flow through the site clear and readily understandable to faculty, staff, families, visitors, and emergency vehicles to the school.

The campus is approached at the corner of Poydras Street and Neponset Field Lane. Awning–mounted signage will clearly marks arrival at the school campus. The signage indicates the driveway for staff, parents, and visitors off Poydras Street, and the bus entry on Neponset Field Lane.

Along the driveway, signs mark the Poydras Building, the River Building, and the Gymnasium.

Vehicle Access, Circulation, and Parking

The campus driveway is key to the safe vehicle circulation through the site. Parking for staff, parents and visitors, will be accommodated on-site rather than on the surrounding neighborhood streets. The bus pick-up and drop-off queue is in front of the Poydras Building with a dedicated drive aisle, a one-way loop from Neponset Field Lane to Poydras Street.

The driveway provides access to drop-off areas, parking, all building entrances, service areas, and a separate bus queuing area.

The main bus pick-up/drop-off point is a one-way loop to the right of the driveway, exiting onto Poydras Street.

The parent and visitor parking and queue area is in front of the River building, with a turnaround at the west end of the area. The staff parking is located past the turnaround at the far end of the driveway in front of the Gymnasium.

The total parking along the driveway, not including pick-up/drop-off queue areas, will include approximately 79 off-street spaces.

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Figure 3-1

Site Plan

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Figure 3-2

Aerial Photograph

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Figure 3-3

The Residences at Neponset Field
Senior Housing

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Figure 3-4

Overview of site with chimney in background

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Figure 3-5

Garage for Demo

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Figure 3-6

Neponset River Reservation

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Figure 3-7

River Street Station

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Figure 3-8a

View from Poydras Street

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Figure 3-8b

View from Neponset River

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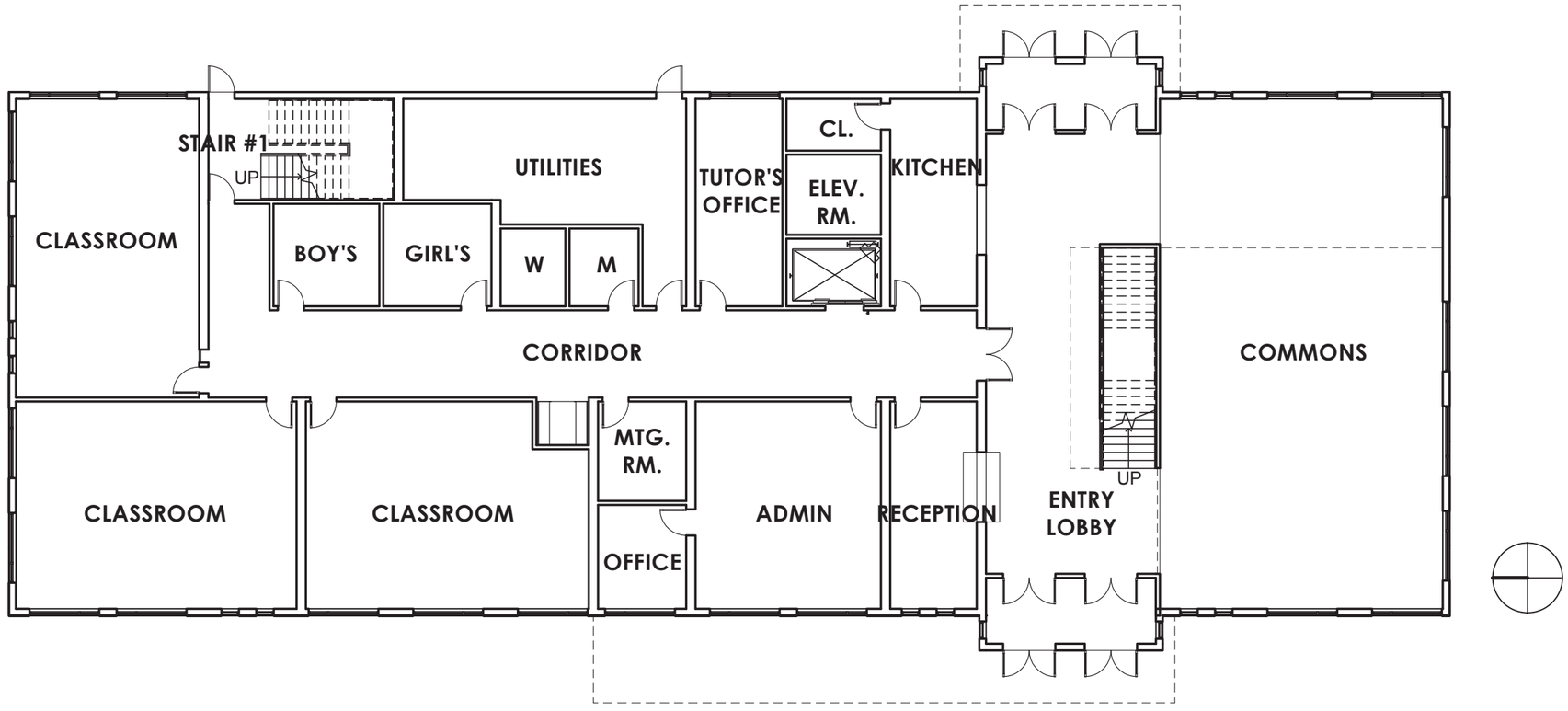

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Figure 3-9

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Poydras Building - First Floor Plan
Scale: 1/16" = 1'-0"

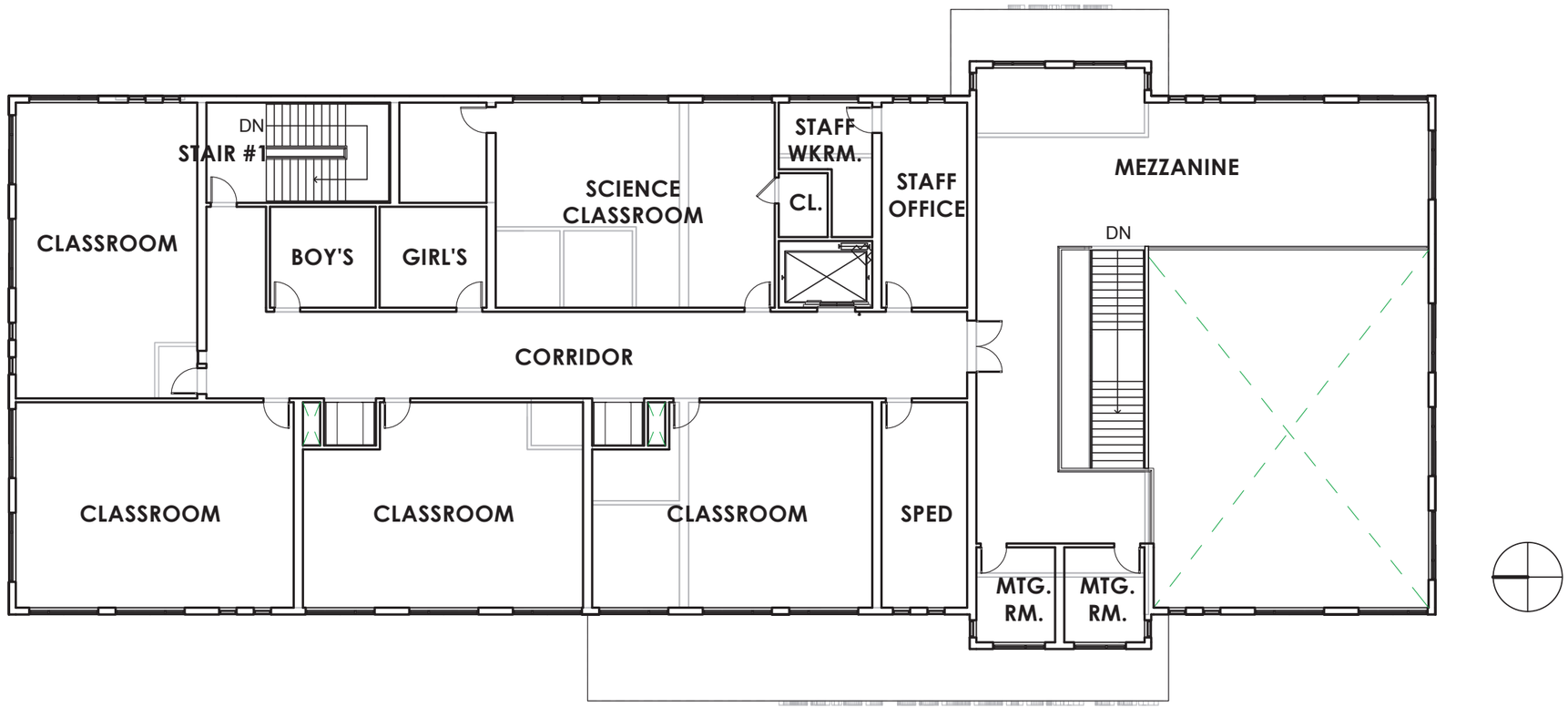

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Figure 3-10

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Poydras Building - Second Floor Plan
Scale: 1/16" = 1'-0"

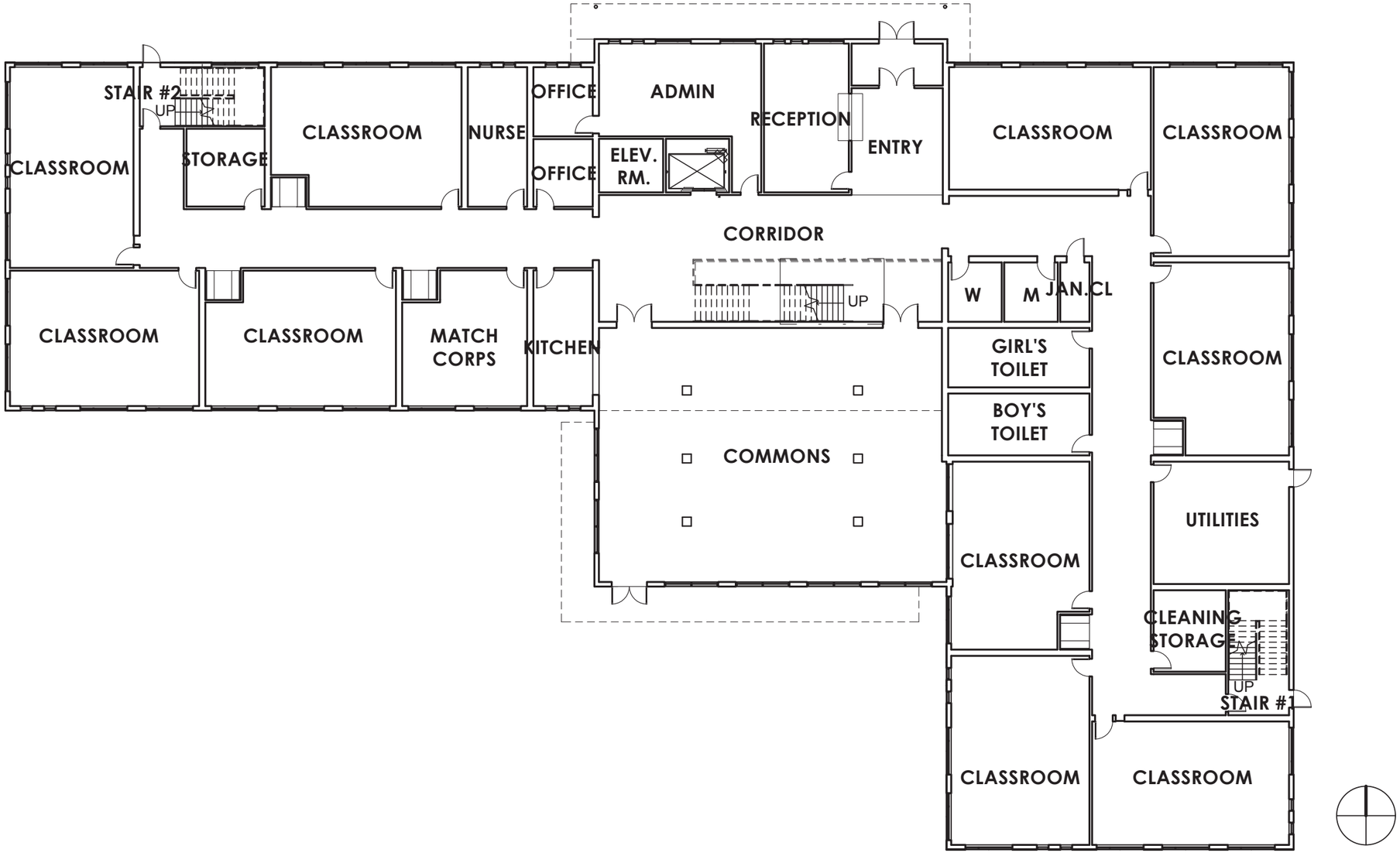

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Figure 3-11

River Building - First Floor Plan
Scale: 1" = 20'-0"

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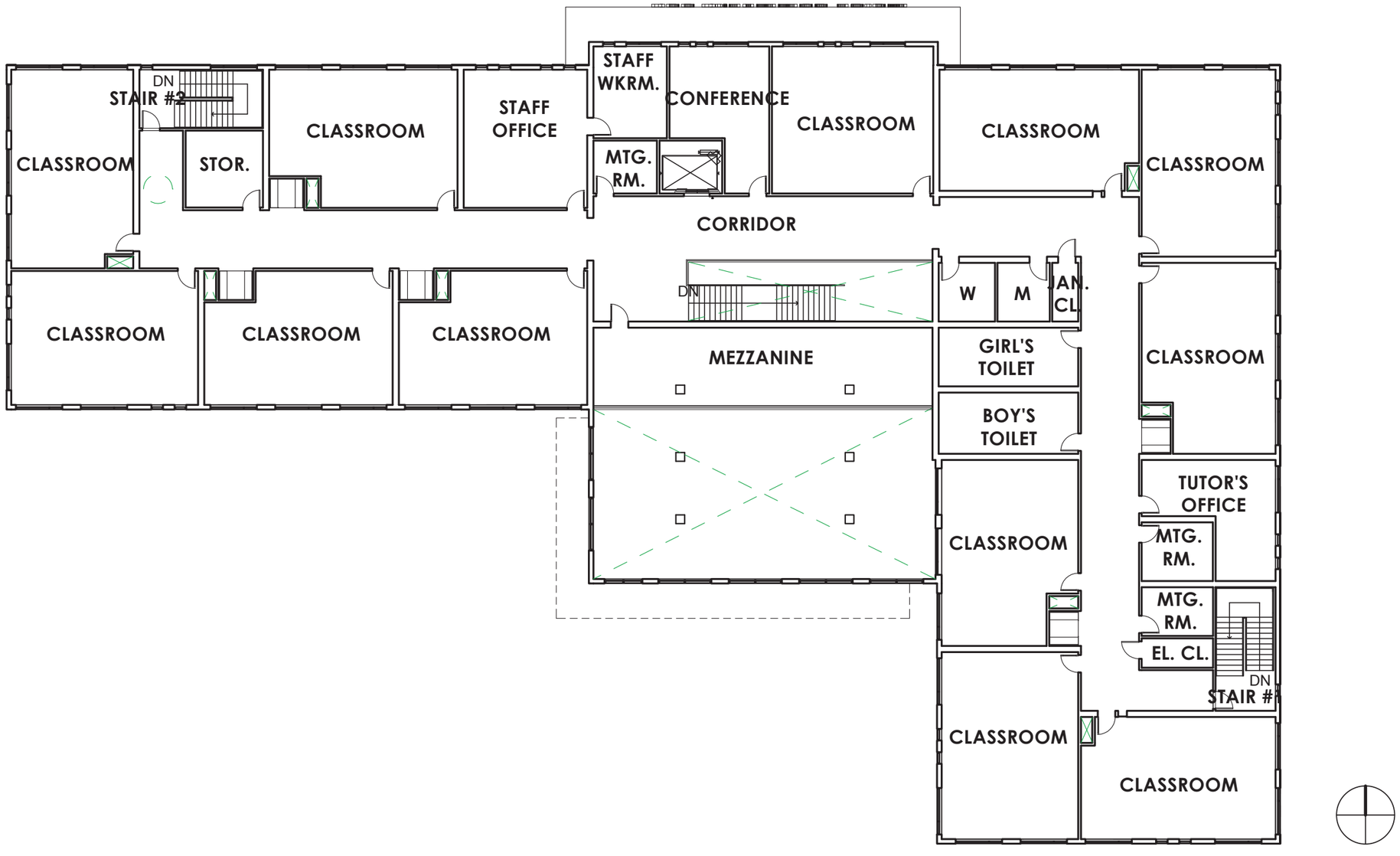
STAIR #2
DN
CLASSROOM
STOR.
CLASSROOM
STAFF OFFICE
STAFF WKRM.
CONFERENCE
MTG. RM.
CLASSROOM
CLASSROOM
CLASSROOM
CORRIDOR
CLASSROOM
CLASSROOM
CLASSROOM
DN
MEZZANINE
W
M
JAN. CL
GIRL'S TOILET
BOY'S TOILET
CLASSROOM
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MTG. RM.
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STAIR #
CLASSROOM
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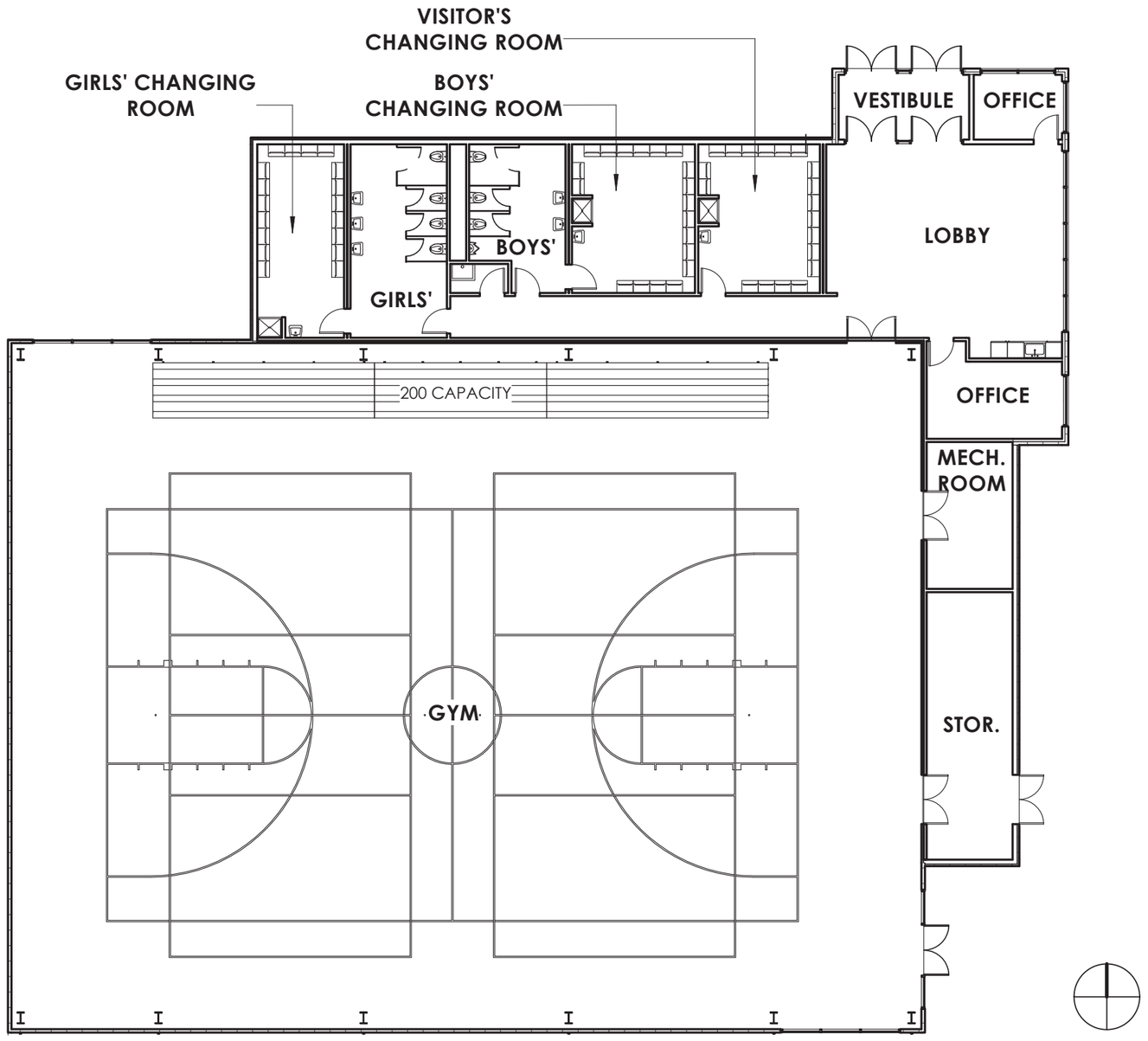

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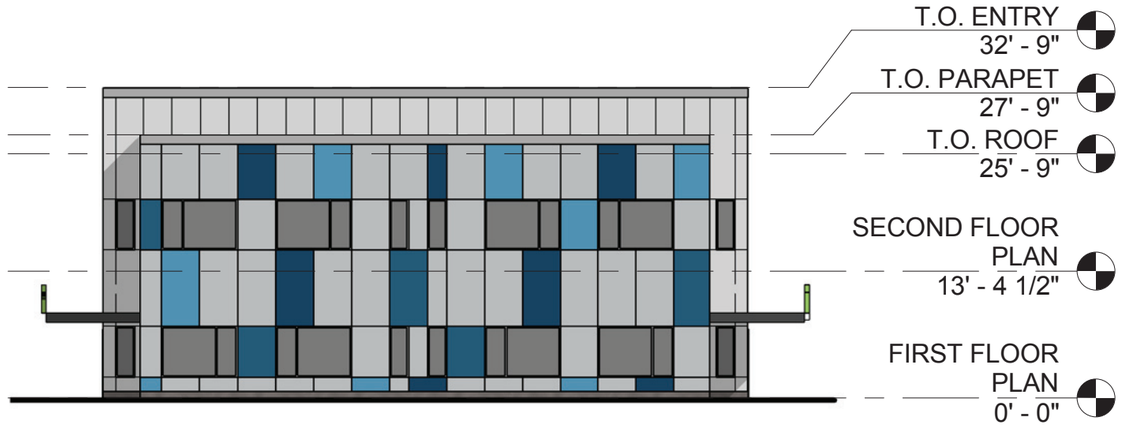
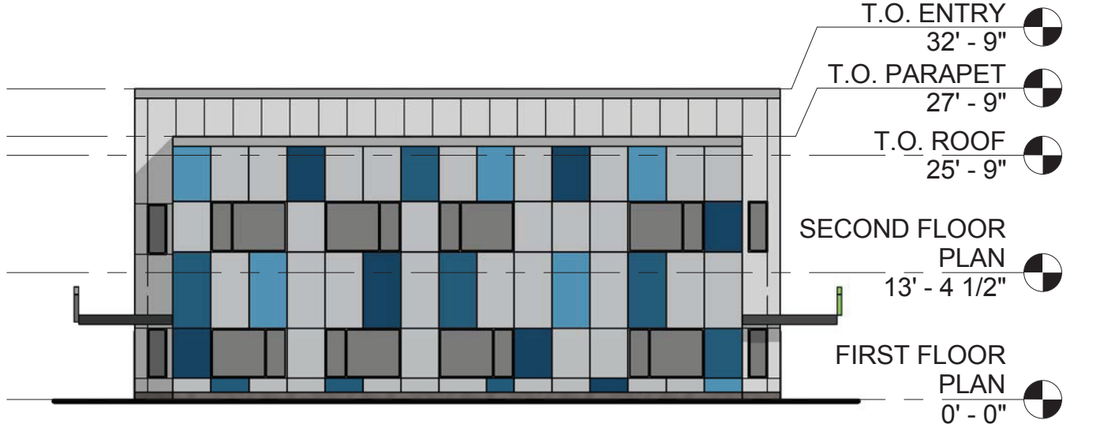
Figure 3-13

Gymnasium - Floor Plan
Scale: 1/16" = 1'-0"



1 NORTH ELEVATION
1/16" = 1'-0"



2 SOUTH ELEVATION
1/16" = 1'-0"

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Figure 3-14a

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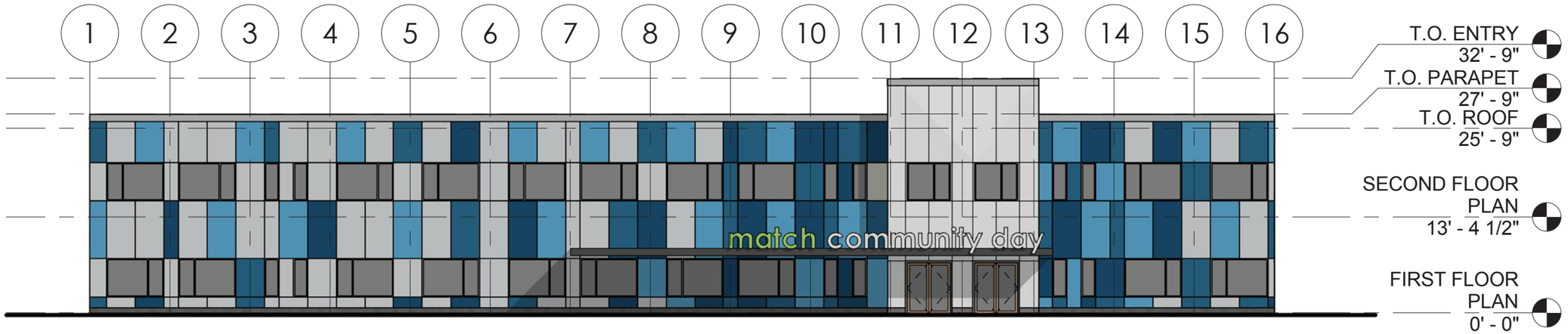
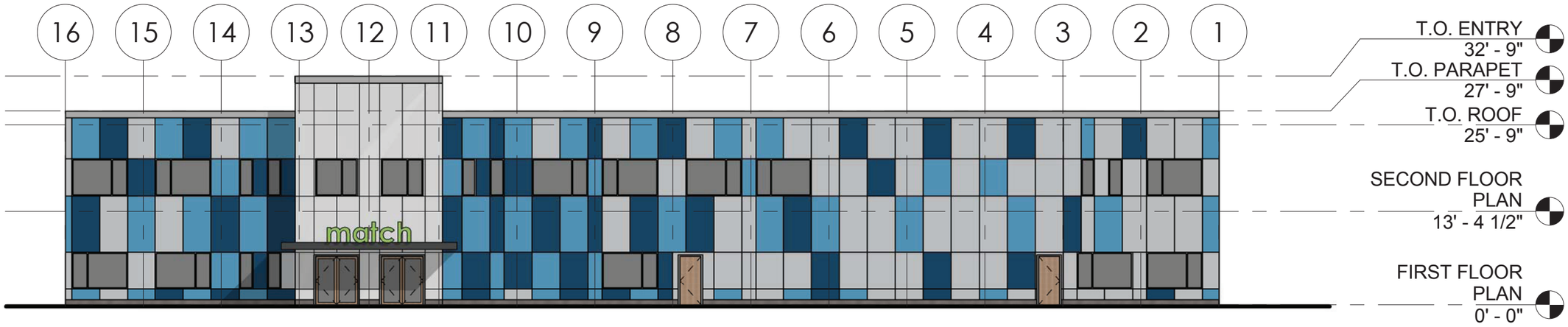
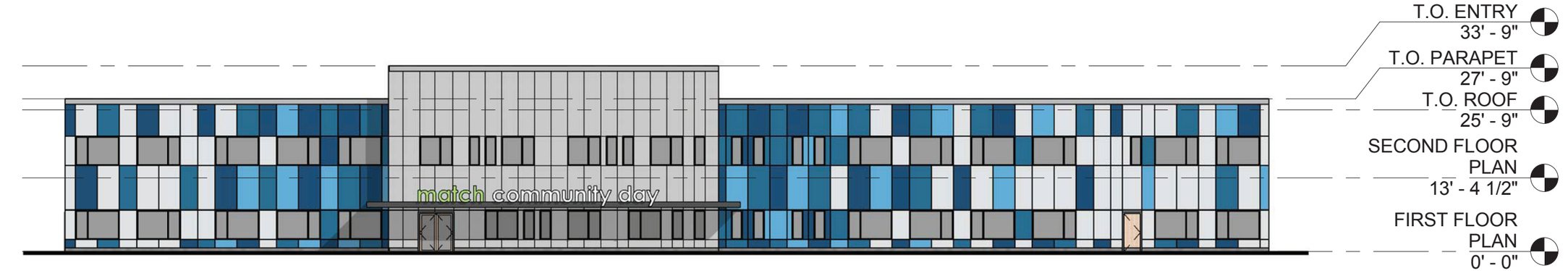
Poydras Building - Exterior Elevations
Scale: 1/16" = 1'-0"



1 WEST ELEVATION
1/16" = 1'-0"

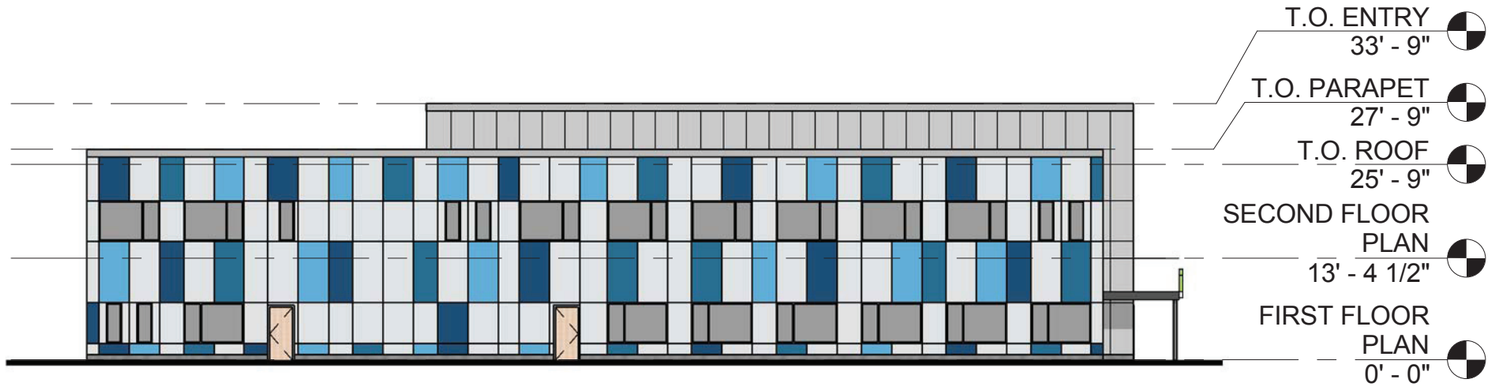


2 EAST ELEVATION
1/16" = 1'-0"

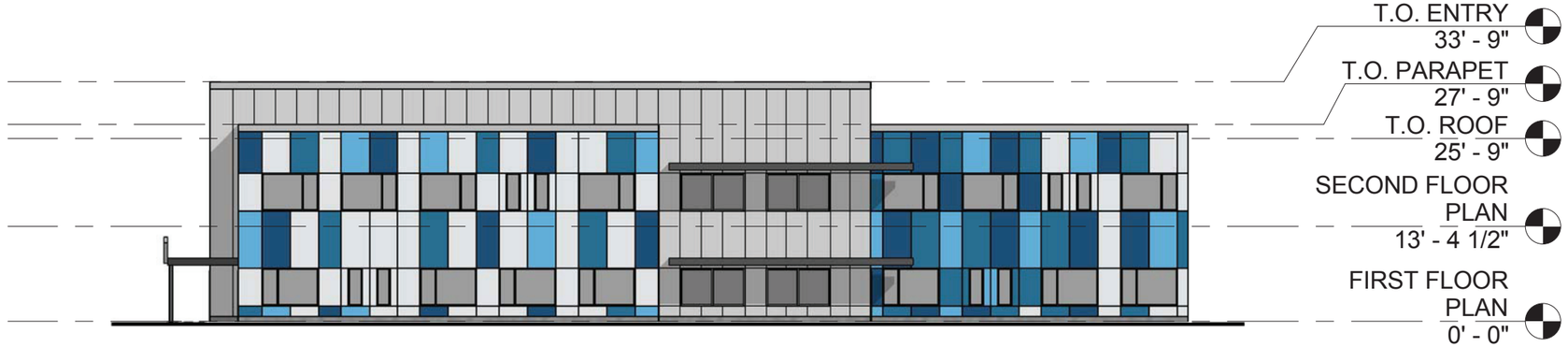


1 NORTH ELEVATION
1" = 20'-0"

2 SOUTH ELEVATION
1" = 20'-0"



1 EAST ELEVATION
1" = 20'-0"



2 WEST ELEVATION
1" = 20'-0"

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Figure 3-16

River Building - Exterior Elevations
Scale: Scale: 1" = 20'-0"

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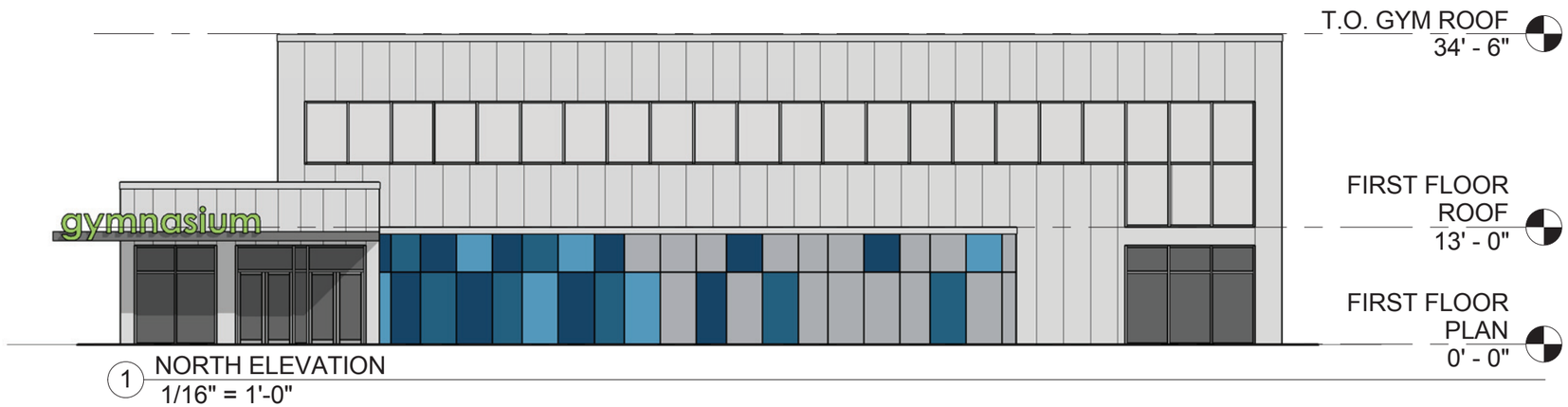
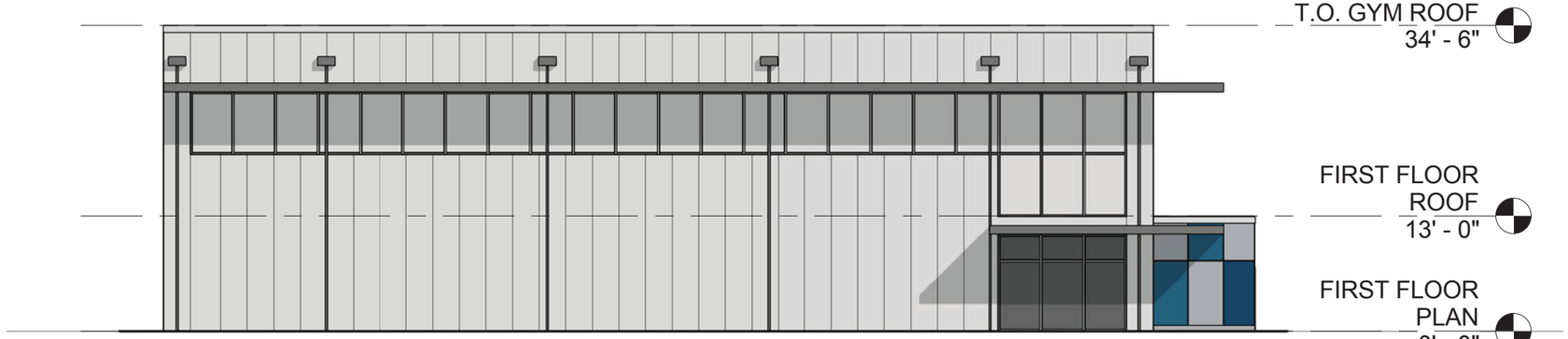


1 NORTH ELEVATION
1/16" = 1'-0"



2 SOUTH ELEVATION
1/16" = 1'-0"

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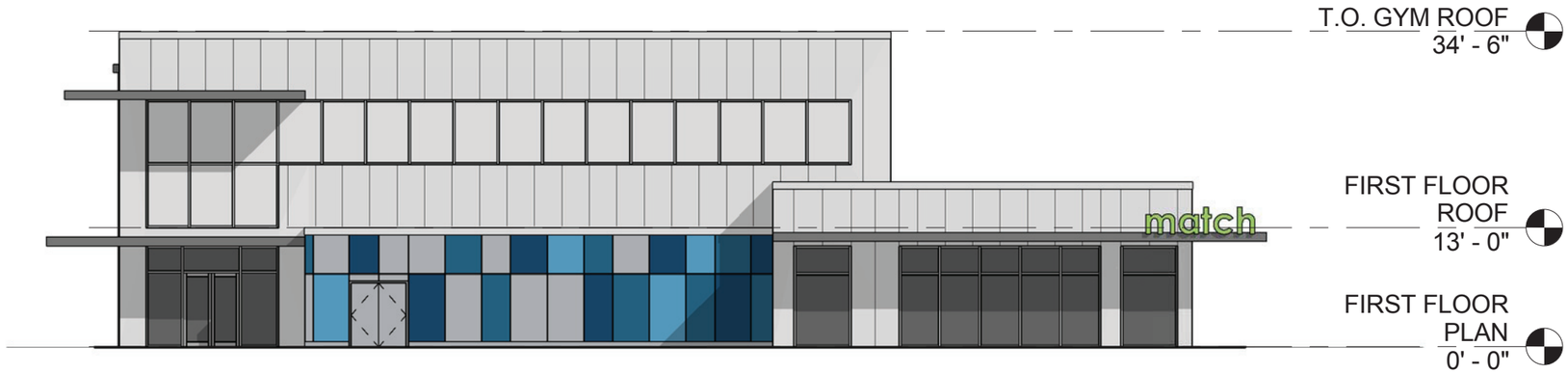
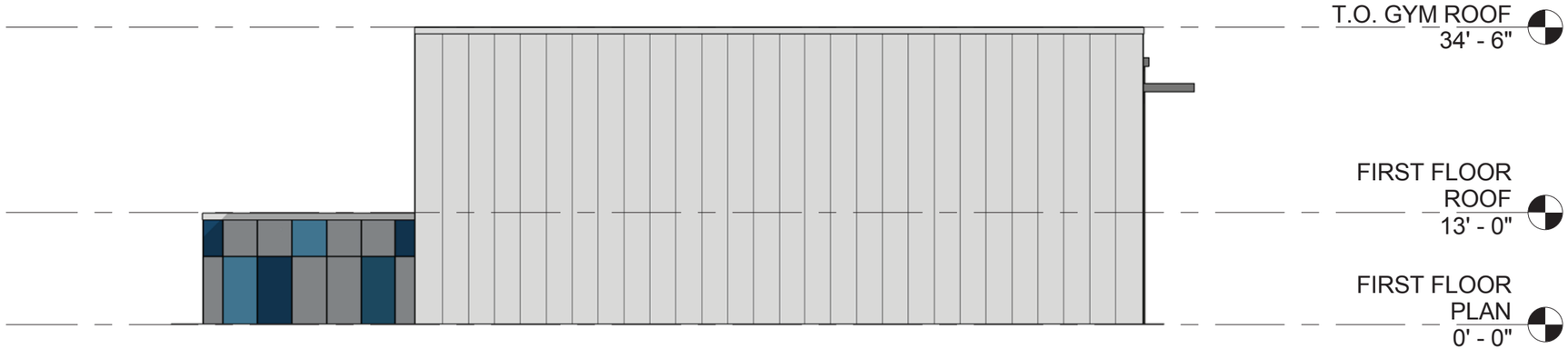
Figure 3-17a

studio GO ARCHITECT

Gymnasium - Exterior Elevations
Scale: 1/16" = 1'-0"

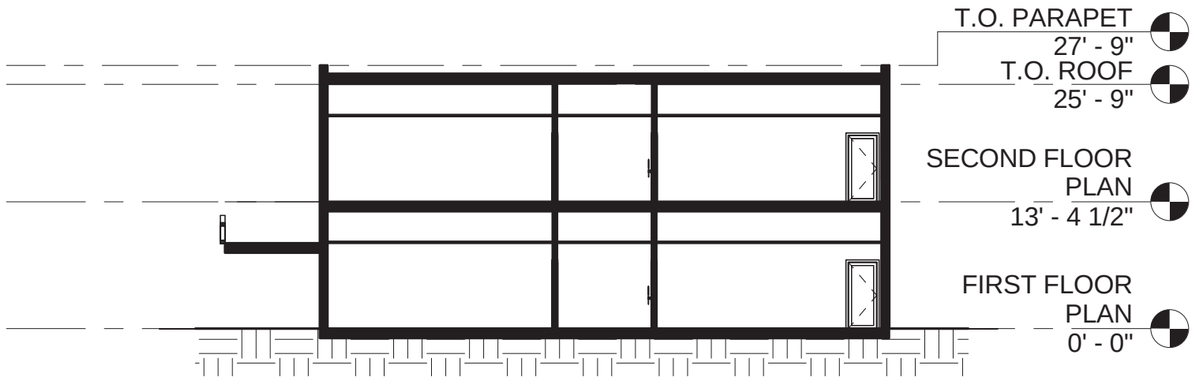


1 EAST ELEVATION
1/16" = 1'-0"

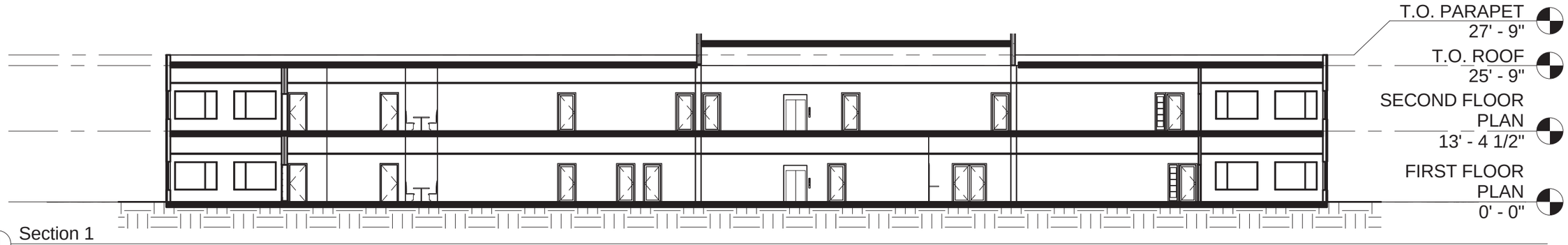


2 WEST ELEVATION
1/16" = 1'-0"

1 LONGITUDINAL SECTION
1/16" = 1'-0"



2 CROSS SECTION
1/16" = 1'-0"



1 Section 1
1" = 20'-0"

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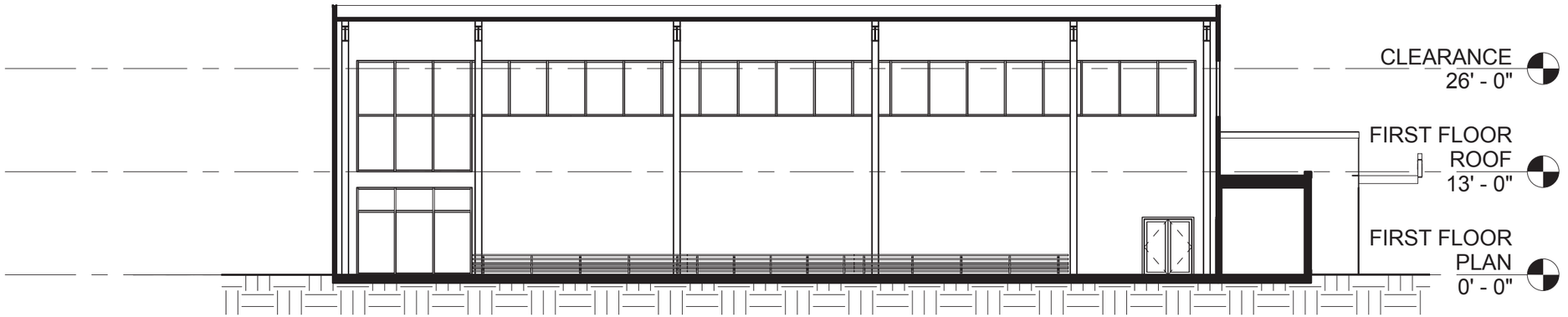
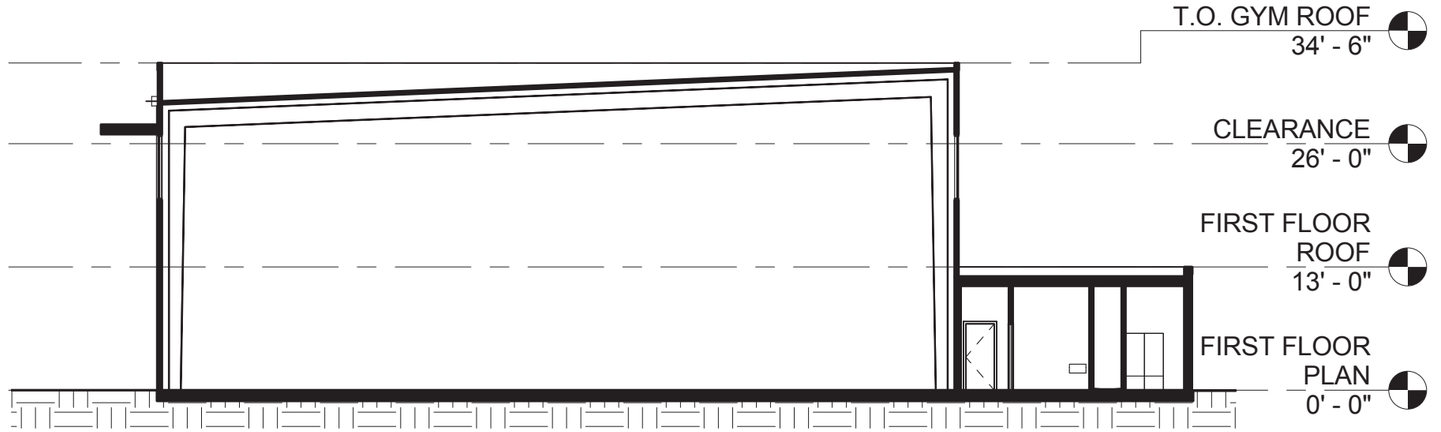
Figure 3-19

River Building - Building Section
Scale: 1" = 20'-0"

studio g ARCHITECT



1 LONGITUDINAL SECTION
1/16" = 1'-0"



2 CROSS SECTION
1/16" = 1'-0"

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Figure 3-20

studio GO ARCHITECT

Gymnasium - Building Sections
Scale: 1/16" = 1'-0"

4

Transportation

Introduction

This chapter presents an evaluation and summary of existing and future transportation infrastructure and operations that are expected relative to the development of the Match Community Day Public Charter School (the "Proponent" or "Match") on Neponset Field Lane in Hyde Park. Match proposes to relocate their existing public school and programs supporting the school from their current location at 86 Wachusett Street in Jamaica Plain to this more spacious, 5.2 acre site. This transportation study has been developed in order to understand the transportation impacts of the Project and to develop appropriate transportation infrastructure improvements to the study area that mitigate the impacts of the Proposed Project as required by Article 80B of the City of Boston Zoning Code. This study specifically addresses the scope developed in collaboration with the Boston Transportation Department (BTD) via ongoing consultation with the Proponent.

The transportation study includes an analysis of the following:

- Vehicle traffic on study area roadways and intersections;
- Parking conditions;
- Loading and service activities;
- Pedestrian activities;
- Public transportation services; and
- Accident history.

In addition, this chapter quantifies and assesses the transportation impacts that are expected under future conditions. The purposes of these analyses are to:

- Define and quantify existing transportation conditions in the Project study area;
- Estimate the transportation impacts that will be generated under future conditions based on anticipated traffic activities generated by the Proposed Project; and

- Develop a set of improvement strategies and measures, which will help to lessen the transportation effects of future growth and to provide improvements to the transportation infrastructure in the area.

The following sections provide an overview of the Project and a summary of findings of the transportation analysis, including anticipated impacts, proposed improvements, a discussion of the study methodology, and a description of the study area. Subsequent sections provide detailed discussions of existing and future transportation conditions expected both with and without the Proposed Project. The final section of the chapter presents a detailed summary of transportation improvement actions that the Proponent is committed to implementing in connection with the Project.

Project Description

The Match Community Day Charter Public School proposes to relocate their existing public school and supporting programs from their current facility at 86 Wachusett Street in Jamaica Plain to a more spacious site providing the opportunity for a true campus environment off of Neponset Field Lane in the Belnel Village neighborhood of Hyde Park. The new location will enable this diverse school to provide a more appropriate campus setting for its students (kindergarten through 12th grade) with greater indoor and outdoor space and enhanced amenities, including assembly and play areas. The Hyde Park site is also more centrally located to the majority of Boston's neighborhoods to whom this institution serves: Dorchester, Mattapan, Roxbury, and Hyde Park.

The Hyde Park site, located adjacent to the residential neighborhood of Belnel Village, was formerly a commercial/light industrial site. A portion of the Project site was also part of the previously approved Neponset Fields Residential project. The 5.2 acre site is currently vacant, with only a small cinder-block storage structure on site (which would be demolished in connection with the Project). Match intends to completely reconstruct the site with new school buildings, a gymnasium, adjacent playing fields, and other areas to be devoted to outdoor classroom space. The site will also have ample off-street parking, bus and parent drop-off/pick-up areas, sidewalks and other walking paths. It is anticipated that the overall school program will be able to accommodate up to 700 students. The Project will also quantify for LEED certification, a requirement of Article 37 of the Boston Zoning Code.

Site improvements include the addition of pervious areas to the site (in the form of greenspace), substantially increasing the available sports and play space for students, and increasing environmental benefits like stormwater infiltration and cleaner runoff to the Neponset River that comply with DEP stormwater management requirements. Parking will be provided in the form of approximately 79 off-street spaces for faculty, staff, and visitors. Match staff and visitors will be required to park their vehicles on site and not on nearby Belnel Village neighborhood streets. An internal circulation

infrastructure has been designed to carry school buses, and passenger vehicles into the school campus to centralized pick-up/drop-off areas. **Figure 4-1** depicts the proposed site plan for the Match Community Day Charter Public School Project and the on-site improvements that will be made.

■

Site and Access Improvements

The Project site will be accessed via curb cuts on Neponset Field Lane (for buses only) and Poydras Street (for staff and parent access/egress). The driveways will provide access to the campus with dedicated parking, bus drop-off area and parent drop-off area as shown previously in the Site Traffic Management and Improvement Plan, **Figure 4-1**. Separate drop-off/pick-up areas will be provided for school buses and for parents who choose to drop-off and pick-up their children attending the school. The intent of the access configuration of the site is to ensure that all school-related traffic is handled on site and not in the adjacent neighborhood. This design will be further managed via a proactive traffic management plan that is intended to eliminate unintended traffic impacts to the surrounding residential area. Match faculty and staff will implement this plan daily.

The Project will be constructed with approximately 79 supporting off-street parking spaces located on site. The School's main entrance on Neponset Field Lane will be stop-controlled. It will also be physically separated from the adjacent Neponset fields Senior Housing facility. Both the entrance and exit driveways will be constructed with ABA/AAB accessible pedestrian amenities in order to safely manage pedestrian traffic in conjunction with vehicular movements. On-site pedestrian amenities include sidewalks surrounding the site between the program spaces and the vehicular loop/parking lots and crosswalks to safely guide students between the drop-off/pick-up loop and the sidewalk.

Summary of Findings

The primary finding of this transportation analysis is that the transportation improvement plan proposed by Match will provide for improved access to the Project site from River Street, which will be upgraded to safely and efficiently manage traffic and pedestrian movements to and from the school. A summary of those improvements is illustrated in **Figure 4-2**. A series of actions have been developed to reduce the impact of the Project on neighborhood streets and generally improve both the vehicular and pedestrian access both within and surrounding the Project site. The proposed parking for the Project will satisfy the expected parking demands generated by the Project (which is driven almost entirely by the faculty/staff population). Finally, the Proponent will explore proactive Transportation Demand Management (TDM) measures and supporting amenities to encourage and support the use of carpooling, transit, walking, and cycling.

A summary of key findings of the transportation analysis for the Project is as follows:

- The Project will generate approximately 119 entering and 90 exiting additional vehicle trips during the weekday morning peak hour and approximately 90 entering and 119 exiting vehicle trips during the weekday evening peak hour.
- Match is committed to designing and implementing a traffic signal at the intersection of River Street/Old River Street/Wachusett Street. This betterment will help to appropriately manage school traffic during peak school arrival and dismissal times. This improvement will also support safe and efficient vehicle access for Belnel Village residents at this location, including safer opportunities to enter this intersection from the neighborhood. It will also support safer pedestrian crossings at the intersection and will provide a new opportunity to slow overall River Street traffic down along this stretch of the corridor.
- Due to the turning radius from River Street eastbound onto Wachusett Street/Old River Street, school buses will not be permitted to enter the neighborhood traveling eastbound on River Street. The school buses will all enter the site traveling westbound to allow for a safe turning movement from River Street.
- The study area intersections will continue to operate at the same levels of service when the school opens as under future No-Build conditions, with the exception of River Street at Tileston Street/Oakcrest Road, which will still operate at an acceptable LOS D during weekday evening peak hour.
- Match is committed to the design and construction of "gaps" in available sidewalks that would connect the Match campus back to River Street along portions of Poydras Street and Old River Street.
- On-site parking will comprise of approximately 79 spaces, which will support parking demands generated by the Project. No off-site parking in the Belnel Village Neighborhood will be allowed. Match will work with the Boston Transportation Department to actively enforce No Parking regulations along Poydras Street and Old River Street.
- The Project site's transportation infrastructure will be designed such that all drop-off/pick-up activity is accommodated on site. School buses and parents will not be permitted to drop-off and pick-up students in nearby Belnel Village residential streets.
- Redevelopment of the site will eliminate a former commercial/light industrial site which in the past generated a measureable amount of trucking activity along both Poydras Street and Old River Street.
- The Project will also discontinue the existing Tchapitoulas Street, providing an opportunity for a generous buffer to adjacent residential homes.

School Campus Traffic Management Actions

1. Staff Parking Lot
2. Parent Drop-Off/Pick-Up
3. School Bus Drop-Off/Pick-Up
4. Stripe crosswalk across Neponset Field Lane at Poydras Street/Potential Curb Reconfiguration
5. Eliminate Tchapitoulas Street while maintaining access to residential homes on Poydras Street
6. Student arrival/dismissal proactively managed by Match Arrival/Dismissal Team
7. Students taking public transit actively managed by Arrival/Dismissal Team
8. Site Access physically separated from senior housing
9. Emergency Vehicle Access

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Figure 4-1

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School Campus Traffic Management and Improvements Plan

Belnel Village Traffic Management and Improvement Actions

1. Work with community/BTD to implement traffic signalization at the intersection of Wachusett Street/Old River Street/River Street
2. Work with community/BTD to assess viability of advanced signal signage on River Street Bridge of Fairmount MBTA Line
3. Implement contiguous sidewalk along southside of Poydras Street/Old River Street
4. Resurface dated pavement section on Poydras Street
5. Poydras Street/Old River street no parking regulations via signage and active enforcement
6. Right turn from River Street to Old River Street prohibited by large buses
7. No school parking in Belnel Neighborhood
8. No pick-up/drop-off in Belnel Neighborhood
- ★ Off-site location of Match Arrival/Dismissal Team during pick-up and drop-off operations

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Figure 4-2

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Belnel Village Traffic Management and Improvements Plan

- The Proponent is also committed to providing and enhancing a wide array of Transportation Demand Management measures offered to faculty and staff as a means to encourage the use of alternative transportation modes.

Study Methodology

The transportation analysis provides an evaluation of anticipated impacts of the Project on the surrounding transportation environment. This analysis was conducted in three phases. The first phase involved defining and quantifying the existing transportation conditions in the Project study area including roadway and intersection geometrics and traffic characteristics for the surrounding transportation infrastructure.

The second phase of the study, eliminates the future transportation conditions in the Project study area by adding the traffic impacts from projected background traffic growth and other planned developments in the area, and an estimate of traffic demands to be generated by the Project to the existing conditions defined in phase one. The first and second phases utilize Synchro version 6.0 to analyze the 2013 Condition as well as the 2018 No-Build and Build Conditions.

The third phase of the study identified measures to improve existing and future transportation conditions including developing mitigation and improvement strategies, such as roadway geometric and intersection improvements, Transportation Demand Management actions and other Project site access improvements, to lessen the transportation impacts of the Project.

Study Area

The study area runs along River Street, Old River Street and Poydras Street in the Hyde Park neighborhood of Boston. The study area includes nine key intersections as illustrated in **Figure 4-3**.

Signalized Intersections

- River Street at Rector Road
- River Street at Wachusett Street/Old River Street (Build Condition)

Unsignalized Intersections

- River Street at Tileston Street/Oakcrest Road
- River Street at Wachusett Street (Existing and No-Build Condition)
- River Street at Caton Street/Mattakeeset Street

- Old River Street at Wachusett Street (Existing and No-Build Condition)
- Old River Street at Osceola Street
- Old River Street at Belnel Road
- Poydras Street at Neponset Field Lane
- Poydras Street at Tchapitoulas Street (Existing and No-Build Conditions only)

■

Roadway Jurisdiction

All of the study area roadways and intersections are regulated and maintained under the jurisdiction of the City of Boston, with the exception of Tchapitoulas Street. Tchapitoulas Street is a private street. The City of Boston controls and maintains all traffic signal controls in the area.

Existing Conditions

Evaluation of transportation impacts associated with the Proposed Project is based upon an understanding of the existing transportation system in the Project study area. The evaluation of existing transportation conditions in the study area includes roadway geometry, traffic controls, daily and peak hour traffic volumes, traffic safety data, pedestrian, and public transportation information. Each of these elements is described in the following sections.

■

Roadway Conditions

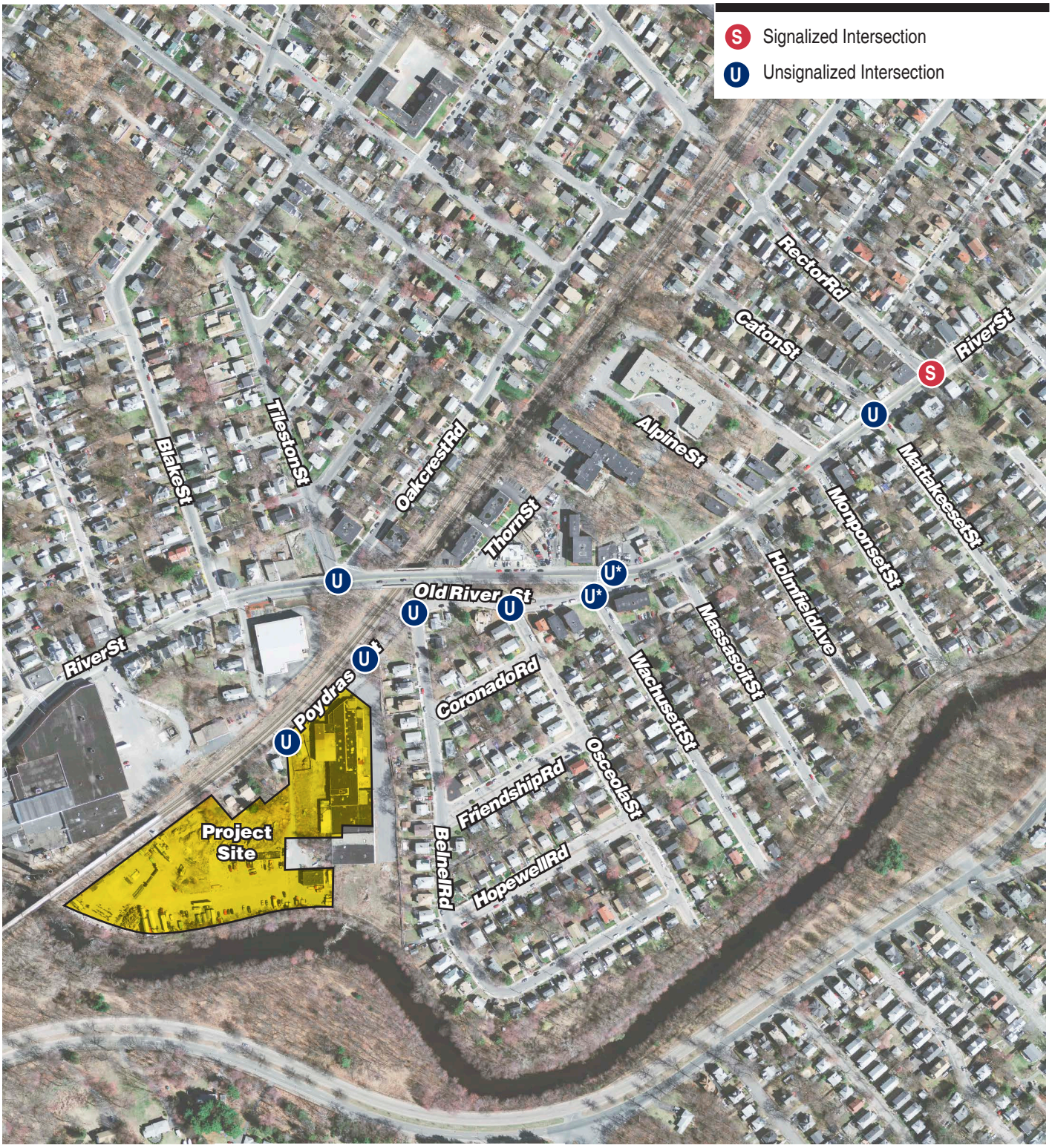
The principal roadways and intersections in the Project study area are described briefly below. The descriptions of the roadways include physical characteristics and adjacent land uses.

Roadways

The following roadways are evaluated in the transportation analysis.

River Street

River Street is a two-lane roadway in the northeast/southwest direction located within the study area north of the site. In the vicinity of the study area, River Street provides sidewalks and parking, with snow emergency and street cleaning restrictions. MBTA Bus Routes 24 and 33 each travel along River Street within the



* Studied as Signalized Intersection in Build Condition

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Figure 4-3

Study Area Intersections

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study area. Land uses adjacent to River Street are generally residential and commercial in nature.

Old River Street

Old River Street is a two-lane roadway in the east/west direction. The roadway begins at the intersection of Wachusett Street at River Street and extends just passed Belnel Road where it becomes Poydras Street. The street provides a sidewalk along most of the south side of the street within the study area. There are no posted parking restrictions on either side of the road. The land adjacent to the roadway on the south side is residential while the north side of the road is an embankment to River Street.

Poydras Street

Poydras Street is a two-lane roadway in the northeast/southwest direction. The roadway begins at just after the intersection of Old River Street at Belnel Road, where Old River Street becomes Poydras Street, and extends just passed Tchapitoulas Street. Poydras Street provides a sidewalk along most of the south side of the street within the study area. There are no posted parking restrictions on either side of the road. The land adjacent to the roadway on the south side is residential while the north side of the road is adjacent to the MBTA's Fairmont Commuter Rail Line tracks.

Tchapitoulas Street

Tchapitoulas Street is a poorly paved, one-lane private way in the north/south direction. The roadway starts at Poydras Street and terminates at a gate located near the site property line. No sidewalks or parking is provided along the roadway. Under future Build conditions, Tchapitoulas Street is discontinued by moving the egress way into the site. This also provides the adjacent residents with a substantial vegetative buffer to the site.

Neponset Field Lane

Neponset Field Lane is a newly constructed, two-lane roadway that has been constructed to City of Boston standards. The roadway starts at Poydras Street and currently serves as the access road for the Neponset Fields Residential project. Sidewalks and parking is provided along both sides of the roadway. Under future Build conditions, Neponset Field Lane becomes the primary access and egress roadway for the Project site.

Intersections

The following study area intersections are evaluated in the transportation analysis:

River Street at Tileston Street / Oakcrest Road

The River Street at Tileston Street/Oakcrest Road intersection is a four-legged un-signalized intersection with stop-control on the Tileston Street and Oakcrest Road approaches. The River Street eastbound and westbound approaches provide one general-purpose travel lane. If there are no vehicles parked along the curb, there is sufficient width for through vehicles to maneuver around turning vehicles. MBTA Bus Routes 24 and 33 stop on River Street westbound, just after the intersection. The Tileston Street and Oakcrest Road southbound approaches each provide one general-purpose travel lane. Sidewalks are provided along all approaches of the intersection and crosswalks are provided across Tileston Street, Oakcrest Street and the west leg of River Street. On-Street parking is available on all the approaches.

River Street at Wachusett Street

River Street at Wachusett Street is a three-legged un-signalized intersection, with stop-control on the Wachusett Street approach. The intersection was recently reconstructed in 2010 by the public works department in response to the Neponset Fields Article 80 approval. The River Street eastbound and westbound approaches provide one general-purpose travel lane. If there are no vehicles parked along the curb, there is sufficient width for through vehicles to maneuver around turning vehicles. MBTA Bus Routes 24 and 33 stop at both the River Street eastbound and westbound approaches. The Wachusett Street northbound approach provides one general-purpose travel lane. Sidewalks are available on all approaches and crosswalks are provided across Wachusett Street and the River Street westbound approach. Parking is available along River Street with the exception of the MBTA bus stop. With construction of the Proposed Project, this intersection becomes signalized.

River Street at Caton Street / Mattakeeset Street

River Street at Caton Street/Mattakeeset Street intersection is a four-legged un-signalized intersection with stop-control on the Caton Street and Mattakeeset Street approaches. The River Street eastbound and westbound approaches provide one general-purpose travel lane. Similar to the rest of River Street, if no vehicles are parked along the curb, there is ample width to maneuver around a turning vehicle. The Mattakeeset Street northbound approach provides one general-purpose travel lane. Caton Street is one-way northbound, away from the intersection. MBTA Bus Routes 24 and 33 stop at both the River Street eastbound and westbound approaches. Sidewalks are available along all approaches. Parking is available along all the approaches with the exception of the MBTA bus stop on River Street.

River Street at Rector Road

River Street at Rector Road is a three-legged, actuated two phase signalized intersection, with concurrent pedestrian movements. The River Street eastbound and westbound approaches provide one general-purpose travel lane. If there are no vehicles parked along the curb, there is sufficient width for through vehicles to maneuver around turning vehicles. Rector Road is one-way southbound, into the intersection. Its approach provides one general-purpose travel lane. Sidewalks are provided along all approaches of the intersection and crosswalks are available across Rector Road and the River Street east leg. Parking is available on all the approaches.

Old River Street at Wachusett Street

Old River Street at Wachusett Street is a three-legged un-signalized intersection with stop-control on the Old River Street eastbound approach. The Old River Street eastbound approach provides one wide general purpose lane. The Wachusett Street northbound and southbound approaches provide one general-purpose lane. This intersection is offset less than 20 feet from the intersection of River Street at Wachusett Street. Sidewalks are provided along both sides of Wachusett Street and the south side of Old River Street with a crosswalk provided across the south leg of Wachusett Street. Parking is provided on all the approaches. This intersection will be included in the River Street/Wachusset Street intersection under the future Build Condition.

Old River Street at Osceola Street

Old River Street at Osceola Street is a three-legged un-signalized intersection with stop-control on the Osceola Street approach. The Old River Street eastbound and westbound approaches provide one wide general purpose lane. The Osceola Street northbound approach provides one general-purpose travel lane. Sidewalks are provided along both sides of Osceola Street and the south side of Old River Street. On-street parking is provided on all the approaches.

Old River Street at Belnel Road

Old River Street at Belnel Road is a three-legged un-signalized intersection with stop-control on the Belnel Road approach. The Old River Street eastbound and westbound approaches provide one wide general purpose lane. The Belnel Road northbound approach provides one general-purpose travel lane. Sidewalks are provided along both sides of Belnel Road and the south side of Old River Street. Parking is provided on all the approaches.

Poydras Street at Neponset Field Lane

Poydras Street at Neponset Field Lane is a three-legged un-signalized intersection with stop-control on the Neponset Field Lane approach. The Poydras Street

eastbound and westbound approaches provide one wide general purpose lane. Neponset Field Lane was recently built in conjunction with the Neponset Fields Elderly Housing building. The northbound approach is a single general purpose lane. Sidewalks are provided along both sides of Neponset Field Lane and the south side of Poydras Street. On-street parking is provided on all the approaches.

Poydras Street at Tchapitoulas Street

Poydras Street at Tchapitoulas Street is a three-legged un-controlled intersection. The Poydras Street eastbound and westbound approaches provide one wide general purpose lane. The eastbound approach is a dirt road that leads to two residential houses. Tchapitoulas Street is a poorly paved, unmarked lane that under existing conditions operates as a two way private road. A sidewalk and on-street parking are provided along the south side of the east leg of Poydras Street. Under future Build Conditions, Tchapitoulas Street will be discontinued thus removing this intersection.

■

Traffic Volume Data Collection

To better assess the study area's existing conditions, traffic volumes were collected. Manual Turning Movement Counts (TMCs) were conducted on Thursday November 1, 2012. TMCs took place during the morning peak period of 7:00 AM – 9:00 AM and the evening peak period of 4:00 PM – 6:00 PM. Data from the Neponset Fields Residential Boston Redevelopment Authority (BRA) approved Expanded Project Notification Form (PNF) was used to supplement counts within the Belnel neighborhood.

In addition to the TMCs, Automatic Traffic Recorder (ATR) Counts were conducted over a 48-hour period from Wednesday October 31, 2012 through Friday November 2, 2012. One ATR was placed between Wachusett Street and Massasoit Street on River Street and the second was placed between Wachusett Street and Osceola Street on Old River Street.

TMC and ATR raw data are compiled in the Appendix of this Expanded PNF.

■

Existing Traffic Volumes

TMCs and ATRs were used to determine the traffic volumes for the 2013 Existing Condition.

Table 4-1 presents a summary of the daily traffic volumes calculated from the ATR counts. As shown in the table, River Street east of Wachusett Street carries approximately 11,039 vehicles per day (vpd) and Old River Street west of Wachusett Street carries approximately 1,567 vpd on a weekday.

Table 4-1
Existing Traffic Volumes Summary

Location	Daily	Peak Hour					
		Weekday Morning			Weekday Evening		
	Weekday (vpd)[1]	Volume (vph)[2]	"K" Factor[3]	Directional Distribution	Volume (vph)[2]	"K" Factor[3]	Directional Distribution
Old River Street (West of Wachusett Street)							
Eastbound	788	71	9.0%	63%	67	8.5%	49%
Westbound	779	41	5.3%	37%	71	9.1%	51%
Total	1,567	112	7.1%	100%	138	8.8%	100%
River Street (East of Wachusett Street)							
Eastbound	5,024	281	5.6%	44%	407	8.1%	47%
Westbound	6,015	362	6.0%	56%	457	7.6%	53%
Total	11,039	643	5.8%	100%	864	7.8%	100%

Source: Automatic Traffic Recorder (ATR) counts conducted by Accurate Counts in October 2012
1. Daily traffic expressed in vehicles per day.
2. Peak hour volumes expressed in vehicles per hour.
3. Percent of daily traffic that occurs during the peak hour.

The intersection TMCs were used to establish traffic networks for the 2013 Existing Condition for the weekday morning and evening peak hours. The study area's overall weekday morning peak hour was determined to occur between 7:30 AM and 8:30 AM, which coincides with the morning peak hour for the school-generated traffic. The area's overall evening peak hour was determined to occur between 4:15 PM and 5:15 PM. The 2013 Existing Condition weekday morning and evening peak hour traffic volumes are shown in **Figure 4-4** and **Figure 4-5**, respectively.

■

Parking

On-Site Parking

In its existing conditions, the Project site provides no marked off-street parking, although historically it has been used to house construction equipment, vehicles and materials. The site is currently vacant.

On-Street Parking

This study provides an inventory of curb use and parking restrictions within a quarter mile radius of the site. Within the quarter mile area, the on-street parking predominately includes no parking zones, street sweeping regulated zones, and

snow emergency regulated zones. **Figure 4-6** illustrates an inventory of existing curb use and parking restrictions in the study area.

Pedestrians

Weekday morning and evening peak hour pedestrian counts for each study area intersection are presented in **Figure 4-7** and **Figure 4-8**, respectively. Key observations of pedestrian activities in the study area include:

- Sidewalks are provided along the study area streets and intersections including the entire length of River Street and the majority of Old River Street/Poydras Street. River Street provides sidewalks on both sides of the roadway and Old River Street/Poydras Street provides sidewalks only along the south side of the roadway, except for a portion between Belnel Road and Neponset Field Lane.
- Crosswalks are provided at four of the study area intersections including River Street at Tileston Street/Oakcrest Road, River Street at Wachusett Street, River Street at Rector Road, and Old River Street at Wachusett Street.
- The study area intersections with the highest pedestrian volumes were River Street/Caton Street/Mattakeeset Street and River Street/Rector Road. The intersection of River Street/Caton Street/Mattakeeset Street experienced a total of 62 and 115 pedestrian crossings per hour during the weekday morning and evening peak hours, respectively. The intersection of River Street/Rector Road experienced a total of 69 and 92 pedestrian crossings per hour during the weekday morning and evening peak hours respectively.
- Pedestrian crossings were greater during the evening peak hour compared to the morning peak hour at all the study area intersections.

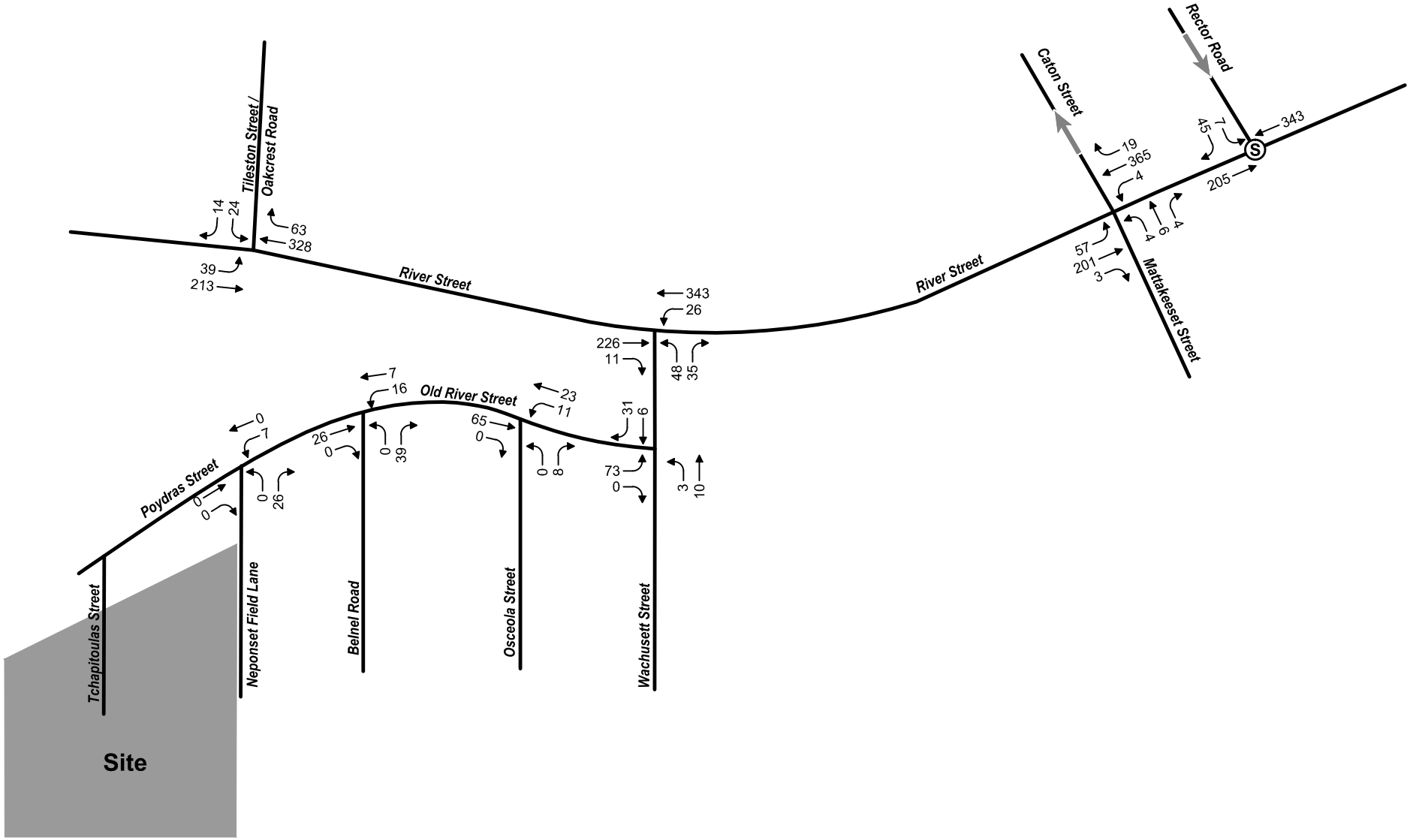
Public Transportation

Massachusetts Bay Transportation Authority (MBTA) services near the Project site include two bus lines. These services, illustrated in **Figure 4-9**, are described in further detail below.

Bus Service

Two bus routes are available near the Project site and are described below.

- **Route 24 and 24/27** (Wakefield Ave. & Truman Highway – Mattapan or Ashmont Station via River Street) provides service along River Street with a stop at the intersection of River Street at Wachusett Street. Weekday service is provided between the hours of 5:44 AM and 1:28 AM from Wakefield Avenue to Mattapan Station. On weekend, Route 24 and 27 run together.



Not to Scale

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Figure 4-4

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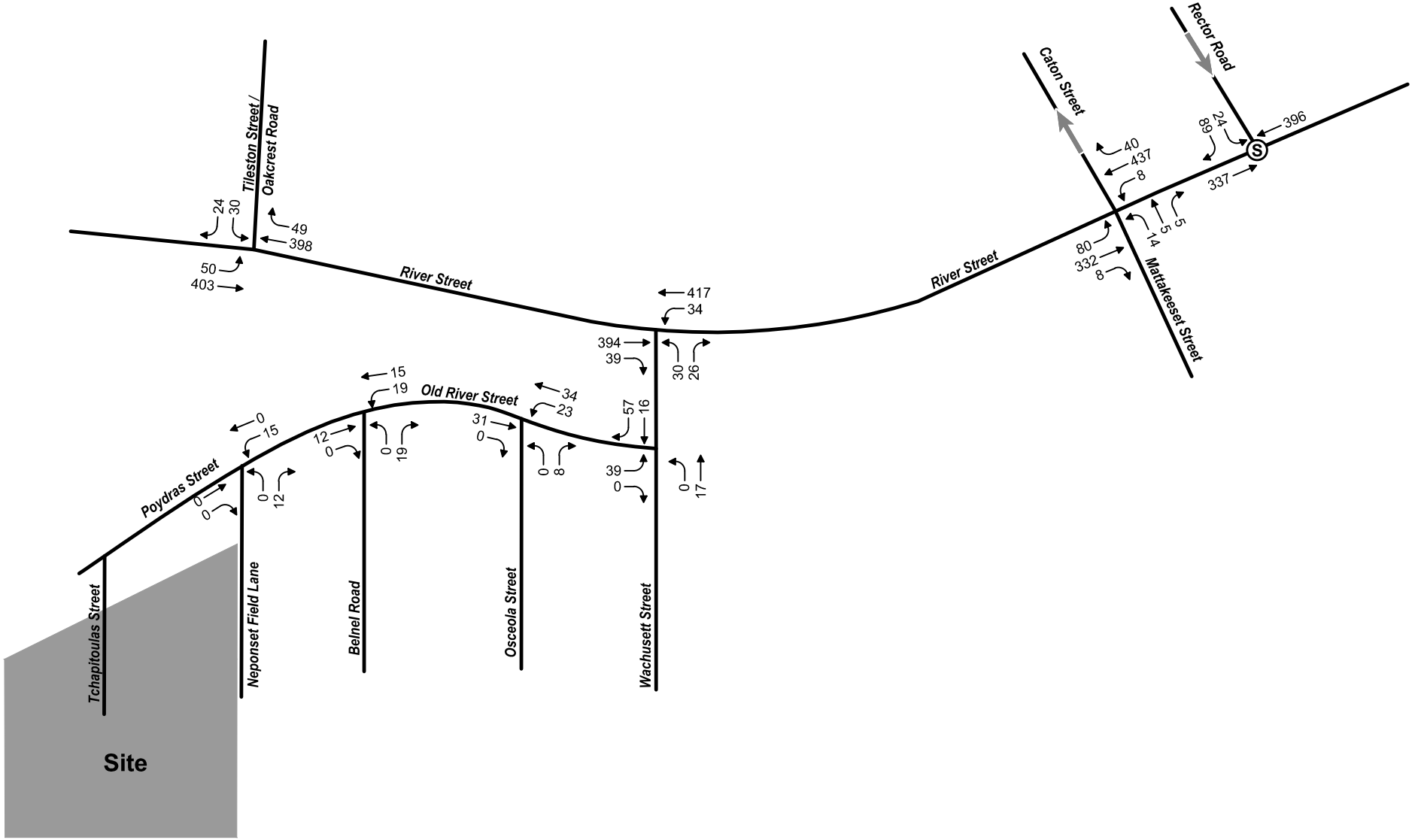
2013 Existing Condition
Morning Peak Hour Traffic Volumes
Match Community Day Public School
Hyde Park, Massachusetts



Not to Scale

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Figure 4-5

Vanasse Hangen Brustlin, Inc.

2013 Existing Condition
Evening Peak Hour Traffic Volumes
Match Community Day Public School
Hyde Park, Massachusetts

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Figure 4-6

On-Street Parking Regulations

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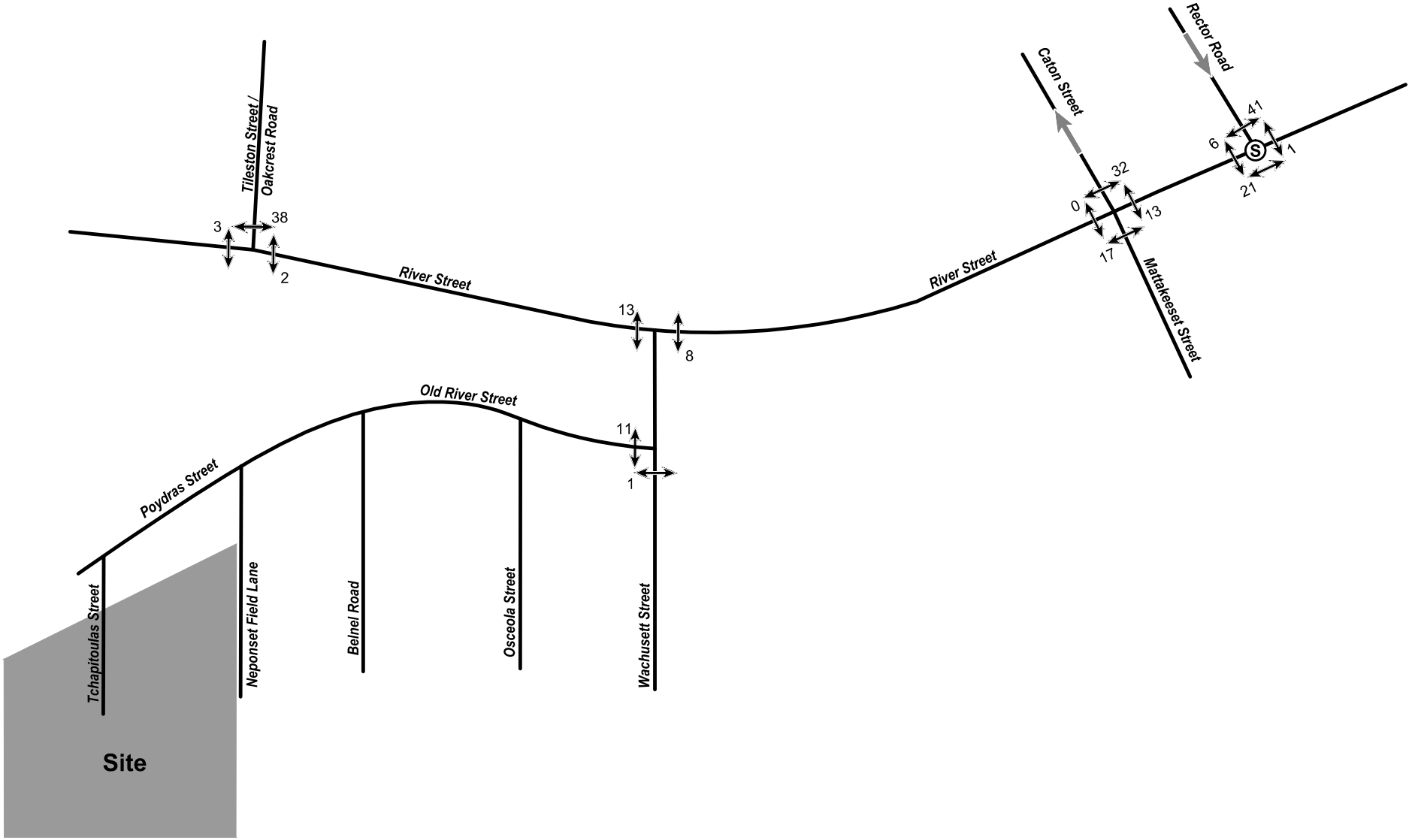

Note:
Pedestrians traveling along Poydras Street/
Old River Street are negligible.

Not to Scale

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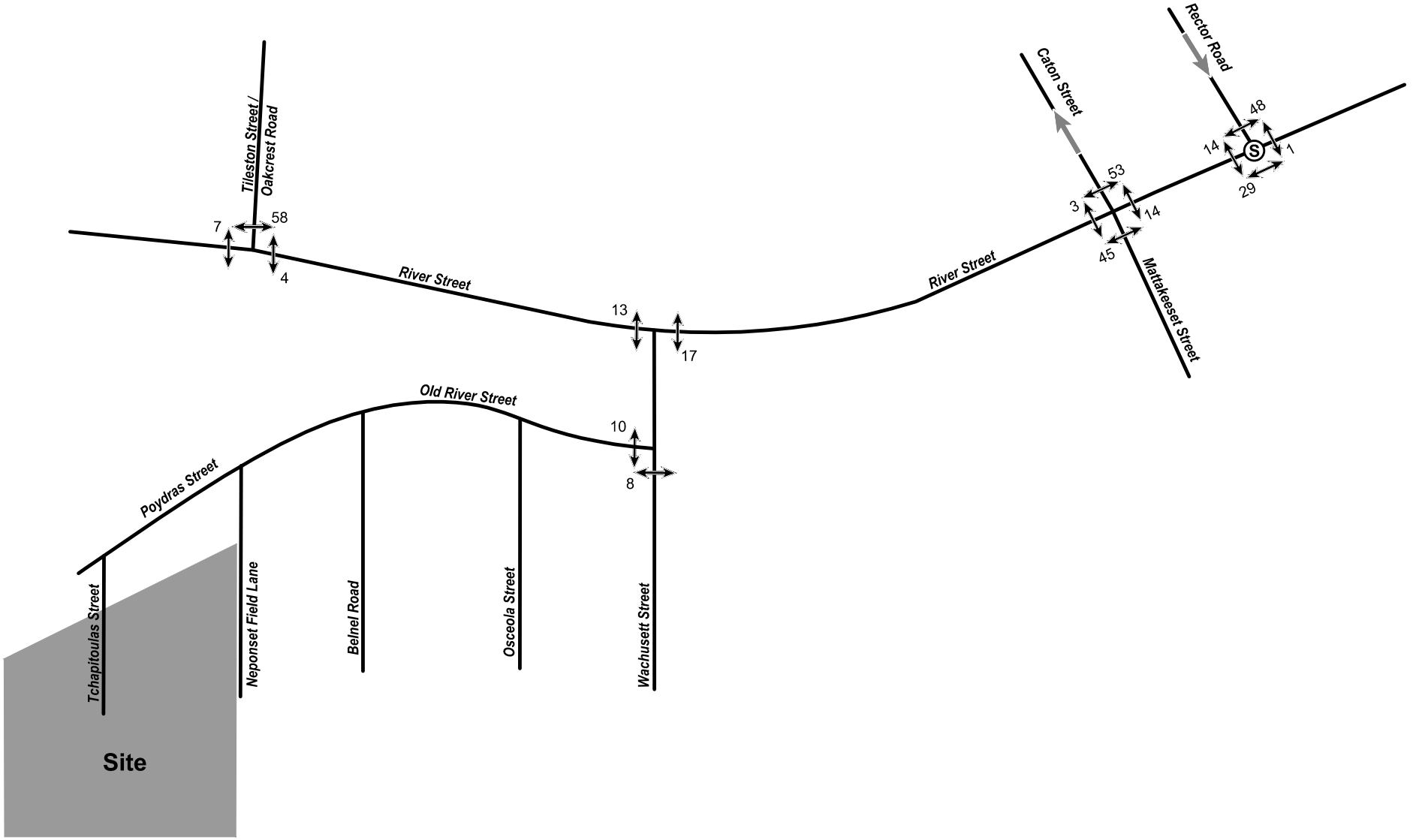
Figure 4-7

Vanasse Hangen Brustlin, Inc.

2013 Existing Condition
Morning Peak Hour Pedestrian Volumes
Match Community Day Public School
Hyde Park, Massachusetts



Note:
Pedestrians traveling along Poydras Street/
Old River Street are negligible.

Not to Scale

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Figure 4-8

VHB Vanasse Hangen Brustlin, Inc.

2013 Existing Condition
Evening Peak Hour Pedestrian Volumes
Match Community Day Public School
Hyde Park, Massachusetts

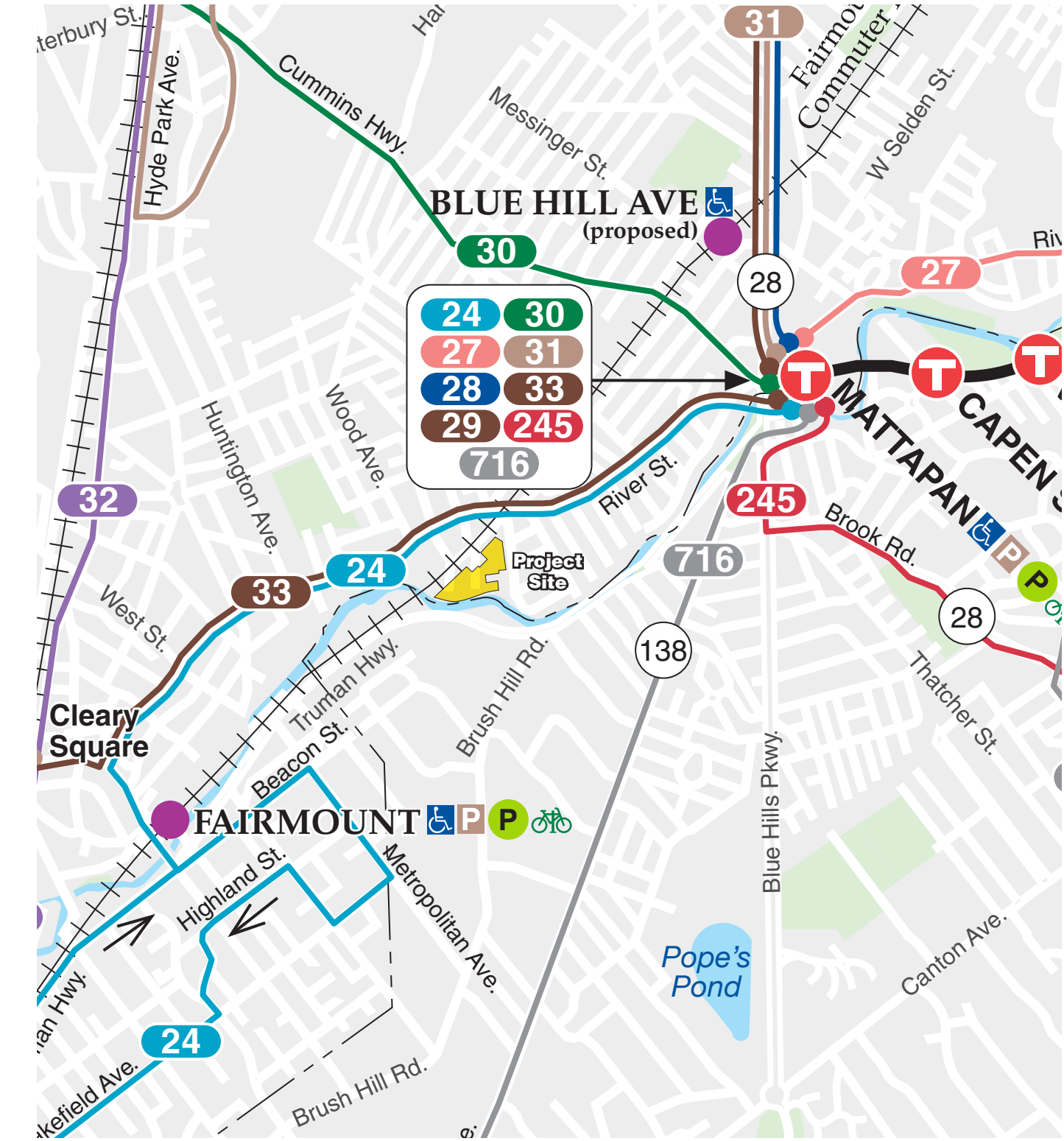

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Figure 4-9

Public Transportation

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- Route 24/27 service is provided between 5:40 AM and 1:32 AM on Saturdays and 9:00 AM and 9:52 PM on Sundays. Ashmont and Mattapan Stations provide a connection to the MBTA Red Line subway and multiple MBTA bus lines.
- **Route 33** (Dedham Line – Mattapan Station via River Street) provides service along River Street with a stop at the intersection of River Street at Wachusett Street. Weekday bus service operates between Milton Street and Mattapan Station from 5:20 AM to 7:29 PM. Saturday service is provided between the hours of 6:20 AM and 7:35 PM and the route does not operate on Sundays. Mattapan Station provides a connection to the MBTA Red Line Subway as well as multiple MBTA bus lines.

Subway

The closest MBTA subway station is the Red Line High Speed Trolley's Mattapan Station which is located approximately one mile from the Project site. The Red Line extends from Mattapan Center to Ashmont, through downtown Boston, to the Alewife Station in Cambridge, providing connections to multiple transit lines along the route.

Commuter Rail

Though the commuter rail runs adjacent to the north side of the Project site, there is no station within walking distance of the site. The nearest commuter rail stations are Fairmont Station and Hyde Park Station; both of the stations are located approximately 1.5 miles from the Project site. The Fairmont Station provides access only to the Fairmont Line, while the Hyde Park Station provides access for the Franklin, Stoughton, and Providence commuter rail lines. Community planning is currently underway to construct a Fairmont Line Station at the railway's intersection with River Street. All of these commuter rail lines terminate/originate at South Station in Boston.

■

Accident History

To identify accident trends and/or roadway safety deficiencies in the study area, crash data were obtained from the MassDOT records for the City of Boston for the most recent three-year time period available (2008 through 2010). A summary of the crash data is presented in **Table 4-2**. The average crash rate (crashes per million entering vehicles) for District 6 is 0.76 for signalized intersections and 0.58 for unsignalized intersections.

There were 7-recorded crashes at the study area intersections over the three-year period that was studied. The majority of the intersections did not have a recorded

crash occur. River Street at Caton Street had the most crashes with three over the three year period. All the intersections fell below the District 6 average crash rate.

Table 4-2
Vehicular Crash Summary (2008 to 2010)

	River Street / Caton Street	River Street / Rector Street	River Street / Wachusett Street	River Street / Tileston Street / Oakcrest Road
Year				
2008	0	0	0	
2009	1	1	0	2
2010	2	0	1	0
Total	3	1	1	2
Average	1.00	0.33	0.33	0.67
Crash Rate	0.28	0.10	0.09	0.17
Collision Type				
Angle	0	0	0	0
Head-on	1	0	0	0
Rear-end	0	0	0	1
Rear-to-Rear	0	0	0	0
Sideswipe, opposite direction	0	0	0	0
Sideswipe, same direction	0	0	0	0
Single vehicle crash	0	0	1	0
Unknown	0	0	0	0
Not reported	2	1	0	1
Total	3	1	1	2
Crash Severity				
Fatal injury	0	0	0	0
Non-fatal injury	2	1	1	0
Property damage only (none injured)	0	0	0	1
Not Reported	0	0	0	1
Unknown	1	0	0	0
Total	3	1	1	2
Time of Day				
Weekday, 7:00 AM - 9:00 AM	0	0	0	0
Weekday, 4:00 PM - 6:00 PM	0	0	0	0
Saturday, 11:00 AM - 2:00 PM	0	0	0	0
Weekday, other time	2	1	1	0
Weekend, other time	1	0	0	2
Total	3	1	1	2
Pavement Conditions				
Dry	1	0	1	1
Wet	0	0	0	0
Snow	0	0	0	0
Ice	0	0	0	0
Sand, mud, dirt, oil, gravel	0	0	0	0
Water (standing, moving)	0	0	0	0
Slush	0	0	0	0
Other	0	0	0	0
Unknown	0	0	0	0
Not reported	2	1	0	1
Total	3	1	1	2
Non Motorists (Bike, Pedestrian)				
Total	0	0	0	0

Source: MassDOT Highway Division

2018 No-Build Condition

Traffic growth within a defined area is a function of expected land development, economic activity, and changes in demographics. A two-step process has been employed to estimate future traffic activity in the Project study area under the 2018 No-Build Condition. First, general area-wide traffic growth was estimated based on regional traffic growth trends along major study area roadways. The focus of this part of the analysis was to develop and apply an annualized growth rate that could be applied to existing condition peak hour traffic volumes to reasonably account for future traffic growth in the area.

Second, peak hour traffic generation estimates for specific developments that are either currently under construction, are approved, or are planned projects that have formally initiated the City of Boston Article 80 Development Review process were added to the resultant volumes produced under the first step. This process generates peak hour traffic volumes for the 2018 No-Build Condition. A more detailed discussion of the process employed to develop peak hour traffic estimates for the 2018 No-Build Condition is presented below.

General Background Traffic Growth

As mentioned previously, in order to account for general background traffic growth, an annualized growth rate was developed and applied to the existing condition peak hour traffic volumes to reasonably account for future through traffic growth in the study area.

An annual growth rate of 0.5 percent per year between 2013 and 2018 was applied to the 2013 Existing Condition. This is a conservative rate of growth given the historical trend of traffic growth in the area has been flat from 2008 to 2013.

Area Development Projects

Project trips for the following applicable Article 80-submitted projects were added to the 2013 Existing Condition, in addition to a general background growth rate, to develop the 2018 No-Build Condition:

- The Shops at Riverwood,
- Neponset Fields Residential Project,
- 875 River Street, and
- Mattapan Heights.

Specific Planned Projects

The Shops at Riverwood is a retail shopping center located on the site of the former Bay State Paper manufacturing facility on River Street in Hyde Park. The project consists of multiple retail buildings totaling 105,000 square feet of development with 315 off-street parking spaces. The project is being built in phases. Approximately 40,000 SF is currently built and another 20,500 SF is currently under construction.

Neponset Fields Residential Project, located on Poydras Street, is a residential development. This development consists of 48 housing units, 51 senior housing units, and 111 parking spaces. The project is being built in phases. At the time of this report, only the senior housing has been constructed.

875 River Street, is a mixed use development located on a currently vacant lot in Hyde Park. The project will consist of 42 residential units, 3 commercial units, and 102 parking spaces on the 94,500SF parcel. There is currently no timetable for the project's construction.

Mattapan Heights is a new residential building located on site of the former Boston Specialty and Rehab Hospital on River Street. This building will consist of approximately 60 rental housing units, all of which will be affordable to households earning up to 60 percent of area median income, with 60 parking spaces. This project is currently under construction.

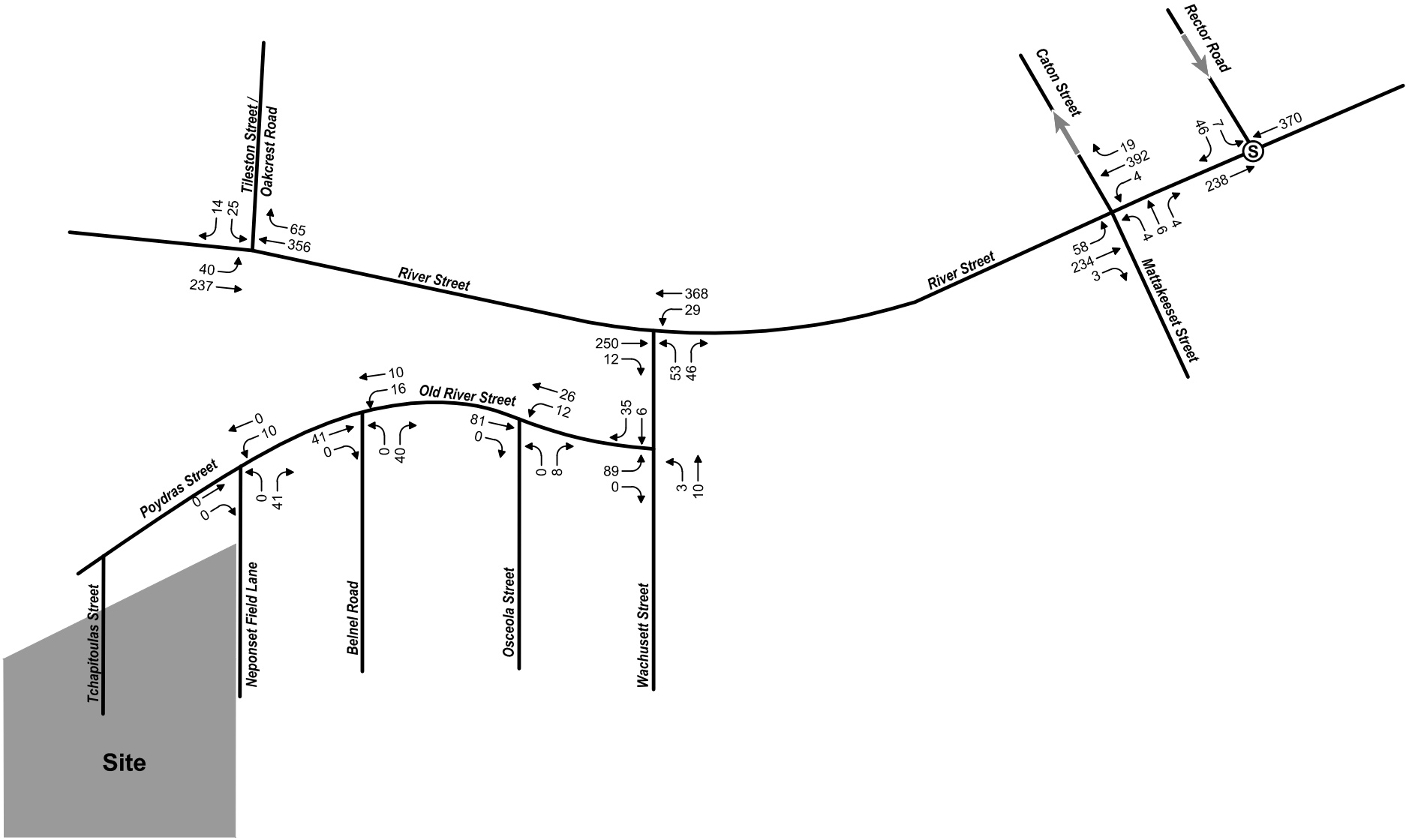
■

2018 No-Build Traffic Volumes

The 2013 Existing Condition volumes were adjusted to 2018 with a growth rate of 0.5 percent per year. The applicable projects that are either planned, approved and/or under construction were then added to these adjusted volumes to create the 2018 No-Build Condition Weekday Morning and Evening peak hour traffic volumes. **Figure 4-10** and **Figure 4-11** present the 2018 No-Build Condition traffic volume networks for the weekday morning and evening peak hours, respectively.

2018 Build Condition

The 2018 Build Condition traffic volumes for study area roadways were developed by estimating Project-generated traffic volumes, distributing these volumes, and assigning them to the Study Area roadways. The traffic volumes expected to be generated by the Proposed Project were added to an adjusted 2018 No-Build Condition traffic volumes to create the year 2018 Build Condition traffic volume networks. The following sections describe the procedures used to develop the adjusted No-Build Conditions and Build Condition traffic volume networks.



Not to Scale

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Figure 4-10

Vanasse Hangen Brustlin, Inc.

2018 No-Build Condition
Morning Peak Hour Traffic Volumes
Match Community Day Public School
Hyde Park, Massachusetts

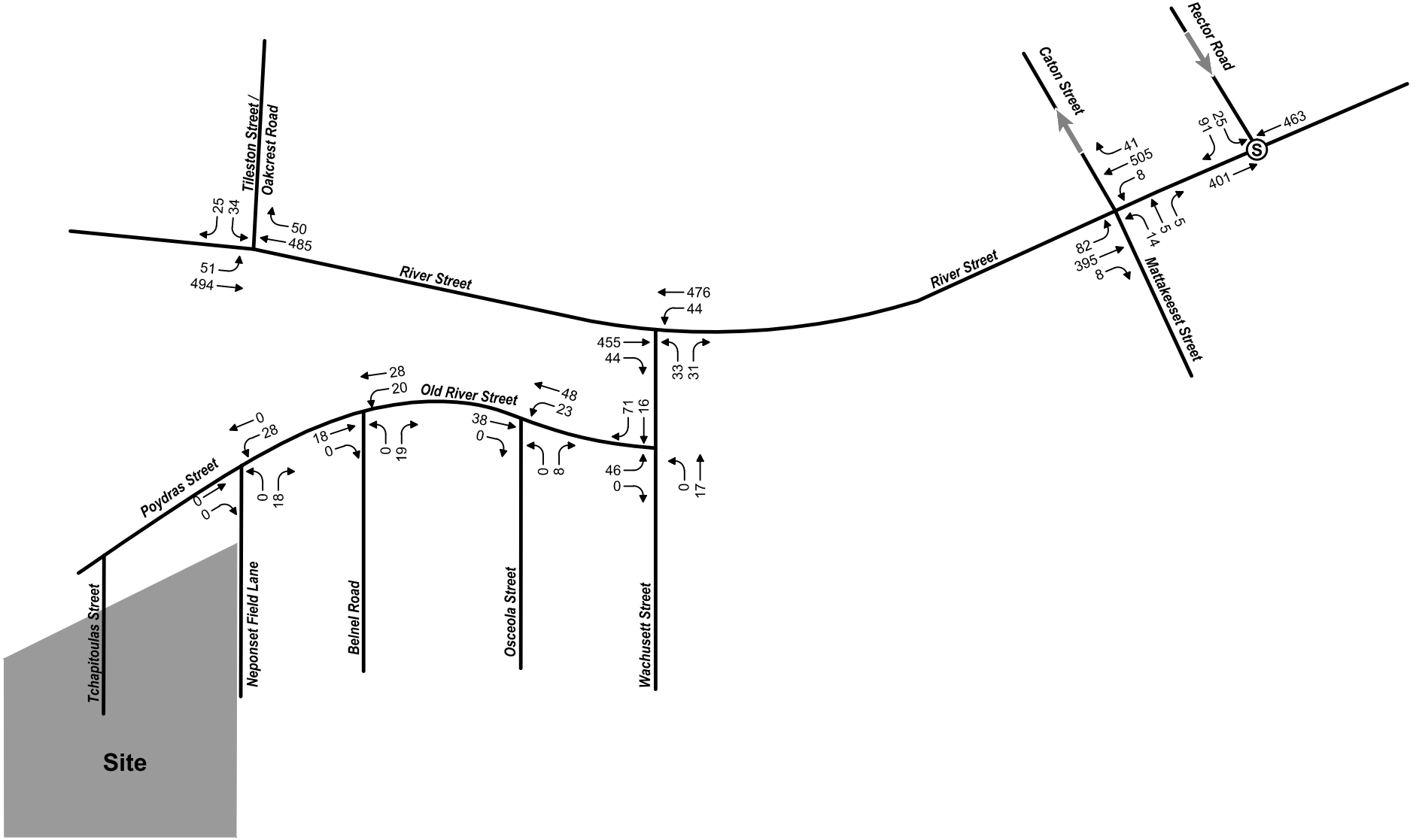

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Figure 4-11

Vanasse Hangen Brustlin, Inc.

2018 No-Build Condition
Evening Peak Hour Traffic Volumes
Match Community Day Public School
Hyde Park, Massachusetts

■

No-Build Traffic Network Volume Adjustment

A volume adjustment was applied to the future Build Condition traffic network based on the removal of townhouse units included in the Neponset Fields Residential Project (i.e., a portion of the land previously dedicated to this residential project will become part of the Match School in the Build Condition). The remaining Neponset Fields property will accommodate approximately 18 of the originally planned 48 units on the property (approximately 38 percent of what was originally approved). To be conservative, only a 50 percent reduction in trips was taken and applied to the Match Build Condition. A summary of the Neponset Fields Residential Project trip generation and the resulting trip adjustment is provided in **Table 4-3**.

Table 4-3
Vehicle Trip Generation Adjustment

	Morning Peak Hour			Evening Peak Hour		
	In	Out	Total	In	Out	Total
Total Neponset Fields Trips	3	14	17	13	6	19
Match Trip Adjustment	(-2)	(-7)	(-9)	(-7)	(-3)	(-10)

Source: Neponset Fields Residential Project PNF

■

Trip Generation

To determine future 2018 Build Condition Match School trip generation, existing vehicle trip generation was first quantified based on the existing travel characteristics of the Match students, faculty, and staff in conjunction with the understanding of similar school operations. Operations at both the existing Match School location and the nearby Boston Renaissance Public Charter School were studied to support this effort. Existing trends were then applied to the projected student, faculty, and staff populations with completion of the Proposed Project. For the purposes of this study, it is assumed that the school will be at full capacity by the 2018 Build Condition year.

The use of Institute of Transportation Engineer's (ITE) trip generation was investigated for the Proposed Project. However, the resulting trip estimates based on ITE rates were not consistent with the existing trends at the school and therefore not used for this analysis.

Future peak hour vehicle trips, broken down by parent pick-up/drop-off, school bus, and faculty/staff were calculated using the total volume of students, faculty, and staff and applying the mode share found at the existing Match schools within the City of Boston.

Based on the student population of 700 students at full capacity, future peak hour vehicle trips were estimated using the school's existing mode shares. Though faculty and staff typically arrive and depart off-peak, to be conservative, it was assumed that approximately 34 of the 60 full time equivalent employees would arrive during the morning peak hour and depart during the evening peak hour. Estimated Project-generated vehicle trips for the 2018 Build Condition are shown below in **Table 4-4**.

Table 4-4
Estimated Project Generated Vehicle Trips

	Morning Peak Hour			Evening Peak Hour		
	Student	Faculty	Total	Student	Faculty	Total
Entering						
School Bus	15	0	15	15	0	15
Vehicle Trip	70	34	104	70	5	75
Total Entering	85	34	119	85	5	90
Exiting						
School Bus	15	0	15	15	0	15
Vehicle Trip	70	5	75	70	34	104
Total Exiting	85	5	90	85	34	119

Source: VHB

The Proposed Project will generate 209 new vehicle trips during the morning and evening peak hour. The majority of the trips are parents that will be traveling to the school to drop-off and pick-up their children. During the evening peak hour, the school faculty and staff will meter the vehicles exiting the site to minimize impacts to the neighborhood traffic patterns.

■

Trip Distribution

Project trips for the 2018 Build Condition were distributed through the Study Area intersections. Trip assignments for the vehicles traveling to the site were determined using the 2012-2013 Match Community Day School's student population locations and 2012-2013 student school bus routes shown in **Figure 4-12** and **Figure 4-13**, respectively.

Due to the turning radius from River Street eastbound onto Wachusett Street/Old River Street, school buses will not be permitted to enter the neighborhood from the

west on River Street. The school buses will all enter the site from the east to allow for a safe turning movement from River Street onto Wachusett Street/Old River Street.

The Project trip distribution was divided into two groups, passenger vehicles and school buses. **Figure 4-14** and **Figure 4-15** depict their distributions. The project generated vehicle trips presented previously in **Table 4-4** have been assigned to the roadway network using the trip distribution and the resulting 2018 Project generated trips. Morning peak hour trips are presented in **Figure 4-16** and evening peak hour trips are presented in **Figure 4-17**.

■

2018 Build Traffic Volumes

The Project generated trips were added to the adjusted 2018 No-Build volumes to develop the 2018 Build Condition peak hour traffic volumes. These volumes are shown in **Figure 4-18** and **Figure 4-19**.

■

Student Pick-Up/Drop-Off and Bus Access

The Proposed site provides ample room for both pick-up/drop-off by parents and city school buses. The Proponent expects that approximately half the parents picking up during the peak hour could be queued on site at dismissal time. The parents will be provided space, as shown previously in **Figure 4-1**, along the curb in front of the River Building and the edge of the visitor parking to queue while waiting for students to be dismissed. Match is committed to metering the parents leaving the site by only dismissing a limited number of students, those whose parents are at the front of the queue, at a time.

The school buses will have a designated lane to the west of the Poydras Building. This lane will be accessed in a single clock-wise loop from Neponset Field Lane and exiting to Poydras Street. Assumptions, based on existing and past conditions at the Match Education Schools, were made in regards to the size of buses that will be traveling to the Proposed site. Based on the previous buses supporting the Match Education Schools, space for up to 15 buses has been designated for the school buses within the site and along the west side of Neponset Field Lane adjacent to the Poydras Building.

■

Parking

The Proposed Project will accommodate approximately 79 parking spaces throughout the campus. The parking to the west, 53 spaces, is to be designated for faculty/staff members throughout the school day. This surface parking lot is in close proximity to the field making it ideal parking for sports events that may occur

outside of school hours. Parking at the center of the site, north of the main entrance is primarily for pick-up/drop off and visitor parking. There are 14 angled parking spaces and 4 parallel parking spaces available in this location, along with 24 parallel spaces for during drop-off and pick-up only. The parking to the east of the site provides additional visitor parking and can be used for event parking. This includes seven parallel spaces located within the School Bus drop-off/pick-up area and two accessible spaces off Poydras Street.

■

Loading and Emergency Vehicle Access

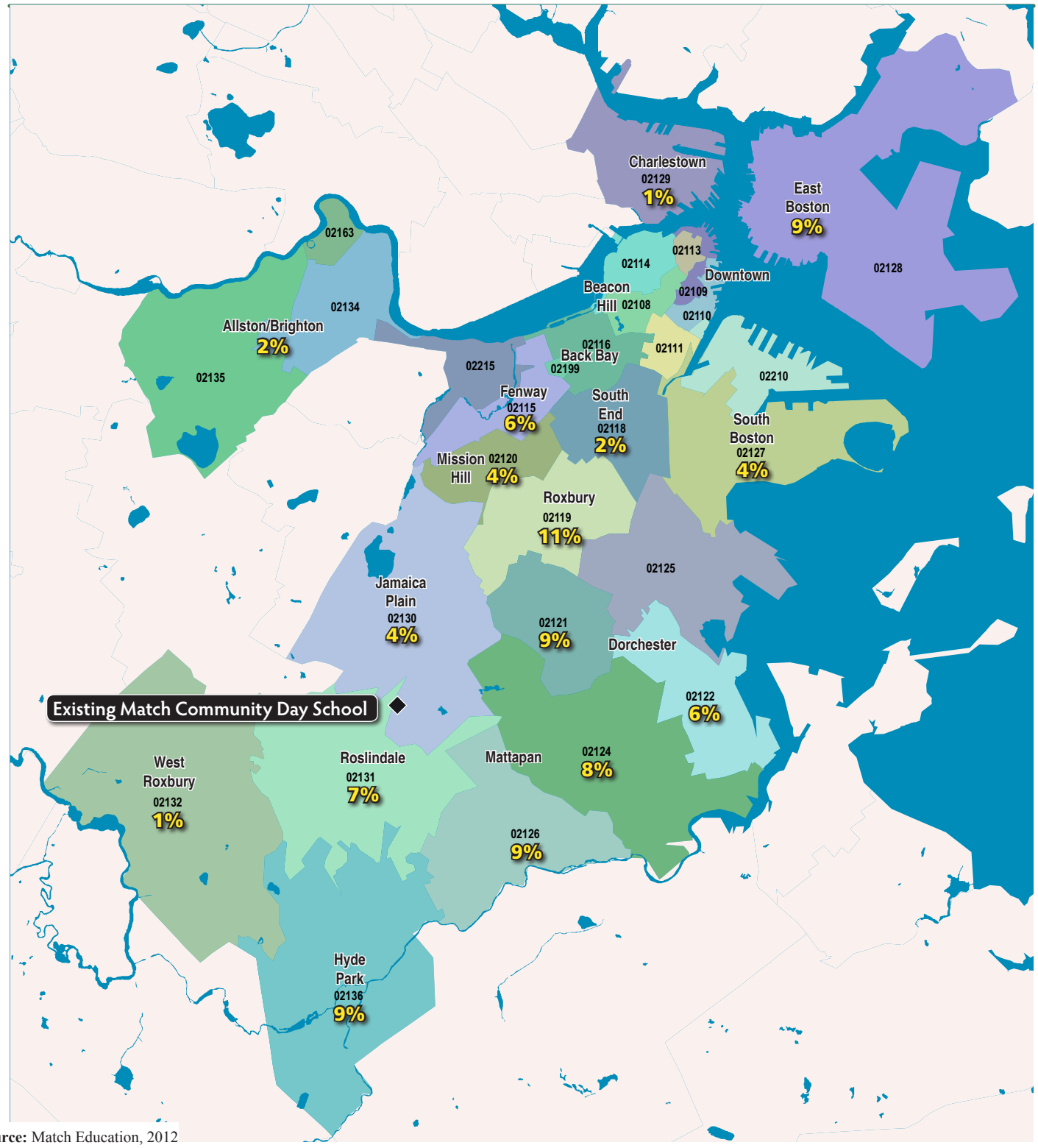
Loading and service functions for the Match School will be accommodated via an access road to the east of the River Building. Trucks and other service vehicles will be able to travel down the single lane to the end of the building where a turn-around area will be provided. These activities will typically occur off-peak to minimize any impacts to the neighborhood roadway networks. A single large dumpster will be provided within this loading area and be removed and replaced weekly.

Emergency vehicle access will be provided by reinforced lawns as shown on the Site Traffic Management and Improvement Plan, **Figure 4-1**.

■

Pedestrians

With the majority of the high school students utilizing the MBTA system to arrive at the school, the Proponent intends to create a solid pedestrian way between the River Street/Old River Street/Wachusett Street intersection and the proposed school. Although a portion of Poydras Street currently does not have a sidewalk, Match anticipates constructing this portion of sidewalk before the school is occupied. At the Proposed site, the Proponent intends to provide ample sidewalk space and crosswalks to ensure the safety of the students, faculty, staff, and visitors. The Proponent will provide accessible ramps and sidewalks throughout the Project site.



Source: Match Education, 2012

0 4000 8000

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Figure 4-12

2012-2013 Student Population

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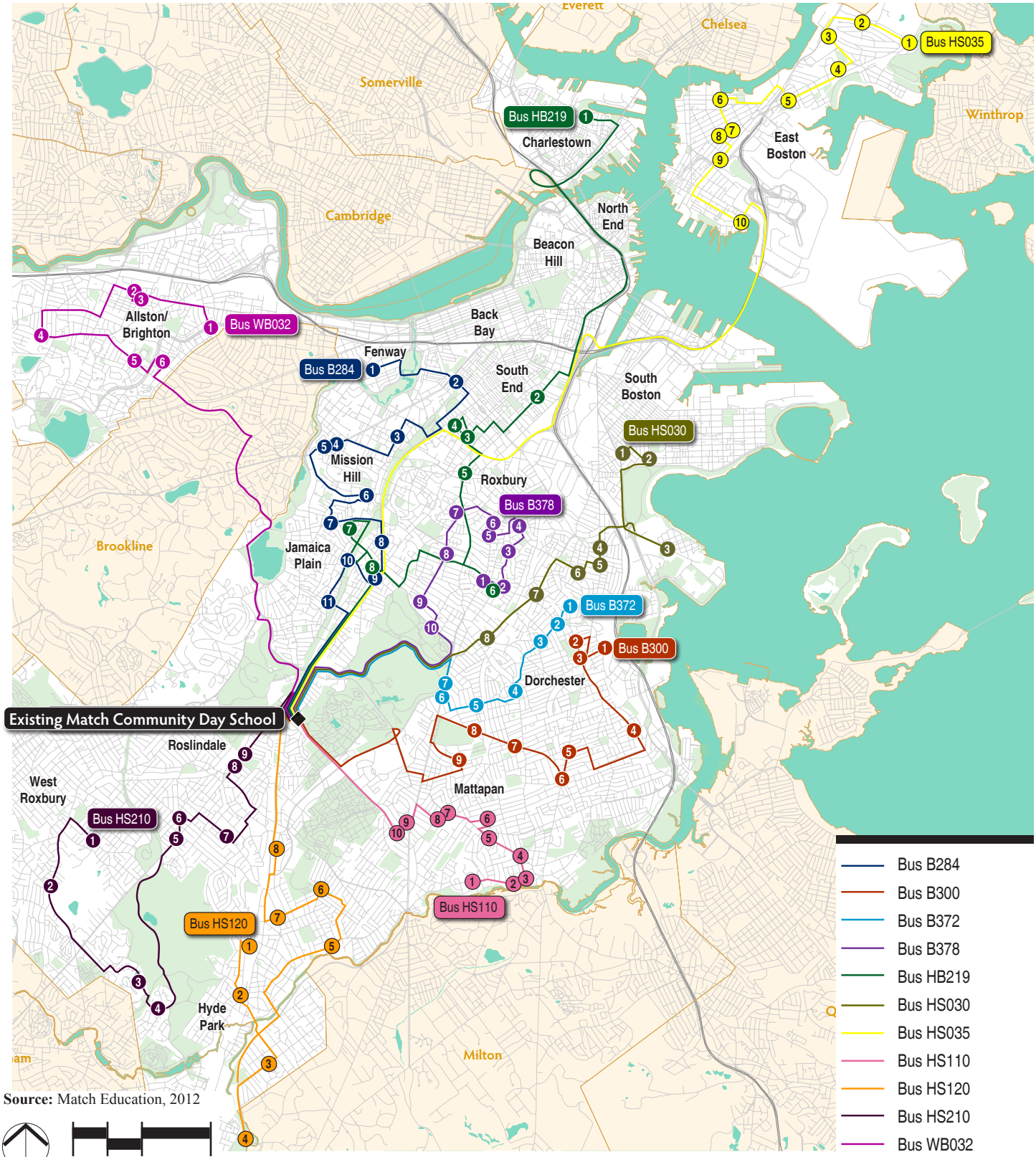

Source: Match Education, 2012

0 4000 8000

match COMMUNITY DAY Charter Public School

Figure 4-13

VHB Vanasse Hangen Brustlin, Inc.

2012-2013 Student School Bus Routes

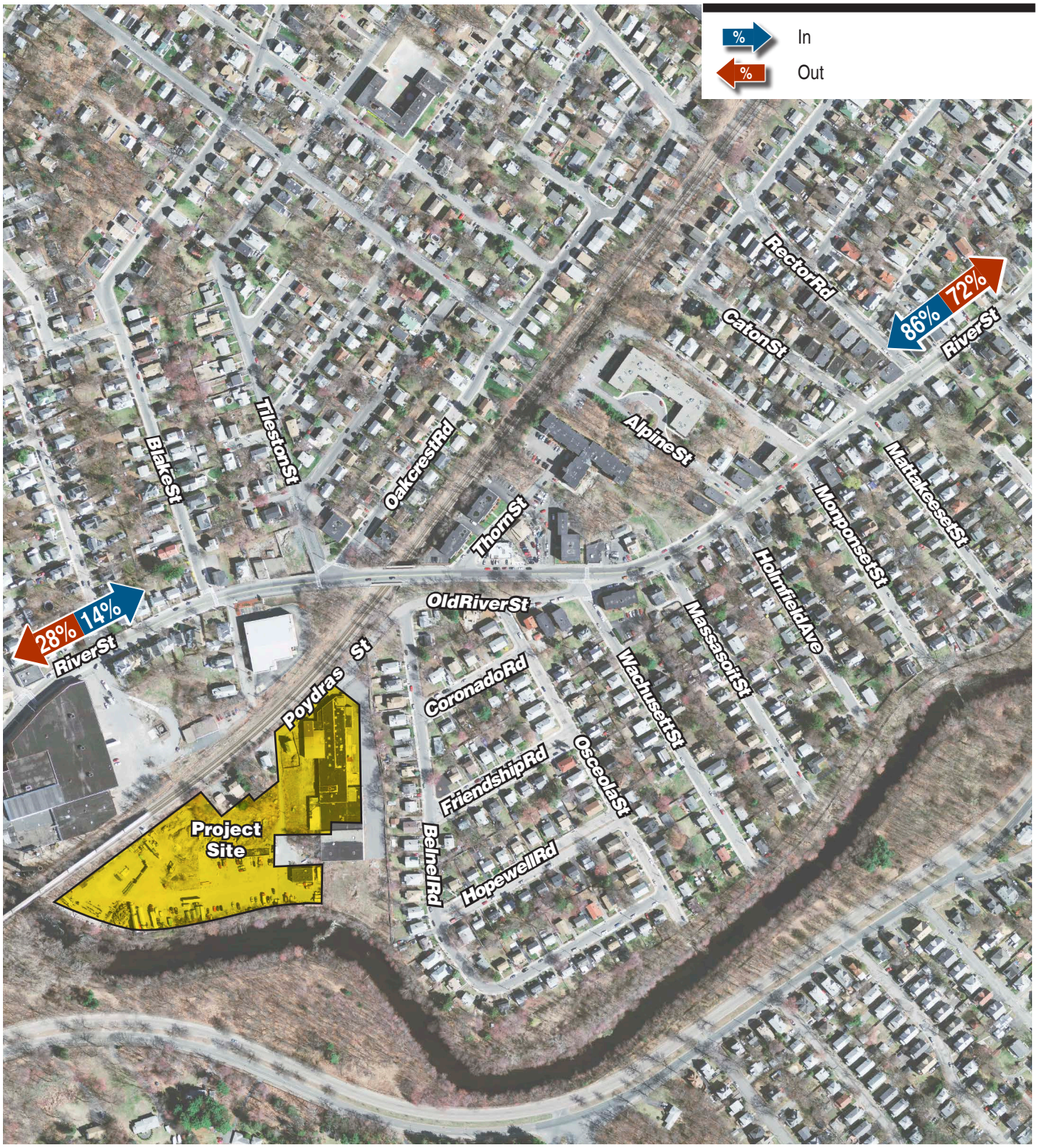

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Figure 4-14

Passenger Vehicle Trip Distribution

VHB Vanasse Hangen Brustlin, Inc.

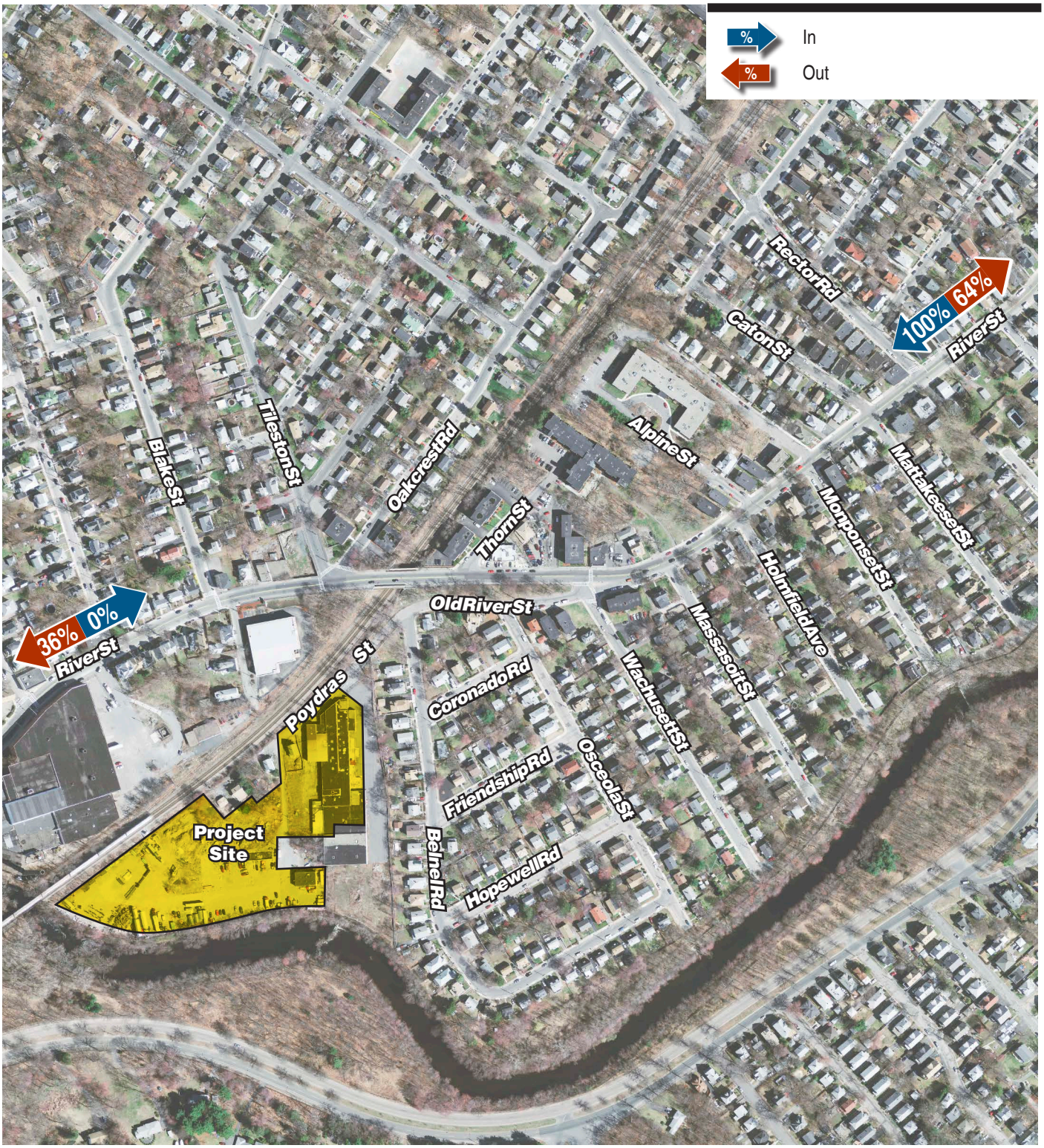

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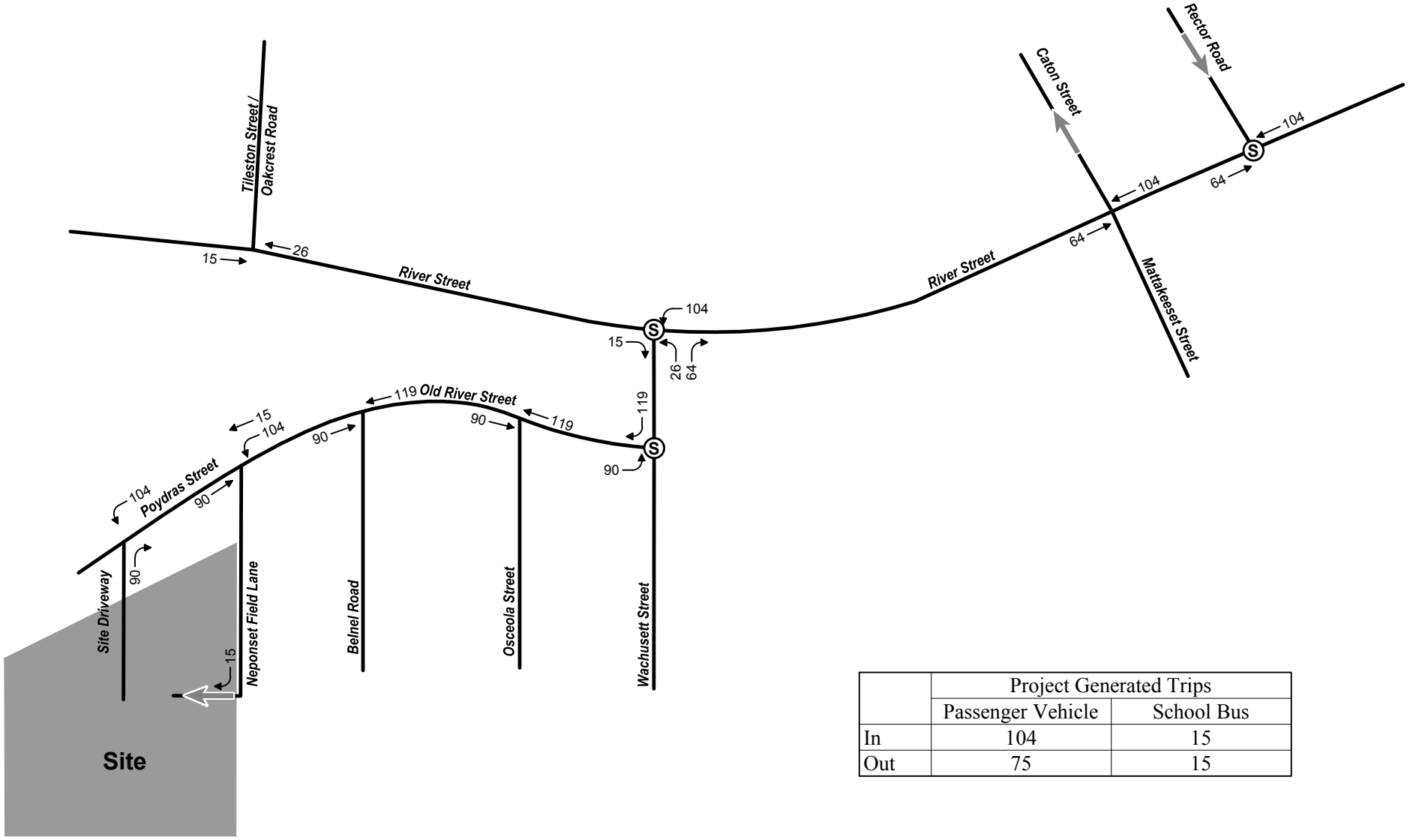
Figure 4-15

School Bus Trip Distribution

VHB Vanasse Hangen Brustlin, Inc.



	Project Generated Trips	
	Passenger Vehicle	School Bus
In	104	15
Out	75	15

Not to Scale

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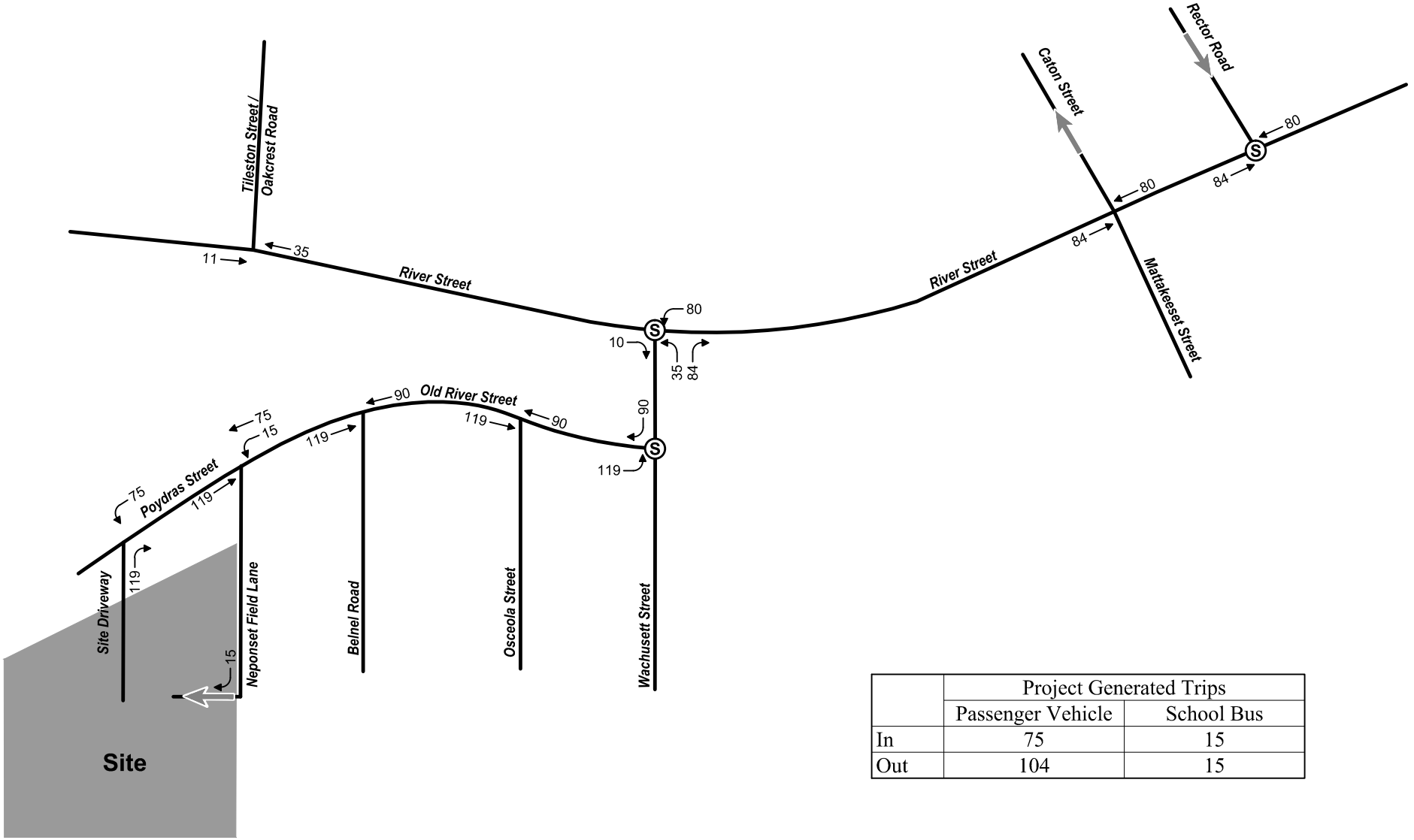
Figure 4-16

VHB Vanasse Hangen Brustlin, Inc.

Project Generated Trips
Morning Peak Hour
Match Community Day Public School
Hyde Park, Massachusetts



	Project Generated Trips	
	Passenger Vehicle	School Bus
In	75	15
Out	104	15

Not to Scale

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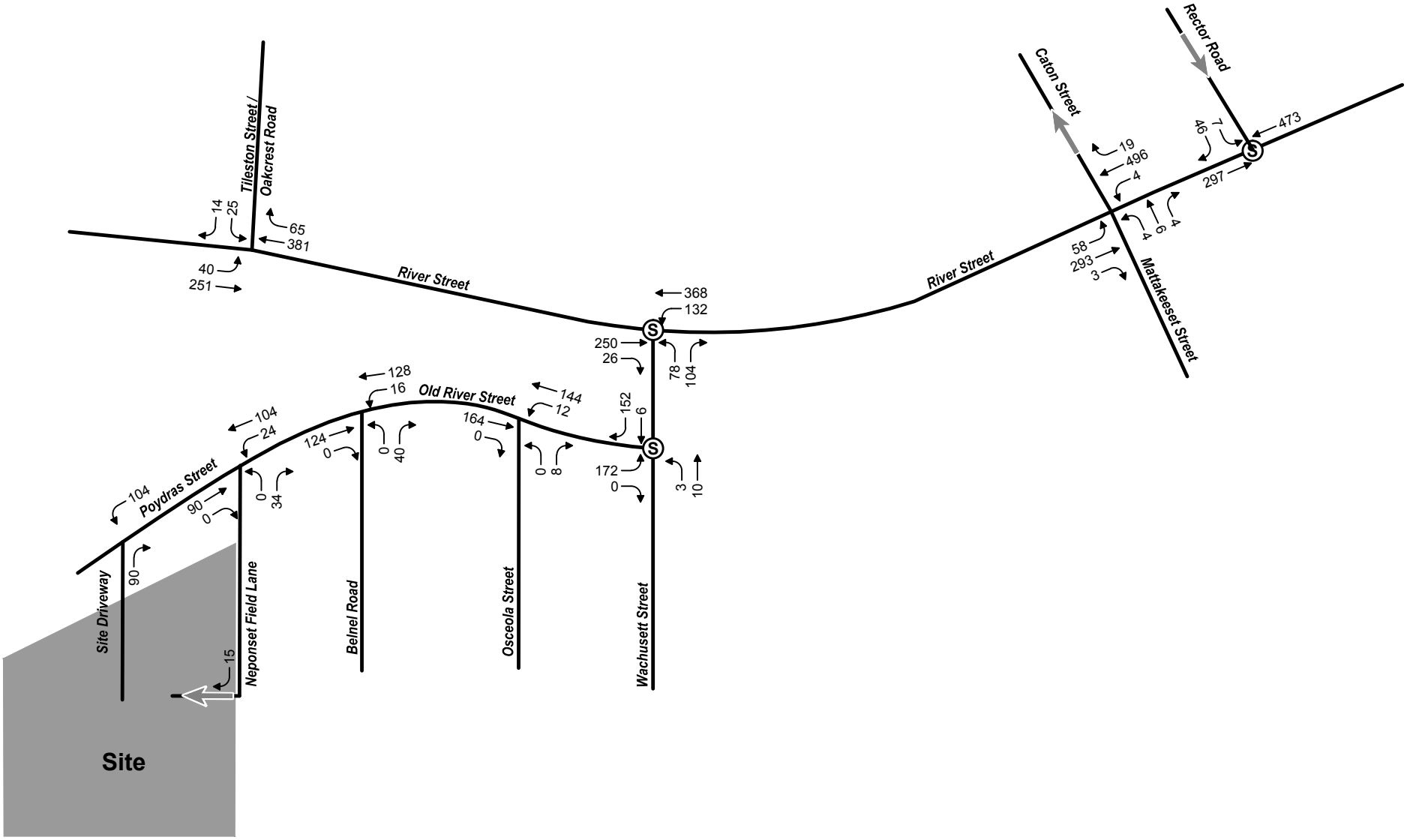
Figure 4-17

VHB Vanasse Hangen Brustlin, Inc.

Project Generated Trips
Evening Peak Hour
Match Community Day Public School
Hyde Park, Massachusetts



Not to Scale

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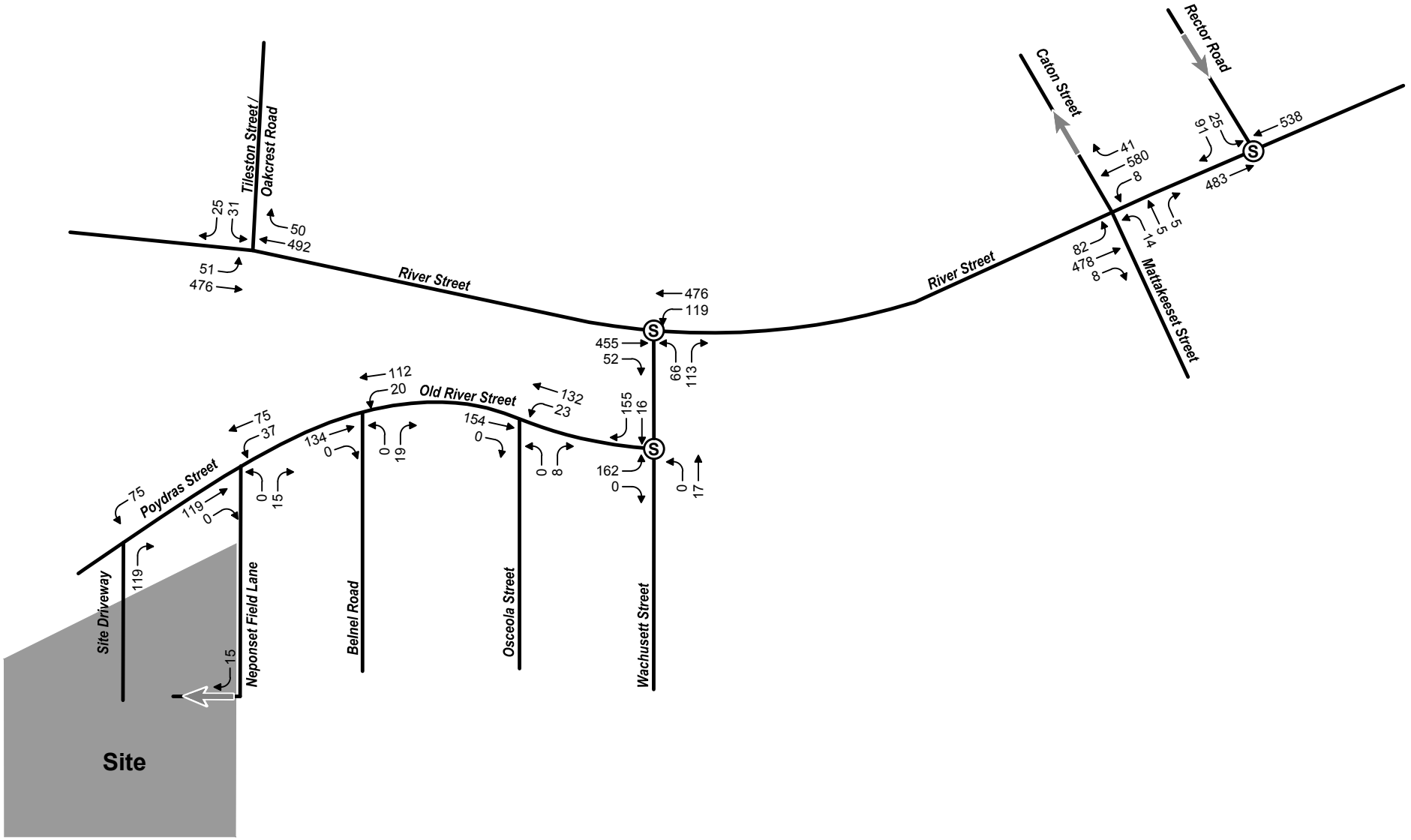
Figure 4-18

Vanasse Hangen Brustlin, Inc.

2018 Build Condition
Morning Peak Hour Traffic Volumes
Match Community Day Public School
Hyde Park, Massachusetts



Not to Scale

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Figure 4-19

Vanasse Hangen Brustlin, Inc.

2018 Build Condition
Evening Peak Hour Traffic Volumes
Match Community Day Public School
Hyde Park, Massachusetts

Traffic Operations Analysis

Capacity analyses were conducted for the 2013 Existing, 2018 No-Build, and 2018 Build Conditions to determine how well the roadway facilities serve the existing and future traffic demands. These roadway operating conditions are classified by quantified levels of service.

Level-of-Service Criteria

Level-of-service (LOS) is a qualitative measure of control delay at an intersection providing an index to the operational qualities of a roadway or intersection. Level-of-service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level-of-service designation is reported differently for signalized and unsignalized locations.

For signalized intersections, the analysis considers the operation of each lane or lane group entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, however, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. The LOS is only determined for left turns from the main street and all movements from the minor street. The LOS designation is for the most critical movement, which is most often the left turn out of the side street.

The evaluation criteria used for the LOS analysis are based on the *2000 Highway Capacity Manual* (HCM)[1]. **Table 4-5** below presents the level of service delay threshold criteria as defined in the HCM.

Table 4-5
Level of Service Criteria

Level-of-Service	Unsignalized Intersection Control Delay (sec/veh)	Signalized Intersection Control Delay (sec/veh)
LOS A	0 - 10	≤ 10
LOS B	>10 - 15	> 10-20
LOS C	>15 - 25	> 20-35
LOS D	>25 - 35	> 35-55
LOS E	>35 - 50	> 55-80
LOS F	>50	> 80

Source: 2000 HCM

Consistent with BTD's guidelines, Synchro 6 software was used to model LOS operations at the study area intersections. Overall intersection LOS and delay are

[1] 2000 Highway Capacity Manual, Transportation Research Board, Washington D.C. (2000).

only provided for signalized intersections by Synchro. Intersection operations summary reports are presented in the Appendix of this Expanded PNF.

■

Signalized Intersection Capacity Analysis

The study area contains one signalized intersection in the 2013 Existing and 2018 No-Build Conditions and two in the 2018 Build Condition. Capacity analyses were conducted for these signalized intersections. A summary of the signalized capacity analysis is presented in **Table 4-6**.

Table 4-6
Signalized Intersection Capacity Analysis Results

		2013 Existing Conditions			2018 No-Build Conditions			2018 Build Conditions		
Location	Period	V/C[1]	Delay[2]	LOS[3]	V/C	Delay	LOS	V/C	Delay	LOS
River Street at	Weekday Morning	0.36	7.1	A	0.39	7.0	A	0.47	6.7	A
Rector Road	Weekday Evening	0.42	14.9	B	0.48	14.7	B	0.53	13.6	B
River Street at Wachusett	Weekday Morning	*	*	*	*	*	*	0.59	8.0	A
Street/Old River Street	Weekday Evening	*	*	*	*	*	*	0.70	9.7	A

Source: VHB

1. V/C = volume to capacity ratio
2. Delay = Average delay in seconds per vehicle
3. LOS = Level of Service

* Unsignalized in Existing and No-Build Conditions

Under Existing Conditions, the intersection of River Street at Rector Road is the only signalized intersection within the study area. During the weekday morning peak hour the intersection operates at LOS A and LOS B during the evening peak hour.

Under 2018 No-Build Condition, the intersection of River Street at Rector Road is expected to operate as it did in the Existing Conditions.

Under 2018 Build Conditions (i.e., with the Proposed Project in place), the intersection at River Street and Rector Road will continue to operate at the same overall level of service as in the 2018 No-Build Conditions. The new proposed signalized intersection at River Street and Wachusett Street/Old River Street will operate at LOS A during the morning and evening peak hours. This is an improvement from the unsignalized operations in the Existing and No-Build Conditions. In those conditions, the critical approach operated at LOS B or C.

■

Unsignalized Intersection Capacity Analysis

Capacity analyses were also conducted for the seven unsignalized intersection identified in the study area. Capacity analyses were conducted for 2013 Existing, 2018 No-Build and Build conditions. A summary of the unsignalized capacity analysis is presented in **Table 4-7**.

Table 4-7
Unsignalized Intersection Capacity Analysis Summary

		2013 Existing Conditions			2018 No-Build Conditions			2018 Build Conditions		
Location	Period	V/C[1]	Delay[2]	LOS[3]	V/C	Delay	LOS	V/C	Delay	LOS
River Street at Caton St/Mattakeeset St	Weekday Morning	0.05	16.7	C	0.05	18.1	C	0.08	23.4	C
	Weekday Evening	0.18	29.7	D	0.24	39.9	E	0.28	48.2	E
River Street at Wachusett Street	Weekday Morning	0.21	14.5	B	0.26	15.6	C	*	*	*
	Weekday Evening	0.26	19.3	C	0.35	24.4	C	*	*	*
River Street at Tileston Street /Oakcrest Road	Weekday Morning	0.15	14.5	B	0.17	15.5	C	0.18	16.2	C
	Weekday Evening	0.21	19.8	C	0.26	23.6	C	0.33	30.8	D
Wachusett Street at Old River Street	Weekday Morning	0.09	9.3	A	0.11	9.4	A	*	*	*
	Weekday Evening	0.06	9.4	A	0.07	9.5	A	*	*	*
Old River Street at Osceola Street	Weekday Morning	0.01	8.7	A	0.01	8.8	A	0.01	9.3	A
	Weekday Evening	0.01	8.6	A	0.01	8.6	A	0.01	9.5	A
Old River Street at Belnel Road	Weekday Morning	0.04	8.6	A	0.05	8.7	A	0.05	9.3	A
	Weekday Evening	0.02	8.5	A	0.03	8.6	A	0.03	9.4	A
Poydras Street at Neponset Fields Lane	Weekday Morning	0.03	8.6	A	0.05	8.7	A	0.13	9.1	A
	Weekday Evening	0.02	8.4	A	0.02	8.5	A	0.16	9.1	A

Source: VHB
1. V/C = volume to capacity ratio of critical approach
2. Delay = Average delay in seconds per vehicle of critical approach
3. LOS = Level of Service of critical approach
* Signalized in Build Conditions

Under Existing Conditions, all of the unsignalized study area intersections, currently operate at LOS C or better except for River Street at Caton Street/Mattakeeset Street which operates at LOS D during weekday evening peak. Old River Street/Poydras Street operate as free flowing with generally no delay at these unsignalized intersections. The side streets, which contain low traffic volumes at most locations, are the only movements that experience delay at the intersections.

Under 2018 No-Build Conditions, the intersections along Old River Street/Poydras Street will continue to operate under the same LOS as in the existing conditions. The intersections along River Street are expected to operate at LOS C except for River Street at Caton Street/Mattakeeset Street which operates at LOS E during the weekday evening peak.

Under 2018 Build Conditions (i.e., with the Proposed Project in place) the traffic operation LOS will remain the same at all study area unsignalized intersections with the exception of River Street at Tileston Street/Oakcrest Road. During the evening peak hour, this intersection will decrease from LOS C to LOS D. The intersections of River Street at Wachusett Street and Old River Street at Wachusett Street are combined in the Build Conditions once signalized.

Transportation Improvements

This section delineates the transportation improvements plan developed by the Proponent in connection with the Proposed Project. The planned actions are in accordance with conversations with the BRA, BTD, and the surrounding community over the past nine months. These actions have been reflected in the 2018 Build Condition analysis, as they will be put in place before the school is occupied.

In addition to physical improvements, the Proponent proposes to minimize reliance on travel by automobile through implementation of a Traffic Demand Management plan. Generally, TDM strategies are most effective with commuter travel where most trips are made by employees (e.g. in an office development). However, there are a number of measures that will be implemented in an effort to reduce faculty and staff auto trips.

Area Improvements

Match is committed to designing and implementing a traffic signal at the intersection of River Street at Wachusett Street/Old River Street. This amenity will help appropriately manage school traffic during peak school arrival and dismissal times. The signalization of this intersection will provide improved access to and from the Belnel neighborhood and the Project site, allowing for safer opportunities to enter the intersection from the neighborhood. This improvement will also support safer pedestrian crossings at the intersection utilizing pedestrian signals and crosswalks and slowing traffic along River Street. Once the Proposed Project has been approved by the BRA, the Proponent will continue conversations with BTD to finalize the design and implementation of the signal at the intersection. Along with this signal, Match will also work with BTD and the community to assess the assess viability of advanced signal signage on the River Street Bridge to help warn drivers of an upcoming red signal.

Currently, the sidewalk on the south side of Poydras Street has a gap between Belnel Road and Neponset Field Lane. The Proponent is committed to improving this section of sidewalk in order to provide a contiguous pedestrian way between River Street and the Project site.

Match is also committed to resurfacing dated pavement section along Poydras Street and, along with BTD, adding no parking signage along Poydras Street and Old River Street to further enforce that all school activity take place on-campus.

These improvements are shown previously in **Figure 4-2**.

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Transportation Demand Management

The goal of the Transportation Demand Management plan is to reduce the Project's overall traffic impact through the implementation of TDM measures that are geared toward affecting the demand side of the transportation equation, rather than the supply side. By their very nature, TDM programs attempt to change people's behavior, and, to be successful, they must rely on incentives or disincentives to make these shifts in behavior attractive to the commuter[2].

TDM programs are designed to maximize the people-moving capability of the existing transportation infrastructure by increasing the number of persons in a vehicle, providing alternate modes of travel, or influencing the time of, or need to, travel.

TDM measures are most often directed at commuter travel, characterized by the day-to-day regularity of this type of trip. Conditions at the workplace, in terms of employer practices such as on-site services, bicycle storage, shower facilities and shuttle services, impact faculty and staff commuter choices, and makes this market the most suitable for identifying alternatives.

The term TDM encompasses both alternatives to driving alone and the techniques or supporting strategies that encourage the use of these alternatives. TDM alternatives to driving alone include carpools and vanpools, public and private transit, and non-motorized travel including bicycling and walking.

TDM strategies are the supporting measures that encourage the use of alternatives to driving alone. TDM strategies include financial incentives, time incentives, provision of new or enhanced commuter services, dissemination of information, and marketing alternative services. TDM strategies include all the incentives and disincentives that increase the likelihood for people to change their existing travel behavior.

▼

2 *Implementing Effective Traffic Demand Management Measures: Inventory of Measures and Synthesis of Experience*, prepared by Comsis Corporation and the Institute of Transportation Engineers, for the U.S. Department of Transportation, DOT-T-94-02, September 1993, p. I-1.

To implement a TDM program for the Proposed Project, the Proponent will consider a number of measures that will contribute toward the reduction of vehicular traffic to and from the Project site.

The following measures could comprise the proposed TDM package.

Ridesharing

The Proponent will promote ridesharing for its faculty and staff by carpooling. The Proponent will provide information regarding carpooling and its benefits to faculty and staff. Match will consider providing ridesharing vehicles with preferential parking spaces in the parking lots as a rideshare incentive.

Transportation Coordinator

A transportation coordinator will be identified to ensure that the complete rideshare program, including ride matching, promotion, incentives and a guaranteed ride home, is consistently promoted and provided.

Guaranteed Ride Home

In the event of an emergency or a request to stay late at work, the guaranteed ride home would allow faculty and staff to receive transportation service home, usually in the form of a taxi. This program helps to alleviate commuter's worries about being stuck on-campus when using alternative modes in case of various family emergencies.

Transit Incentives

To encourage the use of transit by faculty and staff to commute to work, Match will provide local bus schedule and route information in the faculty and staff areas. In addition, the school will offer monthly pre-tax MBTA pass sales for staff and faculty to promote the use of public transportation.

Transit Transportation

Match is considering operating a shuttle bus to and from major transit hubs, such as Mattapan Station or Ashmont Station, to further encourage use of transit by faculty, staff, and students.

Bicycle and Pedestrian Measures

Bicycling to the site will likely be attractive to some faculty and staff due to the proximity of many residential communities. To encourage and facilitate use of

bicycles by faculty and staff, secure bicycle storage racks will be provided at the new school.

Again, due to the close proximity of residential areas to the site, walking is, and will continue to be, attractive to some faculty and staff. Specifically, Match will provide construct the missing link of sidewalk along the south side of Poydras Street between Belnel Road and Neponset Field Lane. The Proponent is committed to improving this section of sidewalk in order to provide a solid pedestrian way between River Street and the Proposed site. Safe on-site pedestrian circulation will be promoted through clearly delineated crosswalks/walkways on site. All constructed pedestrian facilities, both on- and off-site, will be ADA compliant.

Construction Management

Following the Article 80 review process, a detailed Construction Management Plan (CMP) will be developed and submitted to the BTD for its approval in connection with the Proposed Project. The CMP will provide a detailed evaluation of potential short-term construction related transportation impacts during the course of the proposed Project's construction. The CMP will include truck routing, construction staging on-campus, and pedestrian circulation around the campus.

Construction vehicles will be necessary to move construction materials to and from the Proposed Project site. The Proponent recognizes that construction traffic is a concern to area residents. No roadway closures are anticipated with the construction project. The need for street occupancy (i.e. temporary removal of parking or single lane closures) along roadways adjacent to the Proposed Project site is possible during certain periods of construction.

Contractors will be required to devise access plans for their personnel that de-emphasizes auto use (such as seeking off-site parking, provide transit subsidies, etc.). All parking for construction workers will be provided on site. The following are some of the elements that are anticipated to be included in a forthcoming CMP to support the Project:

- The vehicular access to the Project site during the construction period will be from Neponset Field Lane.
- The construction site will be maintained on private property and will likely not require long-term roadway and/or sidewalk occupancies (other than for utilities connections, the reconstruction of sidewalks, etc.).
- Construction worker parking will be provided on site, thereby eliminating the need for construction worker parking elsewhere in the area.
- Staging areas for construction are anticipated to be located directly on the Project site.

5

Environmental Protection

This chapter presents information on the environmental conditions in the vicinity of the Proposed Match Community Day Charter Public School Project and the environmental impacts in relation to wind, shadow, daylight, solar glare, air quality, noise, solid waste, hazardous materials, geotechnical, groundwater, construction impacts, rodent control, sustainable design, water quality and conservation, wetlands, flood hazard, and historic resources that are anticipated as a result of the Proposed Project.

Overall, as described below, the Proposed Project will not have significant environmental impacts, and in several instances, will enhance existing conditions both on the Project site as well as the adjacent site environs.

Wind

Given the limited height (not to exceed 35 feet at the highest point) of the proposed development, and the lack of close proximity to existing structures outside of the development, the Project is not expected to cause significant wind impacts on the neighborhood or open space areas and therefore does not warrant a wind study.

Shadow

The proposed buildings of one and two stories will not exceed the height of the existing four-story building complex or two and a half story single-family residence that abut the site. A shadow analysis was not completed given the distance from the proposed buildings to the surrounding buildings. It is expected that the proposed development would not result in an increase in shadow to the surrounding area.

Daylight

The following section describes the Project's anticipated effect on daylight obstruction at the site. The analysis was prepared using the BRA's Daylight Analysis Program and has been completed in accordance with the requirements of Article 80 of the City of Boston Zoning Code. The results of the analysis are presented in **Figure 5-1.**

■

Regulatory Context

Article 80, Section B(2)(c), Large Project Review – Environmental Component anticipates the potential need for a proponent to describe the percentages of sky plain obstructed in the no-build and build conditions. While this requirement is typically formalized in the BRA's Scoping Determination, this PNF anticipates the potential for this analysis to be included in the BRA scope and provides the results in this section.

■

Methodology

The Proposed Project was analyzed utilizing the Boston Redevelopment Authority Daylighting Analysis (BRADA) computer program.[1] Using BRADA, a silhouette view of the building is taken at ground level from the middle of the adjacent City streets or pedestrian ways centered on each of the proposed buildings that abut a public way. The façade of the building facing the viewpoint, including heights, setbacks, corners, and other features, is plotted onto a base map using lateral and elevation angles. The two-dimensional base map generated by BRADA represents a figure of the building in the "sky dome" from each respective viewpoint that is studied.

The BRADA program calculates the percentage of daylight that will be obstructed on a scale of 0 percent to 100 percent. BRADA calculates this obstruction balue based on the width of view, the distance between the viewpoint and the building, and the massing and setbacks incorporated into the design of the building. The lower the number, the lower the percentage of obstruction of daylight from any given viewpoint.

Potential daylight impacts were analyzed from the two public roadways adjacent to the Poydras Street building, Neponset Field Lane and Poydras Street.

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[1] Method developed by Harvey Bryan and Susan Stuebing, computer pgoram developed by Ronald Fergie, Massachusetts Institute of Technology, Cambridge, MA, September 1985.

■

Analysis Summary

The results of the daylight analysis are presented in **Figure 5-1**. Development of the Proposed Project will result in just above twenty-five percent (26.0%) obstruction of daylight on Neponset Field Lane. From Poydras Street, the Proposed Project is estimated to increase the daylight obstruction to 6.8%. As described in Chapter 3, *Urban Design*, the Proposed Project is to be constructed on a site where there is currently no building, therefore any change in obstruction is in reference to a existing 0% obstruction.

Solar Glare

Solar glare impacts on neighbors and adjacent roadways are not anticipated due to the proposed building designs not including large areas of reflective glass or other materials that would contribute to solar glare. A more in depth discussion of the façade is presented previously in Chapter 3, *Urban Design.*

Water Quality and Conservation

The proposed stormwater management system will provide 80% Total Suspended Solids (TSS) removal for stormwater runoff from all roof areas, parking lots, and other impervious areas to comply with the Massachusetts Stormwater Management Standards. The water quality volume will be equal to 0.5-inch over the entire impervious area of the post-development site. In addition, BMPs will be implemented into the long term pollution prevention plan to provide for 80% TSS removal. The Stormwater Management section of Chapter 6, Infrastructure Systems, describes in detail the stormwater management system to be put in place in connection with the proposed project.

The project will require a United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from construction activities because the construction area of the project exceeds one (1) acre in land disturbance. Regulated projects are required to develop and implement stormwater pollution prevention plans in order to obtain permit coverage.

A plan to control construction related impacts, including erosion , sedimentation, and other pollutant sources during construction and land disturbance activities will be developed and implemented. A pollution prevention plan will be developed and will be incorporated as part of the design of this project and will be implemented during site construction.

In order to reduce pollution from the site, the parking lot will include a closed drain system as well as water quality structures, and an infiltration system. The site will also integrate bioretention basins into its drainage design to further reduce contaminant runoff from the impervious areas on the site. The proposed stormwater management system will include a groundwater recharge system and bioretention basins, which will be designed to increase the annual groundwater recharge from pre- to post-development conditions. The proposed infiltration system will be sized to provide the required recharge volume to the ground.

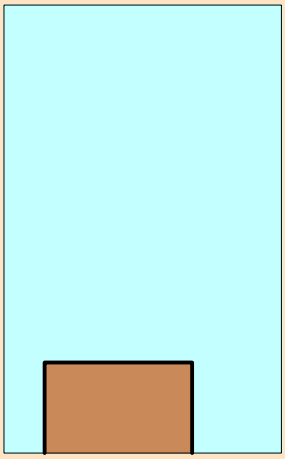
Wetlands and Flood Hazard

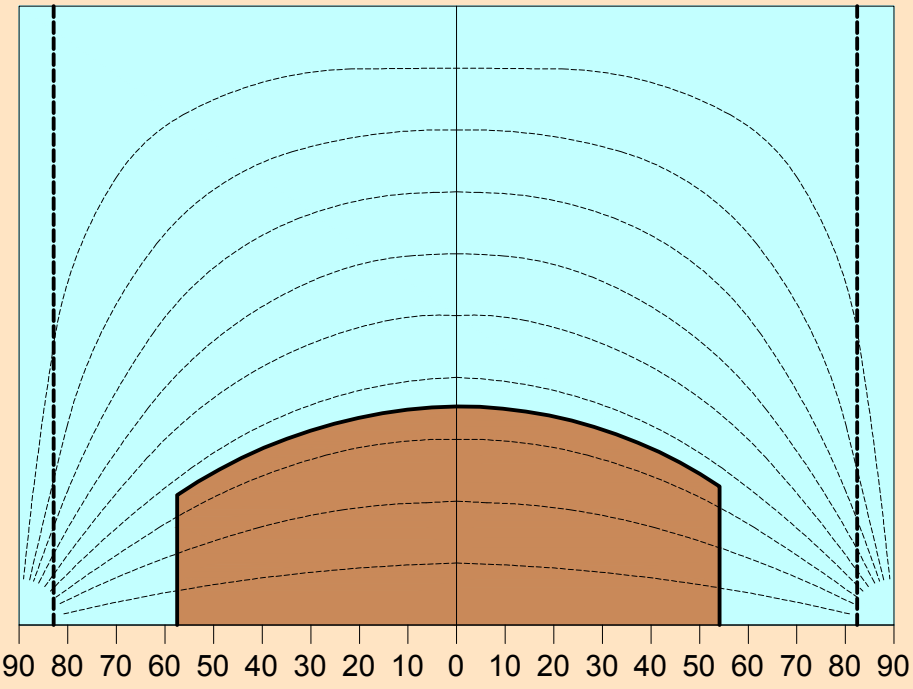
The existing site slopes south towards the Neponset River on the south-western portion of the site. The Neponset River is a wetland resource area that is regulated under the Commonwealth of Massachusetts' Wetland Protection Act. Resource areas as defined by the Wetlands Protection Act that are associated with the River are Bank, Land Under Waterbodies and Waterways, Land Subject to Flooding, and Riverftont Area. Within the City of Boston, Riverfront Area is limited to 25 feet measured from the mean annual high water line of the defined resource. Note that no portion of the Proposed Project lies below the 100-year flood elevation (Elevation 33') as shown on the Flood Insurance Map for the City of Boston, Massachusetts, *Community Panel No. 25025C0088G,* Effective Date: September 25, 2009. See **Figure 5-2**.

After the design of the Project is advanced, the Proponent will file a Notice of Intent (NOI) with the Boston Conservation Commission on behalf of the Project. The filing will demonstrate compliance with the interests of the Wetlands Protection Act for work that is proposed that may alter a regulated resource or fall within 100 feet of the top of Bank and/or within the 25-foot Riverfront Area, including, for example, landscaping, and other passive improvements that may be implanted along the river's edge. Erosion and sedimentation control measures will be implementd during site demolition, earthwork, and construction phases of the Project. The Proponent will conduct all site remediation, demolition, and construction activies in full compliance with a future Order of Conditions that is granted by the Conservation Commission after the forthcoming submittal of an NOI on behalf of the Project.

Center of Neponset Field Lane

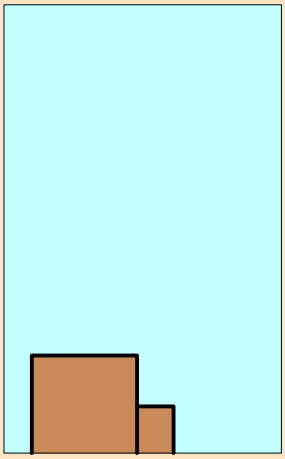
Obstruction of Skyplane = 26.0%

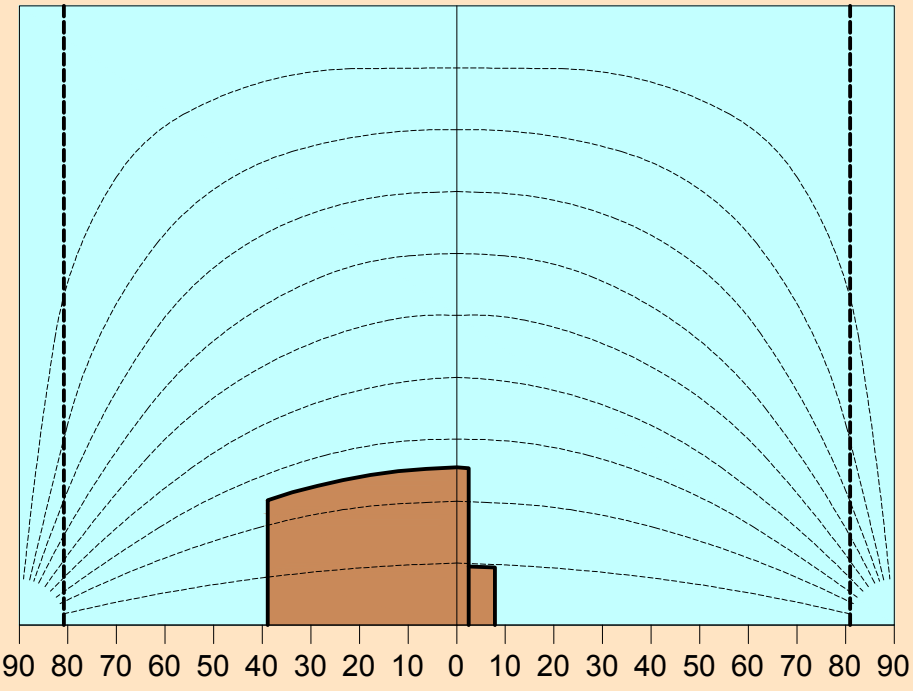




Center of Poydras Street

Obstruction of Skyplane = 6.8%



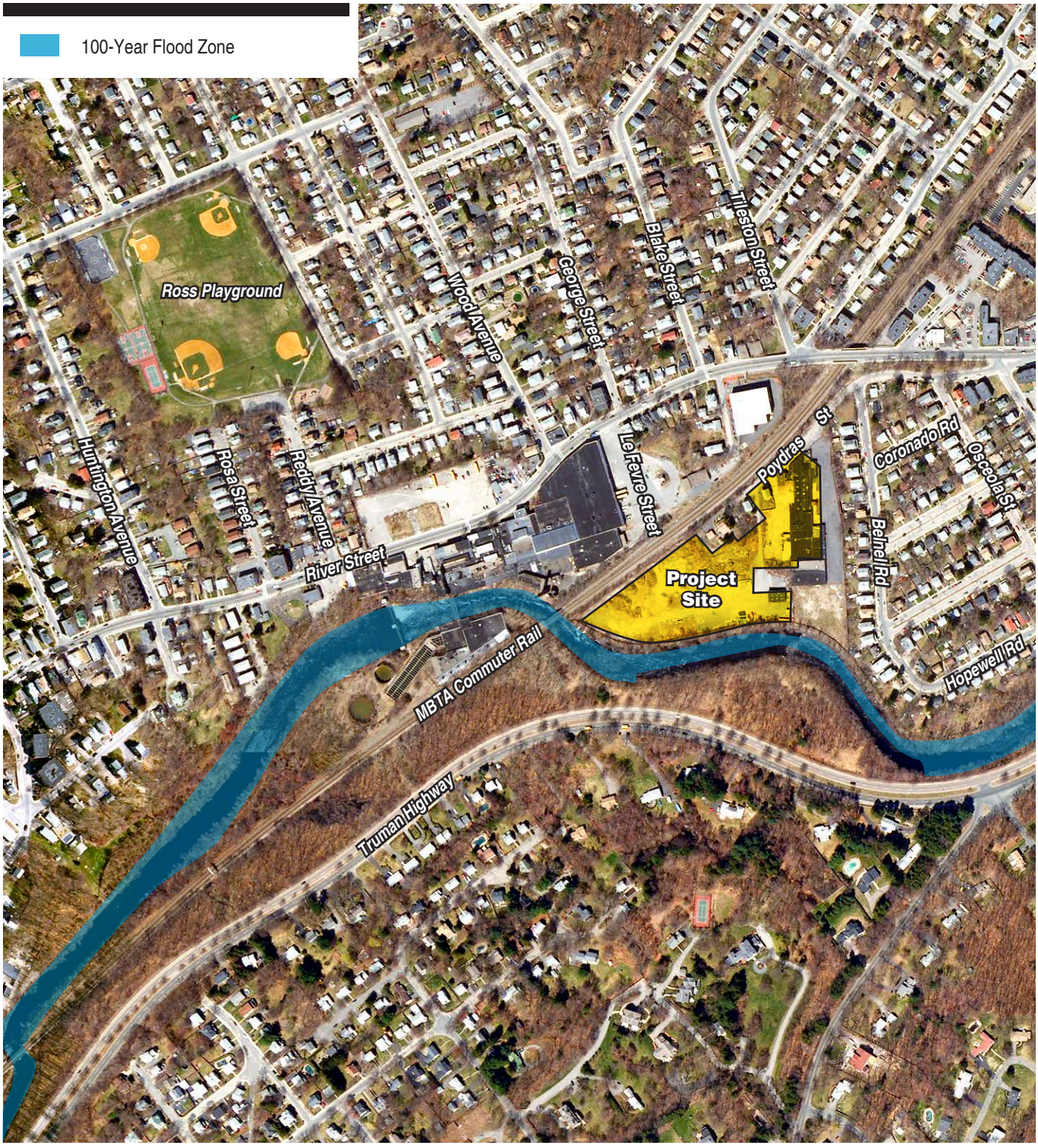


match COMMUNITY DAY Charter Public School

Figure 5-1

VHB Vanasse Hangen Brustlin, Inc.

Daylight Analysis
Proposed Condition



0 250 500

match COMMUNITY DAY Charter Public School

Figure 5-2

FEMA Map

VHB Vanasse Hangen Brustlin, Inc.

Geotechnical and Groundwater Analysis

Site Conditions

The site consists of two non-contiguous parcels covering a total land area of approximately 5.2 acres. The two parcels are separated by Tchapitoulas Street. The portion of the site that is located west of Tchapitoulas Street is bounded to the south and west by the Neponset River, and to the north by a MBTA Commuter Line. The portion of the site that is located east of Tchapitoulas Street is bounded to the northeast by single family residences and to the south and southeast by Neponset Fields, and a residential apartment complex.

The portion of the property fronting the west side of Tchapitoulas Street is occupied by a vacant single-story slab-on-grade concrete-block building, paved area, an area of broken pavement, areas of low lying vegetation, and a wooded area located in the northeast corner. Two storage units are located in the southwest corner. Some construction material (PVC piping), landscaping material (piles of bark mulch) and demolition debris (bricks) are located throughout the parcel. The portion of the property fronting the east side of Tchapitoulas Street is an open grassed area

The proposed scope of development will include approximately 70,000 square feet of new space in three buildings: the Poydras Building, the River Building, and the Gymnasium Building. The school will serve 700 students from kindergarten through 12th grade.

Soil and Bedrock Conditions

Based on a review of prior subsurface information and the results of a recent subsurface exploration program, the following subsurface conditions are anticipated:

Area west of Tchapitoulas Street: The existing ground surface is underlain by a 2- to 7-foot thick layer of miscellaneous fill material likely associated with historic site filling. The fill material likely contains traces of ash and cinders, wood, glass, asphalt, and other debris. The fill is underlain by a layer of buried topsoil in the northern portion of this area, and by organic soil deposits consisting of organic silt and peat in the areas closer to the Neponset River in the southern portion of the site. The thicknesses of the organic deposits are estimated to generally range from 1 to 2.5 feet with one reported occurrence of approximately 5 feet of organic silt near the Neponset River. Underlying the fill material and/or organic deposits, a natural sand deposit is present that extends to depths ranging from approximately 15 feet to 20 feet below ground surface. Glacial till and bedrock are anticipated to underlie the granular outwash deposits, however, no subsurface explorations have been

performed that extended to greater depths to confirm the presence and location of the glacial till and bedrock in the area west of Tchapitoulas Street.

Area east of Tchapitoulas Street: Subsurface conditions in this area appear to be variable with very shallow depths to bedrock in the northern portion of the area, and deeper deposits of fill, sand and gravel, and glacial till overlying the bedrock in the southern portion of the area. A layer of topsoil was apparently placed following the demolition of a former building in this area. The topsoil appears to be generally underlain by a layer of granular fill material that extends up to 3 feet below the ground surface in the southern portion of the area and to about 1 foot in the northern portion of the site. Based on test pits and borings performed at the site in 2004, the fill material was described to contain cobbles and traces of ash, sheet metal, wood, and other debris. A layer of gravelly sand and silty sand underlies the fill in the southern portion of the area up to depths of about 10 feet below the ground surface whereas the fill in the northern portion of the site appears to be underlain by weathered bedrock and bedrock.

Groundwater Conditions

West of Tchapitoulas Street: Based on groundwater observations in wells and test pits at the site, groundwater is anticipated to be present within depths of 9 to 13 feet below the ground surface.

East of Tchapitoulas Street: Based on groundwater levels reported in prior subsurface studies, groundwater is anticipated to be relatively deep. Localized perched groundwater may be present in the northwestern portion of the site.

Impacts of Geotechnical Conditions

Subsurface explorations, consisting of borings and test pits, have been conducted to provide information on the subsurface soil and groundwater conditions for geotechnical purposes.

Based upon the subsurface conditions and materials underlying the Project site and the proposed scope of development, it is anticipated that foundation support will be provided by a conventional spread footing foundation system with either a slab-on-grade or structural slab for the lowest level.

For the installation of conventional spread footing and slab-on-grade foundations, limited excavation and replacement of the organic soils in the area west of Tchapitoulas Street will be performed. Within the footprints of the proposed buildings, surficial fill material will be stripped and stockpiled, and the underlying organic soils will be excavated and removed from the foundation bearing zone. Excavated organic soils will be re-used in non-structural areas to the extent practical.

Engineered structural fill will be installed and compacted in the excavated areas to bring the subgrade up to the foundation bearing elevation. Upon subgrade preparation, the building foundations will be constructed on the newly installed engineered fill.

Due to shallow bedrock and bedrock outcrops in some areas east of Tchapitoulas Street, limited bedrock removal will be required to construct the building foundations in the northern portion of this area. Other areas will be stripped of the surficial topsoil and subsoil and shallow foundations will be installed on surface compacted existing soils.

It is not anticipated that foundation construction will require excavation below the groundwater level as no basements are proposed for the new development. Localized excavation below the groundwater level may be required for construction of manholes and below-grade utilities. Dewatering for these excavations may be performed by means of localized sumping and either on-site recharge or off-site discharge. No significant impacts to the existing groundwater levels are anticipated as a result of temporary localized sumping.

Dewatering effluent generated during temporary construction dewatering, if discharged off-site, will be performed in compliance with applicable regulations and discharge permits. Groundwater levels outside the excavation will be monitored and measures undertaken if impacts exceed contract requirements. If off-site discharge of groundwater is required, groundwater quality will be monitored during construction as part of permit requirements. Construction of the Proposed Project is not expected to have adverse short or long-term impact on groundwater conditions.

Hazardous Materials

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Site History

As early as 1917, the portion of the property adjoining the East side of Tchapitoulas Street was occupied by a residence (60 Poydras Street) and was a portion of a larger industrial property. This former industrial property (addressed as 36 Poydras Street) also included the existing senior housing facility property that adjoins to the east and south. A former industrial building located at the site was used for the manufacture of wood products, wire and cable, and sandpaper through the 1940s; it was then occupied by the Perkit Folding Box Company, a manufacturer of cardboard boxes, from the mid-1940s through 2002. The residence and the manufacturing building were razed in 2010 for the construction of the existing senior housing facility.

The portion of the site fronting the west side of Tchapitoulas Street was vacant wooded land until the late-1990s/2000s, when it was cleared and used for

automotive parking and equipment storage by a water/sewage/drainage contractor. The on-site building was constructed in the late-1980s for use by the contractor.

Site Assessment

Environmental site assessments have been completed at the Project site. The results of the site assessments have indicated the presence of polycyclic aromatic hydrocarbons (PAHs) and metals in soil. The presence of PAHs and metals in soil will be addressed in conjunction with site redevelopment and in accordance with the provisions of the Massachusetts Contingency Plan (MCP).

Historic Underground Storage Tanks

Documentation on file at Massachusetts Department for Environmental Protection (MassDEP) indicates that an 8,000 gallon single walled steel underground storage tank (UST) was formerly located at the northern end of the parcel fronting the east side of Tchapitoulas Street. The UST held No.6 heating oil for the former Perkit Box building. In July 1999, during excavation activities to permanently close the UST, No. 6 fuel oil contamination was detected in soil, triggering a 120-day notification requirement under the MCP. Release Tracking Number (RTN) 3-18560 was issued by MassDEP. Remedial activities performed included the excavation and off-site disposal of petroleum impacted soils. The UST was removed and taken off-site. Impacted soils were reportedly excavated to ledge and groundwater was not encountered in the excavation. On November 11, 1999, a Class A-2 Response Action Outcome (RAO) prepared by Web Engineering was filed with MassDEP, bringing the release to regulatory closure. No other USTs are known to have been present at the site.

Mitigation Measures and Monitoring

A limited pre-construction soil and groundwater quality testing program was performed to evaluate the options for reuse, recycling, disposal, or treatment of contaminated soil and/or groundwater. Four soil samples were submitted for laboratory analysis. Results for one of the samples indicated arsenic and certain polycyclic aromatic hydrocarbons (PAHs) at concentrations that would require special management if the material were to be taken off-site. Groundwater results for two samples tested for volatile organic compounds (VOCs) were below the method detection limits.

Based on the limited data generated, excess excavated soil to be taken off-site will be subjected to laboratory analysis to evaluate its disposition for off-site reuse, disposal, treatment, or recycling in accordance with MassDEP policy and the MCP. The

construction contractor will be responsible for on-site re-use and/or proper off-site removal of contaminated soil, and disposal of solid waste and debris. Additional groundwater testing may be performed in support of obtaining temporary construction dewatering permits and to assess the need for on-site treatment to remove contaminants prior to off-site discharge.

Air Quality

Article 80 may require an evaluation of impacts on air quality from any significant stationary or mobile sources associated with the Proposed Project. The Proponent is prepared to address this requirement if necessary with a microscale analysis in accordance with the protocol/modeling procedures typically required by the BRA to determine conformance with the National Ambient Air Quality Standards (NAAQS).

The U.S. Department of Housing and Urban Development (HUD) has established the NAAQS as the criteria for evaluating air quality impacts on residential and other sensitive receptors. The air quality analysis evaluates carbon monoxide concentrations at sensitive receptor locations and demonstrates that the Proposed Project will not interfere with the attainment or maintenance of the Massachusetts State Implementation Plan (SIP) and NAAQS for carbon monoxide.

■

Air Quality Standards

The 1990 Clean Air Act Amendments (CAAA) resulted in states being categorized as attainment and non-attainment areas, based upon the severity of their air quality problems. The Proposed Project is located in an area that has been designated as a Carbon Monoxide Maintenance area. The U.S. Environmental Protection Agency (EPA) has established the NAAQS for carbon monoxide to protect the public health. The Commonwealth of Massachusetts has adopted the same standards as those set by the EPA, and HUD applies these NAAQS when evaluating impacts. The NAAQS for carbon monoxide is 35 parts per million (ppm) for a 1 hour period and 9 ppm for an 8-hour period, each not to be exceeded more than once per year.

The predominant source of air pollution anticipated from the Proposed Project is emissions from Project-related motor vehicle traffic, which directly emit carbon monoxide. These impacts can be estimated by modeling carbon monoxide concentrations that are then compared to the NAAQS. The Massachusetts Department of Environmental Protection (DEP) has developed modeling guidelines to ensure that proposed projects satisfy the CAAA and SIP requirements. The DEP guidelines require that proposed projects located in carbon monoxide maintenance areas demonstrate that no violations of the NAAQS for carbon monoxide will be created in areas where no violations currently exist, and that carbon monoxide reductions will occur in areas where violations currently exist.

Noise

Future (post-construction) sound levels from the Proposed Project are estimated to likely be lower than the previous levels associated with the DiLetzia & Sons General Contractors Company. The site was previously operated by the construction company, including the staging of many large construction trucks and equipment. New rooftop mechanical equipment will be located in the upper story to reduce abutter impact and will include low speed, low noise fans where possible. Project-related traffic is not expected to substantially change the sound levels from the existing roadway and adjacent Commuter Rail tracks.

The City of Boston and the DEP have developed noise impact criteria that establish noise thresholds deemed to result in adverse impacts.

City of Boston Criteria

The City of Boston has established regulations evaluating sound levels from proposed developments. These regulations establish maximum allowable sound levels based upon the land use of the proposed development. If the proposed development is located in an industrial zoning district, the maximum noise level affecting residential uses shall not exceed the Residential-Industrial Noise Standard. The industrial land use noise standard is 65 dBA for daytime conditions (7:00 AM to 6:00 PM) and 55 dBA for nighttime conditions (6:00 PM to 7:00 AM). The Business land use noise standard is 65 dBA for both daytime and nighttime conditions. These criteria are applicable to building facility noise sources, such as mechanical equipment, and do not apply to operation of any motor vehicle on any public roadway.

DEP Criteria

The Department of Environmental Protection (DEP) has established a policy (DEP Policy 90-001) for implementing its noise regulations (310 CMR 7.10). This policy states that a source of sound will be considered in violation of the Department's noise regulation under the following conditions:

- If the source increases the broad band sound level by more than 10dBA above ambient (normally defined as L90 or the noise level exceeded 90 percent of the time during the hours of noise source operation), or
- If the source produces a "pure tone" condition.

The DEP Noise Policy applies to mechanical equipment and not motor vehicles

■

Noise Mitigation

Primary noise sources from the Proposed Project will be the mechanical equipment to support the heating, ventilation, and air conditioning (HVAC), which control the climate within the buildings. The actual capacity, manufacturer, screening methodology, and exact locations of HVAC equipment are not yet known as the design is still in progress. Therefore, estimated cooling loads were used for this preliminary qualitative analysis. With careful attention to the equipment selection and adequate screening, the Project will comply with the City of Boston Zoning District Noise Standards.

The anticipated noise levels are anticipated to fall below the City of Boston regulation limit. However, the Proponent is committed to the following noise attenuation measures and to complying with the Regulations for the Control of Noise in the City of Boston:

- Using HVAC equipment with low speed, low noise fans.
- Locating equipment to achieve sound level reductions.
- Controlling noise from back-up beepers, opening and closing of vehicle and loading dock doors, emptying of dumpsters, and movement of goods.
- Scheduling deliveries, trash/recycling removal, and use of facilities to be compatible with noise attenuation objectives.
- Installing permanent "No Idling" signs at loading/receiving areas.

The construction activities related to the development of the site will generate noise for a short period of time. Although construction sound levels will be higher than the existing sound levels, they will be temporary, and construction-related noise will be minimized. See below for additional discussion on construction-related noise.

Construction Impacts

This section describes the anticipated methods and impacts of construction related to the Proposed Project. A Construction Management Plan (CMP) will be submitted to the Boston Transportation Department. This plan will comply with the City of Boston's Construction Management Program. The CMP includes detailed information regarding construction activities, materials to be used, staging areas, parking, truck routes, air quality and noise impacts and mitigation measures, and other subject matter as it relates to construction. In particular, the CMP will demonstrate the intent to maintain public safety throughout the construction period. Techniques such as barricades, defined temporary walkways, signage, and other protective measures will be put in place. The CMP will also highlight actions to be

taken to accommodate worker parking, truck routes and staging, protection of utilities, and the control of noise and dust.

■

Construction Schedule

The following list provides a preliminary assessment of the construction schedule for the Proposed Project:

- Project Review, Approval, and Permitting — Spring2013 - Winter 2014
- Site Demolition and Remediation — Spring 2014
- Site Excavation and Construction — Spring 2014 - Fall 2014
- School Construction — Fall 2014 - Summer 2015
- School Opening — September 2015

It is anticipated that the Project construction will commence by late Spring 2014. The entire construction schedule is anticipated to be approximately 15 months with completion scheduled by August 2015.

■

Construction Noise Impacts and Mitigation

The construction activities related to site development will generate noise related to site demolition, excavation, earth movement, and construction vehicles. Although construction sound levels will be temporarily higher than the existing sound levels, no violations of the City of Boston construction noise criteria are expected and the Proponent is committed to mitigate construction-related noise impacts.

Noise Impacts

Moderate increases in noise levels associated with the construction of the Project may occur in the short-term during construction since heavy machinery is expected to be used intermittently throughout the Proposed Project's construction. Some equipment may be heard from off-site locations; however, construction work will comply with the requirements of the City of Boston noise ordinance and every reasonable effort will be made to minimize the noise impact of construction activities.

The construction phases that will generate the highest sound levels are building demolition, site excavation and grading. Construction sound levels, based upon construction equipment noise studies prepared by the Environmental Protection Agency, are expected to range from an L_{10} of 65 to 75 dBA with an Lmax of 85 dBA. The City of Boston noise control regulation considers construction sound levels to be an impact to residential land uses if the L_{10} is in excess of 75 dBA or the Lmax is in excess of 86 dBA. The predicted construction sound levels are below the City of

Boston noise criteria. A construction management program will be developed with the City of Boston to ensure that the noise regulation is met.

City of Boston Requirements

Project construction noise is not expected to exceed the limits described in Table 5-1 below. Regulation 3 of the Regulations for the Control of Noise in the City of Boston, "Restrictions of Noise Emitted from Construction Sites," establishes limits for construction noise. The limits are applied at the lot line of the receiving property. In the case where equipment is operated at closer than 50 feet to the applicable lot line, the limits are applied at 50 feet from the equipment. The City of Boston regulations are not applicable to impact devices such as jackhammers, pile drivers, riveters, pavement breakers, etc. In addition, the L_{10} must exceed the ambient L_{10} by at least 5 dBA to be considered a violation of the limits. It is the goal of this Project to operate within the criteria set by the Boston ordinance.

Table 5-1
Summary of Construction Site Noise Limits for Boston

Land Use of Affected Property	Noise Level Limit* dBA L_{10} Level	Noise Level Limit* dBA Maximum Level***
Residential or Insitutional	75	86
Business or Recreational	80	-
Industrial**	85	-

Source: Regulation 3, City of Boston Air Pollution Control Commission, Regulation for the Control of Noise in the City of Boston, adopted December 17, 1976
* Measured at the lot line of the affected property.
** The industrial noise limit shall apply to public ways.
*** Maximum noise level shall be measured with the sound level meter on 'SLOW' response.

Construction Noise Mitigation

Construction period activities may temporarily increase nearby sound levels due to the intermittent use of heavy machinery during the construction. These activities include demolition, foundation construction, truck movements, heavy equipment operations, and general construction activities. Regulation 3 of the City of Boston Code, Ordinances, Title 7, Section 50, includes specific construction noise limits by land use. The relevant criterion for the Project is based on residential or institutional land use. The construction noise at the property line for residential or institutional land use is limited to a maximum level of 86 dBA; with a limit of 75 dBA for the construction noise level exceeded 10 percent of the time (L_{10}). In addition, the City of Boston Code, Ordinances, Title 14, Chapter 11, Section 354 (titled "Unreasonable Noise") also applies to construction activities. This ordinance establishes a noise limit of 50 dBA for construction noise measured at residential lot lines between 6:00

PM and 7:00 AM. This ordinance effectively prohibits nighttime construction near residential areas.

The Project will utilize the following construction noise mitigation measures to assist in operating the Project within the criteria set by the Boston ordinance:

- Scheduling of work during daytime hours. Project construction hours will be restricted to be 7:00 AM to 6:00 PM. Contractors will not be allowed to operate diesel equipment or prepare and move materials before 7:00 AM.
- Selecting the quietest practical items of equipment, e.g. whenever possible, electric instead of diesel powered equipment.
- Scheduling equipment operations to keep average levels low, to synchronize noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels.
- Turning off idle equipment.
- Protecting sensitive locations by shielding or distancing noisy equipment.
- Maintaining muffler enclosure on continuously operating equipment, such as air compressors and welding generators.

■

Construction Air Quality

Areas of exposed soils will be vegetated or paved as soon as practicable to minimize the length of exposure time. Exposed areas susceptible to wind will be mulched or seeded as early as feasible in the construction process to further reduce dust emissions. Runoff will be controlled to prevent sediments from entering the storm drain system.

Construction activities may generate dust, which will result in localized increase in airborne particle levels. Fugitive dust emissions from construction activities will depend on such factors as the properties of the emitting surfaces (e.g., moisture content and volume of spills), metrological and variables and construction practices employed. To limit the creation of airborne dust and minimize impacts on the local environment, the contractor will employ dust control measures in accordance with applicable local, state, and federal requirements. Dust control measures which may be implemented by the contractor include:

- Use of standard dust control such as watering-down the exposed ground surfaces or spreading hygroscopic salts will be employed to control and suppress dust that originates from construction related activities.
- Covering of soil subgrades with crushed stone where heavy equipment will be traveling.
- All trucks leaving the site shall be securely covered.

- The contractor shall clean debris from the construction area and surrounding streets on a routine basis.
- Mechanical sweeping will occur as needed.
- Wheel wash locations will be provided as necessary.
- Contaminated soils that are stockpiled onsite will be securely covered with polyethylene sheeting.
- All contractor and sub-contractor-operated diesel-powered non-road construction equipment with engine horsepower (HP) ratings of 60 HP and above, which is used on the Project for a period in excess of 30 days, shall be retrofitted with Emission Control Devices in order to reduce diesel emissions.
- In addition, all motor vehicles and construction equipment shall comply with all pertinent City, State, and Federal regulations covering exhaust emission control and safety.
- The reduction of emissions of volatile organic compounds (VOCs), carbon monoxide (CO), and particulate matter (PM) from diesel-powered equipment shall be accomplished by installing Retrofit Emission Control Devices.

The acceptable Retrofit Emission Control Devices for the Project shall consist of oxidation catalysts that (1) are included on the Environmental Protection Agency (EPA) Verified Retrofit Technology List; and (2) are verified by EPA or certified by the manufacturer to provide a minimum emissions reduction of 42 percent for VOCs, 31 percent for carbon monoxide and 20 percent for particulate matter. Attainment of the required reduction in particulate matter emissions can also be accomplished by using less polluting clean fuels (e.g. PuriNOx).

In addition to installing the required emission control devices, the contractor will also use methods to control nuisance odors associated with diesel emissions from construction equipment including without limitation the following:

- Turning off diesel combustion engines on construction equipment not in active use, and on trucks that are idling while waiting to load or unload material for five minutes or more.
- Locating diesel equipment away from the general public and sensitive receptors (e. g., fresh air intakes, air conditioners, and windows).

The Proponent will provide contractors with information promoting the Clean Air Construction Initiative (CACI). This initiative encourages the use of available, state-of-the-art diesel exhaust control technology on diesel-powered construction and industrial vehicles and equipment in an effort to substantially reduce harmful diesel particulate emissions, oxides of nitrogen (NOx), toxic hydrocarbons, odor, and smoke.

■

Construction Water Quality

Local dewatering may be required to construct utilities and facilitate other deeper excavations. On-site recharge in accordance with the MCP at 310 CMR 40.0045 is planned as the primary approach for construction dewatering discharge. Discharge to municipal storm drains under a NPDES Remediation General Permit (RGP) will be implemented in the event that subsurface geology can not accept dewatering flows. Effluent from dewatering efforts may include groundwater, precipitation, and surface water runoff. If needed, a dewatering effluent treatment system will be designed and operated by the contractor. Discharge water quality sampling and analyses will be conducted to monitor compliance with the NPDES RGP.

■

Construction Traffic

As with every construction project, some level of traffic impact can be anticipated. The construction trip generation due to workers and trucks is described in more detail below.

Construction Trip Generation and Worker Parking

Personnel will arrive at the job site either by public transportation or by personal vehicles. Personal vehicles will be allowed to park at the Project construction site as conditions permit in designated areas only. No personal vehicles will be allowed to park in the adjacent neighborhood. Because the workforce will arrive and depart prior to peak commuter traffic periods, these trips are not expected to have a large impact on the area's transportation system.

Truck Routes and Volumes

The vehicular access to the Project site during the construction period will be from Poydras Street via Neponset Field Lane's existing curb cuts. The construction is expected to have a period of approximately 1 month during which the modular prefabricated sections of the buildings will be brought into the site. During this time period, it is expected that a number of trucks per day will be delivering these sections with the supporting vehicles.

■

Rodent Control

The Massachusetts State Sanitary Code, Chapter 11, 105 CMR 410.550 and the State Building Code, Section 108.6, Policy Number 87-4 (City of Boston) states that

extermination of rodents shall be required for issuance of permits for demolition, excavation, foundation and basement rehabilitation. In compliance with the City's requirements, a rodent extermination certificate will be filed with the Proponent's building permit application to the City of Boston and a rodent control program will be developed prior to construction.

The rodent control program will include inspection and extermination in all areas of the Project site, including the interior of the existing buildings, prior to commencement of work. During construction, regular inspections will be made in order to maintain effective rodent control levels. The Proponent will establish a post-construction pest management program that requires the use of preventive methods outlined in the program to ensure that the buildings are not infested with rodents

Historic Resources

This section notes any properties that are either in the *Inventory of Historic and Archaelogical Assets of the Commonwealth* or listed in the State Register of Historic Places that are within the Project site or are close proximity.

Site File Review

A site file search at the Massachusetts Historical Commission (MHC), Historic New England Library and Archives, Boston Athenaeum, Boston Public Library, and other sources helped to identify the resources in the Project area and in close proximity.

Results of Research

Research indicates that only the Truman Parkway to the south of the site across the Neponset River is National Register-listed. No other above-ground or archaeological resources have been documented within the study area.

Conclusion

Based on the proximity of the Project site to the Truman Parkway, the construction of the Proposed Project will not affect the parkway. There will be no wind or shadow impacts to the parkway due to the Neponset River and surrounding vegetative buffer between the two areas.

Sustainable Practices

City of Boston Green Building Requirements

Newly amended Article 80B-6 provides that new development projects that are over 50,000 SF must comply with green building standards and sustainable design features as described in Article 37 of the City's zoning code. The proponent is committed to incorporating numerous sustainable design elements into the new school to be constructed which respond to environmental concerns, reduce energy consumption, reduce water use, and increase recycling by students and staff.

A LEED for Schools checklist is included as **Figure 5-3** computing the green building points defined by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) building rating system.

Project LEED Team

The proponent has engaged the following LEED accredited professionals to lead the project design team to maximize the green design elements of the building and its site design.

Tamar Warburg, AIA, LEED AP BD+C

Description of LEED Checklist

The project will utilize the LEED for School Standard as it is a K-12 School Project. The following section is a synopsis of LEED prerequisites and potential credits under review for the project.

Sustainable Sites

Construction Activity Pollution Prevention

The proponent will comply with the National Pollutant Discharge Elimination System (NPDES) program as established by the EPA.

Environmental Site Assessment

Remediation will be part of project as the project site is known to be contaminated. Remediation work will meet the standard set by the EPA and other agencies which have jurisdiction over the project.

LEED 2009 for Schools New Construction and Major Renovations

Project Checklist

MATCH Community Day Charter Public School, Hyde Park, MA

Date

Sustainable Sites — Possible Points: 24

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
Y			Prereq 2	Environmental Site Assessment	
		1	Credit 1	Site Selection	1
4			Credit 2	Development Density and Community Connectivity	4
1			Credit 3	Brownfield Redevelopment	1
4			Credit 4.1	Alternative Transportation—Public Transportation Access	4
		1	Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
2			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	2
		2	Credit 4.4	Alternative Transportation—Parking Capacity	2
1			Credit 5.1	Site Development—Protect or Restore Habitat	1
1			Credit 5.2	Site Development—Maximize Open Space	1
	1		Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
		1	Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
	1		Credit 8	Light Pollution Reduction	1
		1	Credit 9	Site Master Plan	1
1			Credit 10	Joint Use of Facilities	1

Water Efficiency — Possible Points: 11

Y			Prereq 1	Water Use Reduction—20% Reduction	
4			Credit 1	Water Efficient Landscaping	2 to 4
		2	Credit 2	Innovative Wastewater Technologies	2
2	2		Credit 3	Water Use Reduction	2 to 4
1			Credit 3	Process Water Use Reduction	1

Energy and Atmosphere — Possible Points: 33

Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
5	14		Credit 1	Optimize Energy Performance	1 to 19
	7		Credit 2	On-Site Renewable Energy	1 to 7
2			Credit 3	Enhanced Commissioning	2
1			Credit 4	Enhanced Refrigerant Management	1
	1	1	Credit 5	Measurement and Verification	2
		2	Credit 6	Green Power	2

Materials and Resources — Possible Points: 13

Y			Prereq 1	Storage and Collection of Recyclables	
		2	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 2
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2

Materials and Resources, Continued

Y	?	N			
		2	Credit 3	Materials Reuse	1 to 2
1	1		Credit 4	Recycled Content	1 to 2
		2	Credit 5	Regional Materials	1 to 2
		1	Credit 6	Rapidly Renewable Materials	1
		1	Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points: 19

Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
Y			Prereq 3	Minimum Acoustical Performance	
1			Credit 1	Outdoor Air Delivery Monitoring	1
	1		Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
4			Credit 4	Low-Emitting Materials	1 to 4
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
1			Credit 7.2	Thermal Comfort—Verification	1
2		1	Credit 8.1	Daylight and Views—Daylight	1 to 3
1			Credit 8.2	Daylight and Views—Views	1
	1		Credit 9	Enhanced Acoustical Performance	1
1			Credit 10	Mold Prevention	1

Innovation and Design Process — Possible Points: 6

1			Credit 1.1	Innovation in Design: Modular Construction	1
	1		Credit 1.2	Innovation in Design: Green Advantage	1
1			Credit 1.3	Innovation in Design: Non-Mercury Lighting	1
	1		Credit 1.4	Innovation in Design: Integrated Project Delivery	1
1			Credit 2	LEED Accredited Professional	1
		1	Credit 3	The School as a Teaching Tool	1

Regional Priority Credits — Possible Points: 4

1			Credit 1.1	Regional Priority:SSc3. Brownfield Redevelopment	1
1			Credit 1.2	Regional Priority: SSc7.2. Heat Island Effect - Roof	1
	1		Credit 1.3	Regional Priority: SSc6.1. Stormwater Design-Quantity Control	1
	1		Credit 1.4	Regional Priority:EAc2. On-Site Renewable Energy	1

Total — Possible Points: 110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

Source: Studio G Architects

match COMMUNITY DAY Charter Public School

Figure 5-3

LEED Checklist

VHB Vanasse Hangen Brustlin, Inc.

Development Density & Community Connectivity

The project will redevelop a previously developed site in an urban neighborhood near the bus stops and services on River Street, and will meet the community connectivity option for this credit.

Brownfield Redevelopment

The project site meets the definition of a brownfield due to the presence of reportable concentrations of contaminated materials in the soil. The proposed project meets the intent of the brownfield redevelopment credit due to complications of additional cost and required regulatory compliance work necessitated by the site contamination.

Alternative Transportation: Public Transportation Access

The project site is located within 0.25 miles of the bus stop on River Street that is served by three bus routes. The project will also be served by school bus system.

Alternative Transportation: Low-Emitting & Fuel-Efficient Vehicles

Five percent of the parking spaces will be preferred parking for Low-Emitting & Fuel-Efficient Vehicles. A vanpool space will be provided as part of the project.

Site Development: Protect or Restore Habitat

The project transforms a previously developed site that is almost completely paved to a site where well over 20% will be planted with native or adapted vegetation. that is nearly half (49%) green open space, with native vegetation.

Site Development: Maximize Open Space

The project site incorporates open landscaped areas along the Neponset River as well as other areas elsewhere on the site, meeting the credit standard.

Stormwater Design: Quality Control

The stormwater management plan will utilize Best Management Practices to treat runoff and remove 80% of the average annual post development total suspended solids. Storm water from portions of the parking lot is captured by rain gardens with plant material used to transpire and mitigate the runoff before it reaches the Neponset River.

Heat Island Effect: Roof

The new construction will feature white TPO or EPDM roofs that are highly reflective and reduce solar radiation.

Joint Use of Facilities

It is the intent of the school that the gymnasium and playing field be available for other Match Schools as well as for community use during off hours. The layout of the campus will allow these spaces to be used by the public while the rest of the school is secured.

Water Efficiency

Water Efficient Landscaping

Landscape plant materials will be native and drought resistant, so that no irrigation will be required.

Water Use Reduction; 30%

Duel flush, low flow toilet, and low flow faucets and shower heads will be employed to reduce water usage. Infrared sensors for faucet operations improve hygiene while reducing water consumption.

Process Water Use Reduction

Equipment will be selected to meet the water use reduction stated in this credit.

Energy and Atmosphere

Fundamental Commissioning of Building Energy Systems

A commissioning agent will be hired as part of the design team to achieve this prerequisite as well as the additional commissioning credit.

Minimum Energy Performance

The project is expect to achieve 20% over the ASHRAE 90.1-2004 (see EA Credit 1), meeting the minimum energy performance, comply with the Massachusetts Energy Stretch Code, and meet the requirements of this prerequisite.

Fundamental Refrigerant Management

New HVAC systems will not utilize CFC refrigerants and will use HFC only; no ozone depleting refrigerants are used in the new cooling systems.

Optimize Energy Performance

The project is expect to achieve 20% over the ASHRAE 90.1-2004 (see EA Credit 1), meeting the minimum energy performance, and will comply with the Massachusetts Energy Stretch Code. Energy efficiency will be achieved by improved building envelope, increased insulation at walls and roof, improved windows at all locations,

high efficiency lighting for all spaces, daylight harvesting to reduce lighting energy need, and an HVAC system that meets the Stretch Code. Occupancy sensors and time clocks will be used to reduce energy consumption in both HVAC and lighting needs. High efficiency motors will be incorporated with variable-frequency drives whenever possible.

Enhanced Commissioning

A commissioning agent will be hired to develop commissioning plan meeting the requirement stated in the EA Credit 3.

Enhanced Refrigerant Management

All HVAC and food service equipment will meet the requirement of EA Credit 4.

Materials and Resources

Storage and Collection of Recyclables

Recycling bins will be provided in each classroom and office. In addition, a recycling collection/storage area is located near the service entrance to facilitate the recycling program.

Construction Waste Management

The construction contractor will be required to implement a waste management plan to divert at least 75% of construction and demolition material to recycling and salvage facilities. It is expected that as much as 95% of the construction waste could be diverted.

Recycled Content: 10%

The project team will use material with as much recycled content as possible for the project. Some of the materials include fly ash in concrete, recycled gypsum boards, structural steel, ceiling tiles, and possibly insulation.

Indoor Environmental Quality

Prerequisites

The project will meet the minimum requirements of the Massachusetts Building Code and ASHRAE 62.1 2007 for ventilation and indoor air quality. Smoking will be prohibited on school grounds per Massachusetts General Law.

Outdoor Air Delivery Monitoring

A carbon dioxide monitoring system will be employed to trigger an alarm if levels rise above the setpoint.

Construction IAQ Management Plan- During Construction and Before Occupancy

Construction specifications will require the contractor to submit an IAQ plan for the construction period to protect the HVAC system and prevent moisture and contaminants from contact with carpeting, ceiling tiles, and other absorptive surfaces. The building will be flushed out prior to occupancy.

Low-Emitting Materials

Adhesives, sealants, paints, coatings, flooring , ceiling and wall systems with low VOC content limits will be specified for use in the project.

Indoor Chemical & Pollutant Source Control

Entry mat systems will be installed in all entries. Direct ventilation to outside will be provided in all chemical storage areas, including housekeeping spaces. A MERV 13 filter will be specified to meet the standard for this credit.

Lighting Systems Controllability

Lighting controls will be provided as required by this credit.

Thermal Comfort Controllability

A combination of operable windows and HVAC controls will be provided as required by this credit

Thermal Comfort - Design

The HVAC system will be designed to meet the ASHRAE Standard 55-2004 as required by this credit.

Thermal Comfort - Verification

A post-occupancy survey will be administered and evaluated as required by this credit.

Daylight & Views

Generously proportioned windows are designed to achieve the daylight factor. In the classrooms, windows will be used to achieve the necessary daylight factor to meet the standard.

Mold Prevention

The HVAC systems are designed to limit the relative humidity in accordance with the requirements of this credit.

Innovation and Design Process

Innovation in Design: Modular Construction

The modular construction method reduces construction waste and encourages recycling. Moisture damage is prevented because framing and insulation are installed in indoor environmental preventing damage by rain, wind and weather extremes.

Innovation in Design: Non-Mercury Lighting

All lighting specified for the project, including compact fluorescent fixtures, will not contain mercury.

LEED Accredited Professional

The project design team has at least one LEED AP.

Regional Priority Credits

Regional Priority Credits- Northeast

The local regional priorities include: Brownfield Redevelopment and Heat Island Effect- Roof.

■

Recycling

The Proponent is committed to developing a recycling program to sort bottles, plastics, and papers on the site. During the construction period, a construction waste management plan will be put in place to recycle up to 75% of materials.

■

Energy Conservation

The Proposed Project will be highly energy efficient due to a highly insulated building envelope, high efficiency lighting and HVAC systems for all spaces, including daylight harvesting to reduce lighting energy needs.

■

Water and Conservation Quality

Various elements of the project will meet goals of water conservation and improved water quality. Landscape plant materials will be native and drought resistant to eliminate irrigation water use. This additional green open space on the site will also have the benefit of improving groundwater recharge and the quality of runoff.

Low flush, low flow toilet, and low flow faucets and shower heads will be employed to reduce water usage. Infrared sensors for faucet operations improve hygiene while reducing water consumption.

■

Air Quality

The project is not anticipated to affect local or regional air quality. Indoor air quality will be improved over the current condition by the use of low-emitting materials.

■

Building Materials

Use of modular construction methods will significantly reduce the construction waste generated by the building, and encourages recycling of all building debris. Elements to enhance sustainability will be integrated into the building design, like a white roofing material to reflect light and reduce cooling loads.

6

Infrastructure Systems

Introduction

This chapter evaluates the infrastructure systems that will support the Match Community Day School Project. The following utility systems are evaluated herein:

- Wastewater
- Domestic water and fire protection
- Stormwater management
- Natural gas
- Electricity
- Telecommunications

Regulatory Findings

This chapter, in addition to a description of existing and future infrastructure connections, discusses the regulatory framework of utility connection reviews and standards that will be adhered to in connection with the Project. Utility connections supporting the Project will be designed and constructed in accordance with City, State, and Federal standards. The following are regulatory agencies that the Proponent will coordinate with throughout the design and construction process:

- The Boston Water and Sewer Commission (BWSC) is responsible for the majority of water, sewer, and stormwater systems. BWSC reviews any modifications of on- and off-site water, sewer, and drainage systems through their site plan review and approvals process. This process includes a comprehensive design review of the proposed service connections, assessment of system demands and capacity and establishment or updating of service accounts.
- The Massachusetts Department of Environmental Protection (DEP) Office of Coastal Zone Management (CZM) has established a stormwater management policy that will be implemented and reviewed through the

filing of a Notice of intent (NOI) with the City of Boston Conservation Commission.

- The Boston Fire Department (BFD) will review the Project with respect to fire protection measures such as siamese connections and standpipes.
- Design of the site access, hydrant location, and energy systems will also be coordinated with the respective system owners.
- New utility connections will be authorized by the Boston Public Works Department through the street opening permit process, as required.

Wastewater

■

Existing Wastewater

The Match Community Day School will increase the effluent entering the existing BWSC sewer system. By DEP sewer system extension and connection permit program 314 CMR 7.00 (**See Figure 6-1**), the aggregate sewer burden for the proposed conditions are described below in **Table 6-1**, with breakdowns noted by type of use and corresponding design amounts for anticipated flows. The existing site is vacant and has a wastewater flow of zero. The total daily discharges for the Proposed Project is estimated as 17,200 gallons per day (gpd), which represents a net increase of approximately 17,200gpd from the existing conditions.

Table 6-1
Proposed Wastewater Generation

Room Use	Size	310 CMR Value (gpd/unit)	Total Flow (gpd)
School Building with Cafeteria, Gymnasium, and Showers	60 Teachers 100 Tutors 700 Students 860 FTE	20 per person	17,200

The site area is serviced by a 10-inch polyvinyl chloride sewer pipe below Neponset Field Lane. This information is based off of the survey titled "Topographic Plan: Match Community Center" prepared by Nitsch Engineering dated January 3, 2013 and BWSC records.

The capacity of the 10-inch BWSC sanitary sewer line within Neponset Field Lane is summarized below in **Table 6-2**. Pipe diameter and inverts were obtained from the BWSC wastewater infrastructure system map 5F & 4F (**Figure 6-1**) and record drawings. Flow capacities of the existing sanitary sewers were calculated in cubic feet per second (cfs) and million gallons per day (MGD) using Manning's equation.

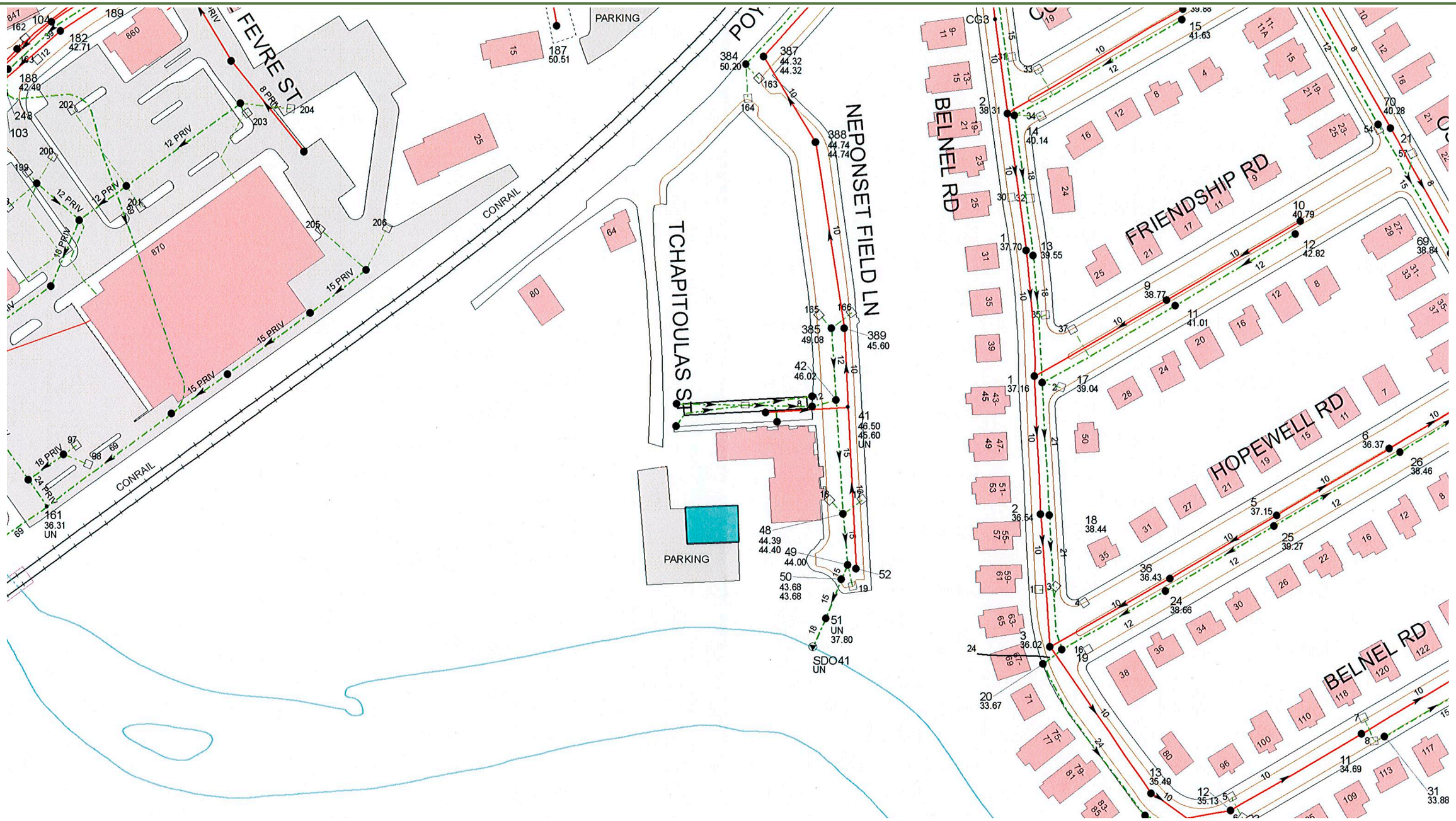

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Figure 6-1

Sewer and Drain System

VHB *Vanasse Hangen Brustlin, Inc.*

Table 6-2
Sewer Hydraulic Capacity Analysis Table: Neponset Field Lane

Manhole (BWSC Number)	Distance (feet)	Invert Elevation (up)	Invert Elevation (down)	Slope (%)	Diameter (inches)	Manning's Number	Flow Capacity (cfs)	Flow Capacity (MGD)
52 to 389	256	46.50	45.68	0.3%	10	0.013	1.23	0.80
389 to 388	198	45.60	44.74	0.4%	10	0.013	1.44	0.93
388 to 387	109	44.70	44.32	0.3%	10	0.013	1.29	0.83

The capacity of the 10-inch BWSC sanitary sewer line within Poydras Street is summarized below in Table 6-3. Pipe diameter and inverts were obtained from the BWSC wastewater infrastructure system map 5F & 4F (**Figure 6-1**). Flow capacities of the existing sanitary sewers were calculated in cubic feet per second (cfs) and million gallons per day (MGD) using Manning's equation.

Table 6-3
Sewer Hydraulic Capacity Analysis Table: Poydras Street

Manhole (BWSC Number)	Distance (feet)	Invert Elevation (up)	Invert Elevation (down)	Slope (%)	Diameter (inches)	Manning's Number	Flow Capacity (cfs)	Flow Capacity (MGD)
Xxx to 387	180	45.68	44.32	0.8%	10	0.013	1.92	1.24

Preliminary analysis of the existing site sewer service appears to indicate that the existing 10-inch sanitary sewer service in Neponset Field Lane and the 10-inch service in Poydras Street are adequately sized for the proposed site redevelopment. Using Manning's Equation, the flow capacity of the existing service pipe in Neponset Field Lane running full is 1.23 cubic feet per second (cfs) or 0.8 MGD and the flow capacity in the service pipe beneath Poydras Street running full is 1.92 cfs or 1.24 MGD. The proposed estimated sewage discharge is equal to 0.024 cfs (0.015MGD).

The size and location of the service lines will be coordinated with the plumbing engineer and the BWSC.

Proposed Connection

BWSC will require a site plan application for existing and proposed utilities for the proposed site redevelopment. Any existing sanitary sewer services proposed to be maintained will need to be video-inspected to ensure that it is structurally sound and functioning properly prior to BWSC approving a new Site Plan application. The cafeteria kitchen waste will be pretreated with a grease trap prior to discharging to the BWSC sewer mains. New sewer service connections will be required for each building of the Match Community Day Charter Public School. The proposed sewer connections will have to flow through new pump stations and will connect directly

to the existing sewer main located within Poydras Street. All proposed connection locations will require coordination with the BWSC.

■

Domestic Water and Fire Protection

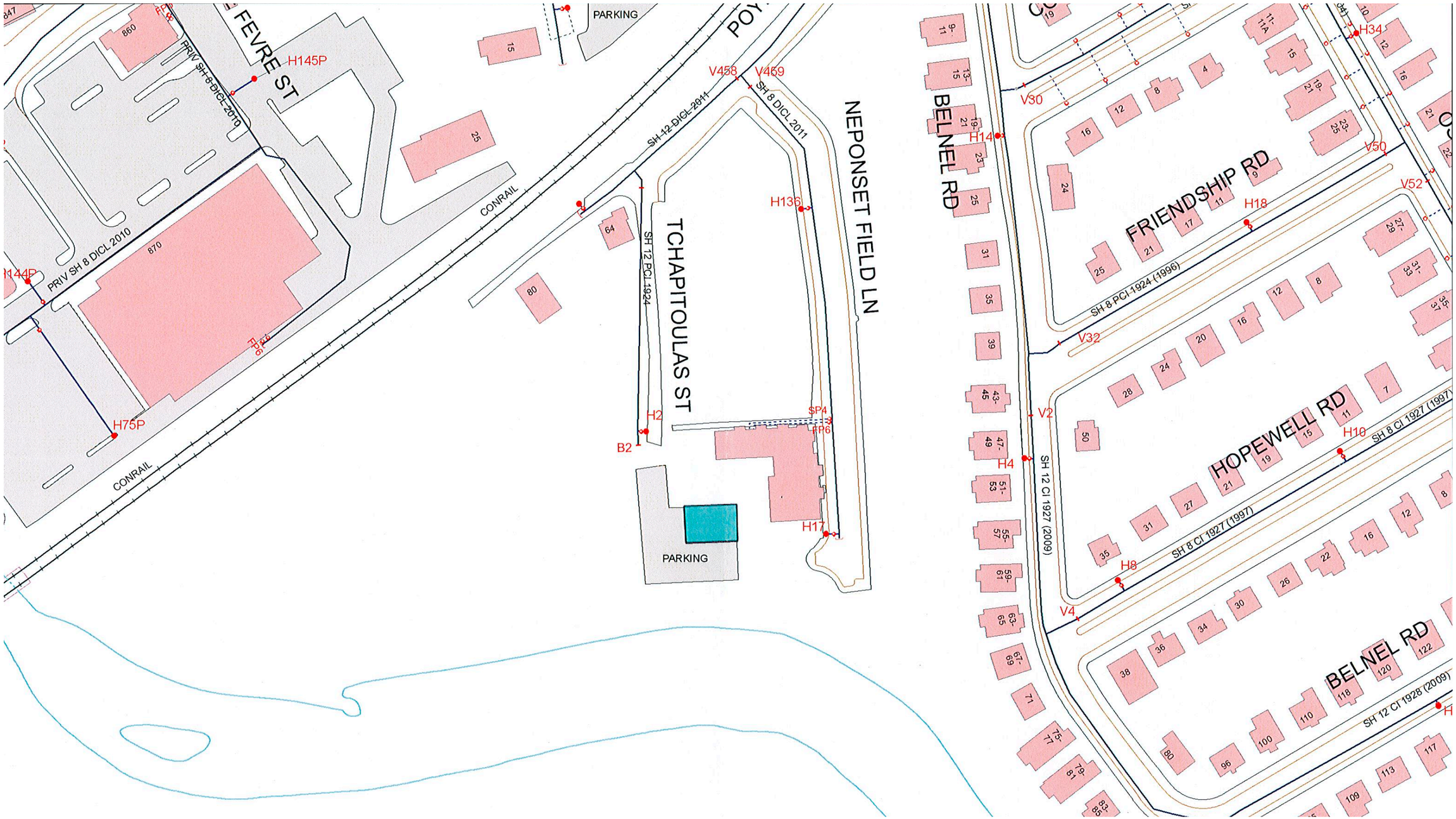
Existing Water Supply System

Water consumption on the proposed site is expected to be 18,920 gallons per day (gpd), based on the Project's estimated sewer generation. The Project's existing site is vacant and water consumption is zero gpd. To achieve these estimations of water demand, a factor of 1.1 (conservative) is applied to the average daily wastewater flows to estimate average water use on a daily basis. The Proposed Project expects to increase the overall water consumption by approximately 18,920 gpd.

BWSC owns and operates a 12-inch Southern High water main in Tchapitoulas Street, which is serviced by a 12-inch Southern High water main in Poydras Street. BWSC also owns and operates an 8-inch Southern High water main in Neponset Field Lane. According to the BWSC records (See **Figure 6-2**) and the survey prepared by Nitsch Engineering the following is a general description of the water system for the Project site:

- The site appears to be serviced by a 12-inch water service pipe in Tchapitoulas Street (SH 12PCI 1924) and an 8-inch water service pipe in Neponset Field Lane (SH 8DICL 2011). The 12-inch line in Tchapitoulas Street is cut and capped at the southern end of the street, and the 8-inch water service in Neponset Field Lane is cut and capped at the southern end of the street. Both water lines connect to the 12-inch water main within Poydras Street, which appears to be cut and capped just west of the Tchapitoulas Street roadway entrance.
- Fire protection for the senior housing at 29 Neponset Field Lane appears to be supplied from a 6-inch fire protection line which is connected to the 8-inch water service pipe in Neponset Field Lane.
- There are three existing hydrants in the vicinity of the site. One hydrant is located west of Tchapitoulas Street and connects to the 12-inch water service pipe in Tchapitoulas Street. The second and third hydrants are located west of Neponset Field Lane and connect to the 8-inch water service pipe in Neponset Field Lane. BWSC does not have any existing hydrant flow data for the three existing hydrants

The proposed domestic water and fire service for each building will connect to either the water service pipe in Neponset Field Lane, Tchapitoulas Street, or Poydras Street. The location of any necessary connections will be determined in consultation with BWSC. The plumbing engineer will determine the domestic water and fire service pipe sizes during the design process of the Project.



match COMMUNITY DAY | Charter Public School

Figure 6-2

Water System

VHB *Vanasse Hangen Brustlin, Inc.*

BWSC will require a site plan application for all existing and proposed utilities for the proposed site redevelopment. The plumbing engineer will need to provide water meter sizing calculations and back flow preventer data sheets for the proposed redevelopment for the site plan approval by the BWSC.

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Stormwater Management

Existing Conditions

The closed drainage system on site consists of catch basins, an area drain, and an underground detention system which all discharge to the 15-inch reinforced concrete pipe in Neponset Field Lane. Stormwater runoff generated from open space and the parking lot between Tchapitoulas Street and Neponset Field Lane appears to be collected by catch basins and discharges to the underground detention system. Overflow from the underground detention system discharges to the 15-inch drain line in Neponset Field Lane. A combination of area drains and catch basins collect stormwater along Neponset Field Lane and the existing building, which then discharges to the 15-inch drain line. The 15-inch drain line discharges through an 18-inch outfall to the Neponset River, south of the site.

The capacity of the storm drain in Neponset Field Lane is summarized below in **Table 6-4**. Pipe diameter and inverts were obtained by BWSC map 5F & 4F (**Figure 6-1**) and record drawings. Flow capacity of existing storm drains were calculated in cubic feet per second (cfs) using Manning's Equation.

Table 6-4
Storm Drain Hydraulic Capacity Analysis Table

Manhole (BWSC #)	Distance (feet)	Invert Elevation (up)	Invert Elevation (down)	Slope (%)	Diameter (inches)	Manning's Number	Flow Capacity (cfs)	Flow Capacity (MGD)
385 to 42	77	49.08	46.02	4.0%	12	0.013	7.10	4.59
42 to 48	122	46.00	44.40	1.3%	15	0.013	7.40	4.78
48 to 49	55	44.39	44.10	0.5%	15	0.013	4.69	3.03
49 to 50	14	44.00	43.93	0.5%	15	0.013	4.57	2.95
50 to 51	45	43.68	41.80	4.2%	15	0.013	13.20	8.53

Preliminary analysis for the reinforced concrete pipe appears to be adequately sized to serve the proposed site redevelopment. Using Manning's Equation, the pipe is running at approximately 11% of its full capacity. This is based on a full pipe capacity of 4.57 cubic feet per second and an existing design flow rate, using the 25-

year, 1-hour storm event, of 0.50 cubic feet per second, based on a runoff area of 11,200 square feet from the existing roof.

Proposed Conditions

The current design for the Match Community Day Public Charter School includes the construction of multiple buildings, playing fields, parking lots, a roadway, and landscape areas. The Project will also include a new stormwater management system. No capacity problems are expected as a result of this project.

BWSC requires projects to comply with the Massachusetts Stormwater Management Standards, which do not allow untreated stormwater to discharge into, or cause erosion to, wetlands, or waters. Stormwater runoff from the site will be treated by deep sump catch basins, manholes, and recharge systems. Any work done within 100 feet of Neponset River will require a Notice of Intent with the City of Boston Conservation Commission.

In accordance with BWSC requirements, the stormwater management system will be designed to recharge 1-inch over the total impervious cover. All project design plans will be reviewed and approved by the BWSC. Recharge volumes will also be required to meet the Department of Environmental Protection Storm Water Management Standards.

BWSC will require a Site Plan application for all existing and proposed utilities for the proposed site redevelopment. Any existing stormwater or drainage service pipe to be maintained will need to be video-inspected to ensure that it is structurally sound and functioning properly prior to BWSC approving a new Site Plan application.

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Massachusetts Stormwater Management Standards

The design objective for the proposed stormwater management system will be to meet the Massachusetts Stormwater Management. Although portions of the project may be considered Redevelopment, the Project will meet the Stormwater Standards for New Development. The following are the 10 standards along with Nitsch Engineering's preliminary recommendations for compliance.

Standard 1

No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Compliance

The proposed stormwater management system will be designed so that there is no untreated stormwater discharge in order to comply with Standard 1. Drainage from the Project site will be treated prior to discharging into Neponset River

Standard 2

Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

Compliance

The proposed stormwater management system will need to be designed so that the post-development discharge rates are equal to or less than the pre-development discharge rates in order to comply with Standard 2. Best Management Practices (BMPs) that slow runoff rates through storage and gradual release will be provided to meet this standard.

Standard 3

Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. The standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

Compliance

The proposed stormwater management system will include a groundwater recharge system and bioretention basins, which will be designed to increase the annual groundwater recharge from pre- to post-development conditions. The proposed infiltration system will be sized to provide the required recharge volume to the ground.

Standard 4

Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when: (a)

Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained; (b) Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and (c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

Compliance

The proposed stormwater management system will provide 80% TSS removal for stormwater runoff from all roof areas, parking lots, and other impervious areas to comply with Standard 4. The water quality volume will be equal to 0.5 inch over the entire impervious area of the post-development site. In addition, BMPs will be implemented into the long term pollution prevention plan to provide for 80% TSS removal.

Standard 5

For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot me completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the Proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act.

Compliance

Standard 5 is not applicable for the proposed Match Community Center project at 6 Tchapitoulas Street. The Project is not associate with Higher Potential Pollutant Loads (per the Policy, Volume 1, page 1-8).

Standard 6

Stormwater discharges within Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding

Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment.

Compliance

The Project site is not located within an area of critical environmental concern (ACEC). The Project is not associated with ACEC.

Standard 7

A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent possible. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

Compliance

Standard 7 is not applicable to the Match Community Day School Project. The Project is a new development.

Standard 8

A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

Compliance

A plan to control construction related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities will be developed and implemented in order to comply with Standard 8. A pollution prevention plan will be developed and will be incorporated as part of the design of this project and will to be implemented during site construction.

Standard 9

A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

Compliance

The proposed stormwater management plan will include a Long-Term Operation and Maintenance Plan in order to comply with Standard 9. The O&M Plan will include long-term BMP operation requirements and will be prepared to ensure proper maintenance and function of the system.

Standard 10

All illicit discharges to the stormwater management system are prohibited.

Compliance

The Project will need to submit an Illicit Discharge Compliance Statement verifying that no illicit discharges exist on the site in order to comply with Standard 10. Measures to prevent illicit discharges to the stormwater management system will also need to be included in the pollution prevention plan.

Anticipated Energy Needs

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Natural Gas Service

Presently there exist gas mains in both Poydras Street and Neponset Field Lane. A new natural gas service will be provided to the buildings from one of these two streets depending upon available pressure. Once final gas-fired equipment has been selected the Proponent will coordinate with the gas provider to obtain the service.

■

Electrical Service

Underground electrical service will be provided via proposed connections to the local utility company electrical distribution system on Poydras Street and Neponset Field Lane. The Proponent will coordinate with the local utility company to determine specific requirements, a connection point, and obtain appropriate approvals as the project design advances.

■

Telecommunications

The Proponent will select the telecommunications companies to provide telephone, cable, and data services to meet the needs of the Match Community Day Charter Public School. An underground telecommunications service will be provided via

proposed connections to the selected service providers system on Neponset Field Lane. Once the service providers are selected, the Proponent will coordinate with the service providers the location connection points and infrastructure requirements to service the building.

Protection of Utilities

Construction shall not interfere with or interrupt utilities which are to remain. It is the Contractor's responsibility to maintain all existing site utilities, except those noted to be abandoned and/or removed and disposed. The Contractor shall comply with Massachusetts General Laws Chapter 82, Section 40, as amended, which states that no one may excavate in the Commonwealth of Massachusetts except in an emergency without 72 hours notice, exclusive of Saturdays, Sundays, and legal holidays, to natural gas pipeline companies, and municipal utility departments that supply gas, electricity, telephone, or cable television service in or to the City of Boston where the excavation is to be made. The Contractor shall call "Dig Safe" at 1-888-DIG-SAFE. The location of all existing site utilities to remain will be marked and protected during construction.

Sustainable Design/Energy Conservation

The proposed HVAC energy conservation systems include gas-electric, packaged, single-zone, constant volume rooftop units. Each classroom will have a dedicated 3-4 ton capacity (1,200-1,600 CFM) rooftop unit with fixed minimum outdoor air, MERV 13 air filters and an outdoor air economizer. Janitor rooms, toilets, art rooms, locker rooms and copy rooms will have dedicated exhaust systems. The rooftop units' packaged programmable controllers will be utilized for space temperature control and to schedule occupied/unoccupied temperatures. The exhaust system(s) will be started and stopped by time clock. Controllability of systems shall meet LEED criteria.

Lighting design will be performance based and shall meet or exceed 25% better than code required light power densities overall. This will be achieved by using high efficiency fluorescent fixtures throughout the building. All exterior rooms with daylight will utilize daylight harvesting. Light fixtures in these rooms will include dimming photocells that will measure the light levels and dim the fixtures accordingly to the amount of daylight present in the room. Controllability of systems will meet LEED criteria.

Construction Coordination

The Proponent will continue to work and coordinate with the utility companies to ensure the compliance and integrity of the Project.

Conclusion

Proposed connections to the BWSC's water, sewer, and storm drain systems will be designed in conformance with the BWSC's design standards, sewer use and water distribution system regulations, and requirements for site plans. The site stormwater management system will be designed to meet DEP's Stormwater Management Standards which will be required for the Notice of Intent submission to the Boston Conservation Commission. The Proponent will submit to the BWSC a General Service Application and a site plan for review prior to construction. The site plan will include existing and proposed water mains, sanitary sewers, storm drains, telephone, gas, electric, steam, and cable television utilities. Any existing water, sewer, and drain services to be abandoned and/or demolished will be cut and capped at the water, sewer, and/or drain mains. The plan will include proposed service connections to these utilities.

7

Public Review Process

Match is requesting to build a permanent home in this location, a home that will be an institution in the community one-hundred-years from now. To that end, the Match School team takes the public review process very seriously and has reached out to numerous neighbors and community groups, as described below.

Community Groups and Organizations

Mike Larsson, the Chief Operating Officer of Match, has been personally spearheading the community process. The community process, which is still very much ongoing, has taken place over the last twelve months. It is supremely important to Match that the neighbors and those affected in any way by the Project have had a chance to meet Mike and members of his team.

Throughout the first phase of the process, Mike shared his interest in Match moving to the neighborhood, educated the neighbors about Match and the students, and learned about the concerns of the community. In that first phase, Mike met individually with Councilor Consalvo and his Chief of Staff Brian Clinton, Rep. Dorcena-Forry and her staff member Marie Gay, the residents at Neponset Field Lane (abutter), Mr. Eddie Anderson (abutter), Ms. Gladys Frias, (abutter), the Belnel Neighborhood Association, Ms. Edna Dunphy (co-lead of the Belnel Neighborhood Asssociation), Ms. Mukiya Baker-Gomez (co-lead of the Belnel Neighborhood Association), the East River Neighborhood Association, Todd Finard (owner of Shops at Riverwood) and spoke on the phone with Barbara Hamilton (head of the East River Neighborhood Association).

During these meetings, the three main concerns that arose about the Project were safety, traffic, and size. The school seeks to address these concerns in the following ways:

1. Safety: Match heard that neighbors were concerned about middle and high school students traversing through their neighborhood. The school seeks to address this concern in a number of ways. The first is by making neighbors

aware that any high school students at Match will have been with Match for 10 years. The first year that the school would have Match Community Day high school students would be 2019 and these freshmen would be the same students that are currently the 4th grade students. Match already has strong relationships with them and their families and is committed to continuing that work. The second way that Match seeks to address this concern is by holding the Match students accountable for being Match students whether they are on school grounds or not. The school will have a heavy staff presence down Poydras Street and onto River Street for those students taking the MBTA bus. All Match students wear a recognizable school uniform. Every neighbor will be given the cell phone numbers of leaders of Match, and can, and should, call any time there is a question about a Match student (or Match in general).

2. Traffic: The school heard that the neighbors were concerned that a school would negatively impact the River Street/Old River Street/Wachusett Street intersection. The neighborhood already believes that this intersection is unsafe. Described in greater depth in Chapter 4, *Transportation,* of this Expanded PNF, because of these concerns raised by the neighbors, Match has committed to significant off-site transportation infrastructure improvements, including a traffic light that would significantly improve the safety and wait time of members of the larger Belnel Village.
3. Size: Match heard from the abutters that they did not want a high-rise school. To meet these concerns, Match is committed to building only two-stories. It is believed this will be a significant improvement for neighbors.

City Representatives and Agencies

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Consultation with Boston Redevelopment Authority

The Proponent has met with the Boston Redevelopment Authority on four occasions. Most of these meetings were also attended by representatives from Boston Transportation Department, City Councilor Consalvo's office, and the Mayor's Department of Neighborhood Services.

■

Consultation with District 5 City Councilor and Other City Councilors

The Proponent had advised Councilor Consalvo of the fact that it has acquired the property and will be developing the project and met with the Councilor and his Chief of Staff Brian Clinton directly on multiple occasions. Councilor Consalvo's Representatives have also attended the Belnel Neighborhood Association Meeting on

at least two occasions. The Proponent will continue to keep the Councilor and others informed concerning the project and will consult with the Councilor concerning the project as it moves forward.

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Consultation with Mayor's Office of Neighborhood Services

The Proponent has been in contact with David McNulty of the Mayor's Office of Neighborhood Services about the Project and will continue to work with the Mayor's Office to address any concerns that may arise with respect to the Project.

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Consultation with Boston Transportation Department

The Proponent and select members of the Project team have conducted preliminary discussions with Bill Conroy, Project Manager, Boston Transportation Department (BTD) regarding the Proposed Project. The Proponent and the Project team will continue to work closely with the BTD to coordinate access issues and the scope of the required transportation analysis to evaluate potential Project impacts.

8

Project Certification

This Expanded PNF has been submitted to the BRA, as required by Article 80 of the Zoning Code, on the 19th day of September, 2013.

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