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Barney S. Heath
Director

PUBLIC HEARING/WORKING SESSION MEMORANDUM

DATE: June 26, 2020

MEETING DATE: June 30, 2020

TO: Land Use Committee of the City Council

FROM: Barney Heath, Director of Planning and Development
Neil Cronin, Chief Planner for Current Planning

CC: Petitioner

In response to questions raised at the City Council public hearing, the Planning Department is providing the following information for the upcoming public hearing/working session. This information is supplemental to staff analysis previously provided at the Land Use Committee public hearing.

PETITIONS #26-20 & #27-20 **355 and 399 Grove Street**

Petition #26-20 for a change of zone to Mixed Use 3/Transit Oriented District for portions of land located at 355 Grove Street (currently zoned BU-2) and 399 Grove Street (currently zoned BU-5), also identified as Section 42, Block 11, Lots 3 and 4

Petition #27-20 for a SPECIAL PERMIT/SITE PLAN APPROVAL construct a mixed use, transit-oriented development of residential units, office, retail, personal services, restaurant, hotel, and related commercial uses not to exceed 1,025,000 square feet of gross floor area, with residential uses comprising not less than 60% of the total gross floor area with a residential density of not less than 800 square feet per unit with not less than 560 units nor more than 620 units with special permit relief and/or waivers as follows: a development of more than 20,000 square feet of gross floor area, building height of up to 170 feet, buildings up to 11 stories, Floor Area Ratio of up to 2.5, beneficial open space of not less than 15%, increase of height of certain buildings with the Grove Street Area Corridor (to the extent necessary), and reduction in setback from Grove Street for certain buildings within the Grove Street Corridor Area (to the extent necessary); waiver of the sustainable development design standards and placement of a retaining wall greater than 4 feet in height within a setback; for-profit educational use, retail sales of over 5,000 square feet, restaurant with more than 50 seats, personal service use of over 5,000 square feet, place of amusement, health club on ground floor, animal services, hotel, bank up to and over 5,000 square feet, theatre/hall, laboratory/research facility, parking facility, accessory, multi-level, parking facility, non-accessory, single level; reduction of the residential parking requirement to 1.25 stalls per unit, reduction of the overall parking requirement by 1/3, and waiver of

parking stalls not to exceed 685 stall; and waivers to the requirements of parking facilities containing more than five stalls; waiver of the number, size, type, location, and design requirements, all at 355 and 399 GROVE STREET on land known as Section 42, Block 11, Lots 3, 4 and 4A, containing approximately 13.05 acres of land in districts zoned Mixed Use 3 Transit Oriented (MU3), BU2 (a portion to be rezoned to MU3), BU5 (to be rezoned to MU3). Ref: Sec. 4.2.2.B, 4.2.3, 4.2.4, 4.2.4.A.4, 4.2.4.B.3, 4.2.4.G.2, 4.4.1, 5.1.4, 5.1.4.A, 5.1.4.C, 5.1.8.B.1, 5.1.8.B.2, 5.1.8.B.4, 5.1.8.B.6, 5.1.8.D.1, 5.1.8.D.2, 5.1.9.B, 5.1.10.A.1, 5.1.10.B.3, 5.1.10.B.5, 5.1.12, 5.1.12.B.4, 5.1.13, 5.2, 5.2.13, 5.4.2.B, 5.12, 6.4.29.C.5, 7.3.3, 7.3.5, 7.4 of the City of Newton Revised Zoning Ordinance, 2017. Additionally, as to infiltration and inflow mitigation, an abatement of the infiltration/inflow mitigation fee pursuant to Section 29-170 of the City of Newton Revised Zoning Ordinance, 2017.

The Land Use Committee (the "Committee") opened the public hearings on these petitions on January 28, 2020; both public hearings remain open. This memorandum addresses transportation monitoring and transportation demand management, as well as sustainability, and public facilities of the so-called "Riverside Development" proposed for the subject parcels.

Background

The petitioners are requesting a change of zone for a portion of 355 Grove Street, currently the Massachusetts Bay Transportation Authority (the "MBTA") rail yard, and all of 399 Grove Street, currently the Hotel Indigo, (the "Site") to the Mixed Use 3/Transit Oriented Zone (the "MU-3/TOD zone"). The petitioners are also seeking special permits to allow a ten-building development on site. The development would contain 582 dwelling units, 253,827 square feet of office space, of which 7,500 square feet would be dedicated to the MBTA, 150 hotel rooms, and 38,895 square feet of ground floor commercial space (the "Project").

Post-Construction Monitoring

At its April 2, 2018 hearing, the Committee discussed how the Project would be held to a maximum weekday evening peak hour trip count and what mitigation(s) would be required if the measured trips exceeded the projected trips by more than 10 percent. Because the Site also contains a transit station, the Planning Department, with the help of Green International Affiliates, Inc. ("Green"), put forth a methodology to deduct the trips associated with the transit station. In summary, the methodology used projections from the Boston Region of the Massachusetts Municipal Planners Organization; the chart below details how the cap of 696 weekday evening peak hour Project trips would not change, but the trips associated with the transit station would grow in accordance with the projections.

Table I: Total Trips for the Weekday Evening Peak

Trip Type	2025	2026	2027	2028	2029	2030	2031	2032
Project	696	696	696	696	696	696	696	696
Transit	421	427	432	438	443	449	455	461
Total	1117	1123	1128	1134	1149	1145	1151	1157

Given the number of opportunities a vehicle could access the Site for the transit station (use the transit square, the short-term parking in the ground-floor of the garage, or the on-street parking), the Planning Department believed this was the simplest method to conduct the post-construction monitoring. In contrast, the petitioners have put forth a methodology that seeks to obtain a more accurate trip count for the transit station and to account for vehicles passing through the site to other destinations, e.g. a vehicle traveling from Auburndale to points north may take a right at the Grove Street entrance and then exit the Site at the southern boundary before turning onto interstate 95 northbound **(Attachment B)**. The petitioner's methodology would use license plate recognition technology in conjunction with data from the MBTA-dedicated portion of the garage to capture MBTA users entering and exiting the garage. Additionally, field observations in the short-term parking area in the ground floor of the garage and in the transit square would capture pickup and drop-off activity. To capture the cut-through trips, cameras at both the Grove Street entrance and at the southern entrance between Buildings 1 and 2 would track vehicles, and depending on the time it took a vehicle to get from one point to another, the trip would be counted as a Project trip or a cut-through trip.

The Planning Department and Green believe that the petitioners' methodology will result in a more accurate reflection of MTBA trips and any cut-through trips and are therefore supportive of the approach **(Attachment C)**. However, the Planning Department and the Department of Public Works will be selecting a transportation engineering firm, paid for by the petitioners, to design the final methodology and to conduct the monitoring. As such, the petitioners will be required to provide the City with data from the garage to count the MBTA trips. Staff also asked that the petitioners provide documentation as to the capacity of the Project portion of the garage to gauge whether overflow Project-parking would be using the MBTA parking. The petitioners have agreed to both requests.

Transportation Demand Management

The petitioners also presented a proposal, beyond their previous commitments, to pilot a shuttle service between the Site and the Auburndale Commuter Rail Station for six months. The shuttle would complete six trips per day Monday through Friday and would be open to the public. The Planning Department is supportive of the shuttle service because it will increase transit choice and reinforce the site's identity as a transit station.

In the event the number of measured trips exceeds projections, the petitioners will be required to implement mitigation measures. An important aspect of any mitigation measure will be understanding how residents, employees, and patrons get to and from the Site. The petitioners are proposing to conduct surveys to collect this information and to inform which measure would be most effective, but the current Transportation Demand Management Plan (the "TDM Plan") does not state when or how often the surveys will be administered. The Planning Department suggests that this information be included in the final TDM plan. The Planning Department also suggests that the monitoring provisions of the TDM Plan, such as the number of transit reimbursement issued, car share and bike share usage data, and parking data be submitted annually rather than every 18 months.

Sustainability

At the hearing on April 9, 2020, the Committee discussed the petitioners' sustainability plan including the commitments to achieving certain rating systems e.g. Passive House or Leadership in Energy and Environmental Design for certain buildings. The petitioners presented a new commitment which was to install photo voltaic ("PV") panels on portions of roofs to offset 25 percent of the house load (hallways, tenant amenity spaces, and lobbies) of the passive house buildings. Such commitment is included in the revised sustainability narrative **(Attachment D)**. The petitioners' have also agreed to study the feasibility of increasing the number of PV panels to offset more than 25 percent of the house load as the design progresses. The Planning Department is supportive of the petitioners' commitment and the sustainability plan as a whole.

Public Facilities

In accordance with the MU-3/TOD zone, the petitioners provided a memorandum regarding the adequacy for public facilities **(Attachment E)**. The Engineering Division of Public Works and Horsley Witten have reviewed the memorandum and agree that the reports are either not applicable or the petitioners' plans indicate compliance, such as the cross-connection control program. The MU-3/TOD zone also requires look-back provisions to ensure the actual usage of water, sewer, and stormwater are consistent with projections. The calculated sewer flow for the Project is 79,961 gallons per day (29,185,765 gallons per year) based on the number of bedrooms and the square footage of the nonresidential uses. The Engineering Division assumes all water supplied to the Project will enter the sewer system. As a result, the water demand is also 79,961 gallons per day. To determine whether actual usage exceeds projections, the Engineering Division of Public Works will assess the annual water use and sewage generation one year from the Project reaching 95% residential occupancy. This post-occupancy assessment shall be based upon the actual generation as indicated in the meter reading report for the 365 days prior to the measurement date for all Project buildings less the meter readings from any irrigation or other non-potable water uses. In the event that the annual reading exceeds 79,961 gallons per day (29,185,765 gallons per year) by more than 10% during either of the two measurements, the Petitioner shall implement measures to reduce the water use and sewage generation from the project. Such measures may include, but not be limited to, conducting a water audit, providing educational information regarding water conservation, and exploring more efficient fixtures.

Regarding stormwater, majority of the stormwater will be directed to the infiltration system ("P101") beneath Buildings 9 and 10. P101 is designed to infiltrate the one-year storm in accordance with the Massachusetts Department of Environmental Protection standards. Should this system not infiltrate stormwater as designed, the system will overflow into the City's 60-inch pipe and then discharge into the Charles River. To ensure this system is working as designed, the petitioners will install a flow measuring device to monitor any overflow from P101 into the City's 60-inch pipe. For two years following completion of the Project (95 percent residential occupancy, the petitioners will submit a report from a professional engineer summarizing the flow from P101 into the City's pipe and certify whether the system is operating as designed. If the system is not performing as designed, the petitioners shall be required to inspect the system and undertake any repairs.

The petitioners have also agreed to establish a sampling program to assist with the City's Multi Separate Storm Sewer System (the "MS4") permit with the United States Environmental Protection Agency regarding improving water quality discharging into the Charles River. The petitioners have agreed to collect samples at two locations: in the City's 60-inch pipe at the eastern boundary, adjacent to Grove Street; and at the petitioners' 48-inch pipe that connects to the City's 60-inch pipe. These two locations will provide the City with data on the levels of Total Suspended Solids ("TSS") and Total Phosphorus ("TP") in the City's pipe before it enters the Site, and the levels of TSS and TP leaving the site. The petitioners have agreed to collect these samples during construction and for two years after construction is complete.

Cost of Construction & the Building Permit Fee

The Planning Department was asked to provide an opinion on the petitioners' estimated cost to construct the Project, which was $175,000,000 to $200,000,000. The Planning Department does not have any expertise in estimating the cost of construction and our on-call consultants do not provide estimates due to potential conflicts of interest.

The City of Newton's building permit fee is $20 per thousand. The contractor is required to provide the cost of the project and the corresponding fee on the building permit application. If the cost is in question, Inspectional Services may ask the contractor to provide more information as to the cost of each aspect of the project, e.g. foundation, framing. Inspectional Services may also consult with published standards to assist in determining the fee. Once agreed upon, the fee is required prior to the issuance of the permit.

Prior to the issuance of a final certificate of occupancy, the owner of the Project is required to submit a *Final Cost Affidavit* certifying the final cost. In some instances, the final cost affidavit contains an amount greater than the cost provided on the application. In such cases, Inspectional Services collects a fee of $20 per thousand on the overruns. In the case of Riverside, it is expected that the petitioners will submit building permits for each building separately. Therefore, each building will produce its own fee and its own final cost affidavit.

To provide some reference, the Planning Department created the below table comparing the Project with recent developments in Newton and in surrounding communities.

Table II: Cost per Square Foot Comparison

Project	Square Feet	Cost to Construct	Cost/Sq. Ft
Riverside (Estimated)	1,025,000	$ 175,000,000.00	$ 170.73
Washington Place	299,170	$ 43,905,875.00	$ 146.76
Riverdale (Estimated)	296,170	$ 51,916,801.00	$ 175.29
Dunstan East (Estimated)	419,618	$ 86,435,537.00	$ 205.99
Multi-Family Development (Waltham)	335,600	$ 44,792,681.00	$ 133.47
Multi-Family Development (Needham)	475,000	$ 66,397,000.00	$ 139.78

ATTACHMENTS

Attachment A: Tentative Schedule, dated June 26, 2020
Attachment B: VHB memorandum, dated June 12, 2020
Attachment C: Green Memorandum, dated June 26, 2020
Attachment D: Sustainability Narrative, dated June 9, 2020
Attachment E: Public Facilities Memorandum, dated June 16, 2020

Attachment A

TENTATIVE LAND USE COMMITTEE SCHEDULE

June 26, 2020

355 AND 399 GROVE STREET "RIVERSIDE"

*This schedule is tentative. The Land Use Committee is scheduled to meet on the below dates; however, the topics are subject to change.

Meeting Date	Topic	Description
June 30, 2020	Transportation, Public Facilities, Sustainability	Post-Construction Monitoring of trips and Public Facilities, Sustainability Commitments
July 14, 2020		
July 28, 2020		

Memorandum

To: Neil Cronin
Planning & Development,
City of Newton

Date: June 12, 2020

Project #: 10865.03

From: Randall Hart, Principal
Matthew Duranleau, EIT

Re: The Station at Riverside
Supplement to May 28th Response to Comments Memorandum

Vanasse Hangen Brustlin, Inc. (VHB) has prepared this supplemental memorandum as a follow up to our May 28, 2020 Peer Review (Green International Affiliates, Inc.) Response to Comments memorandum on traffic and in response to comments/questions at recent hearings. The memorandum includes discussion of traffic monitoring and traffic credits for MBTA traffic and cut-through activity as well as graphics that present traffic volumes at each study area intersection for existing, no-build and build conditions.

Traffic Monitoring Initiatives

As outlined in that memorandum, TDM monitoring will be required on Site to ensure that a maximum peak hour trip threshold is not exceeded for the Project. As noted in VHB's response to the comment on TDM monitoring, there is potential for cut through activity on the Riverside Site with the proposed new Route 128/I-95 northbound ramp configuration and the introduction of bi-directional travel on Recreation Road. The Proponent has recognized this potential for cut-through traffic during the development of the Project and as a result cut-through activity, to some degree, has been incorporated into the Build Condition traffic volume network distribution, which is explained in more detail below.

Motorists on Grove Street to the north of the Site wishing to get onto Route 128/I-95 northbound, the MassPike (I-90), or Recreation Road only have a single option today; driving on Grove Street southbound and then taking a right-turn just past the Indigo Hotel onto the ramp for the Collector-Distributor Road to gain entry. With the proposed Project in place and the associated infrastructure improvements, those same motorists will have the ability to take that same path, with slight reconfiguration, or they will also be able to gain the same access by cutting through the Project Site, thereby avoiding one traffic signal at the proposed Grove Street at Grove Street Extension intersection. While we don't see this as a particularly attractive movement due to the pedestrian and vehicular conflicts that will exist on Site during peak hours, we acknowledge that it may happen to some degree. The same may be true for the opposite direction, for motorists that are heading to Riverside Office Park or other destinations to the north on Grove Street in the morning, for instance. If motorists are coming from Route 128/I-95 northbound or from Recreation Road, they will have the same two options.

With this in mind, VHB assessed the volume of traffic that travel between Grove Street north of the Site and the Route 128/I-95 northbound ramps that makes these movements today and assumed that 50-percent of that traffic would cut through the Site. We also assumed that 50-percent of the new traffic that will travel between the extension of a two-way Recreation Road and Grove Street north of the Site would cut through the Site. While It is likely that these percentage would be less than 50-percent, for the purpose of providing a conservative analysis the 50-percent value

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Memorandum

was used in the Build Condition operational analyses. This equates to approximately 145 cut-through vehicle trips in the northbound direction and 55 cut-through vehicle trips in the southbound direction during the weekday morning peak hour, and approximately 165 cut-through vehicle trips in the northbound direction and 135 cut-through vehicle trips in the southbound direction during the weekday evening peak hour. As a result of this potential activity and the cap on project traffic generation with penalty if exceeded, it is necessary to identify the cut-through activity that is realized at the time of the post construction traffic and TDM monitoring.

Since any cut through activity that may occur is traffic that is already on the road (today), credit for such activity will be necessary during the counting periods. The method of counting cut through will be determined at the time of the counts as technology is constantly evolving that could potentially be used, such as Bluetooth tracking. If technology is not available or appropriate, a traditional license plate tracking study or video camera tracking can be applied as necessary to establish this credit.

In addition to cut-through traffic as it relates to increased traffic to the site, it will be equally important for the TDM monitoring program to be able to decipher between MBTA related traffic generation and the Riverside Development traffic generation. Parking in the upper levels of the garage will include a full segregated section dedicated to MBTA commuters. This section will have a distinct rate structure that will significantly incentivize commuters to park solely in the MBTA spaces. The use of the garage and its fee collection will be based on license plate recognition (LPR) technology that will track and catalog the trips into and out of the garage, its various segments and the duration of the vehicle stay. The daily transaction data will be used to determine which portion of the trips into the garage were MBTA-related and which were project related.

Furthermore, it will be necessary to capture any MBTA traffic generation related to 'Kiss and Ride' activity. Since gathering useful data will be difficult using standard counting techniques, we anticipate that in-person field observations will be the preferred method for gathering this data. Refer to that attached Figure which identifies the specific locations where in-person counters will be stationed during the count period and they include the MBTA Transit Loop, and the short-term parking in the first and second floor of garage. The data gathered by the garage and field observations, as stated previously, will be used to establish the MBTA traffic credit.

Traffic Increases at Project Study Area Intersections

In response to a request by City Councilor Markowitz at a land use hearing on June 2, 2020, VHB has prepared traffic volume figures that presents existing and future traffic volumes (total intersection) at all study area intersections during the Am, Pm, and Saturday midday peak hour periods. Please see the attached figures for volume information by location.

8
EX - 1935
NB - 2045 ▲ 110
BD - 2080 ▲ 35

9
EX - 1540
NB - 1625 ▲ 85
BD - 1625 ▲ 0

10
EX - 740
NB - 775 ▲ 35
BD - 830 ▲55

11
EX - 500
NB - 525 ▲ 25
BD - 580 ▲55

12
EX - 1095
NB - 1165 ▲ 70
BD - 1205 ▲ 40

13
EX - 3750
NB - 3965 ▲ 215
BD - 3975 ▲ 10

14
EX - 3695
NB - 3925 ▲230
BD - 3950 ▲ 25

15
EX - 3400
NB - 3610 ▲ 210
BD - 3635 ▲25

16
EX - 970
NB - 1025 ▲ 55
BD - 1160 ▲ 135

17
EX - 1135
NB - 1195 ▲ 60
BD - 1315 ▲ 120

18
EX - 370
NB - 390 ▲ 20
BD - 405 ▲ 15

19
EX - 455
NB - 480 ▲ 25
BD - 495 ▲ 15

20
EX - 1185
NB - 1250 ▲ 65
BD - 1345 ▲ 95

21
EX - 1005
NB - 1060 ▲ 55
BD - 1085 ▲ 25

22
EX - 2550
NB - 2705 ▲ 155
BD - 2730 ▲ 25

23
EX - 1600
NB - 1685 ▲ 85
BD - 1710 ▲ 25

24
EX - 1855
NB - 1975 ▲ 120
BD - 1975 ▲ 0

25
EX - 1410
NB - 1510 ▲ 100
BD - 1580 ▲ 70

26
EX - 2340
NB - 2495 ▲55
BD - 2525 ▲ 30

27
EX - 3255
NB - 3450 ▲ 195
BD - 3480 ▲ 30

28
EX - 2415
NB - 2590 ▲ 175
BD - 2660 ▲ 70

29
EX - 2935
NB - 3160 ▲ 225
BD - 3230 ▲ 70

30
EX - 1540
NB - 1660 ▲ 120
BD - 1710 ▲ 50

31
EX - 3740
NB - 3960 ▲ 220
BD - 3970 ▲ 10

32
EX - 3545
NB - 3760 ▲ 215
BD - 3775 ▲ 15

33
EX - 2620
NB - 2775 ▲ 155
BD- 2790 ▲ 15

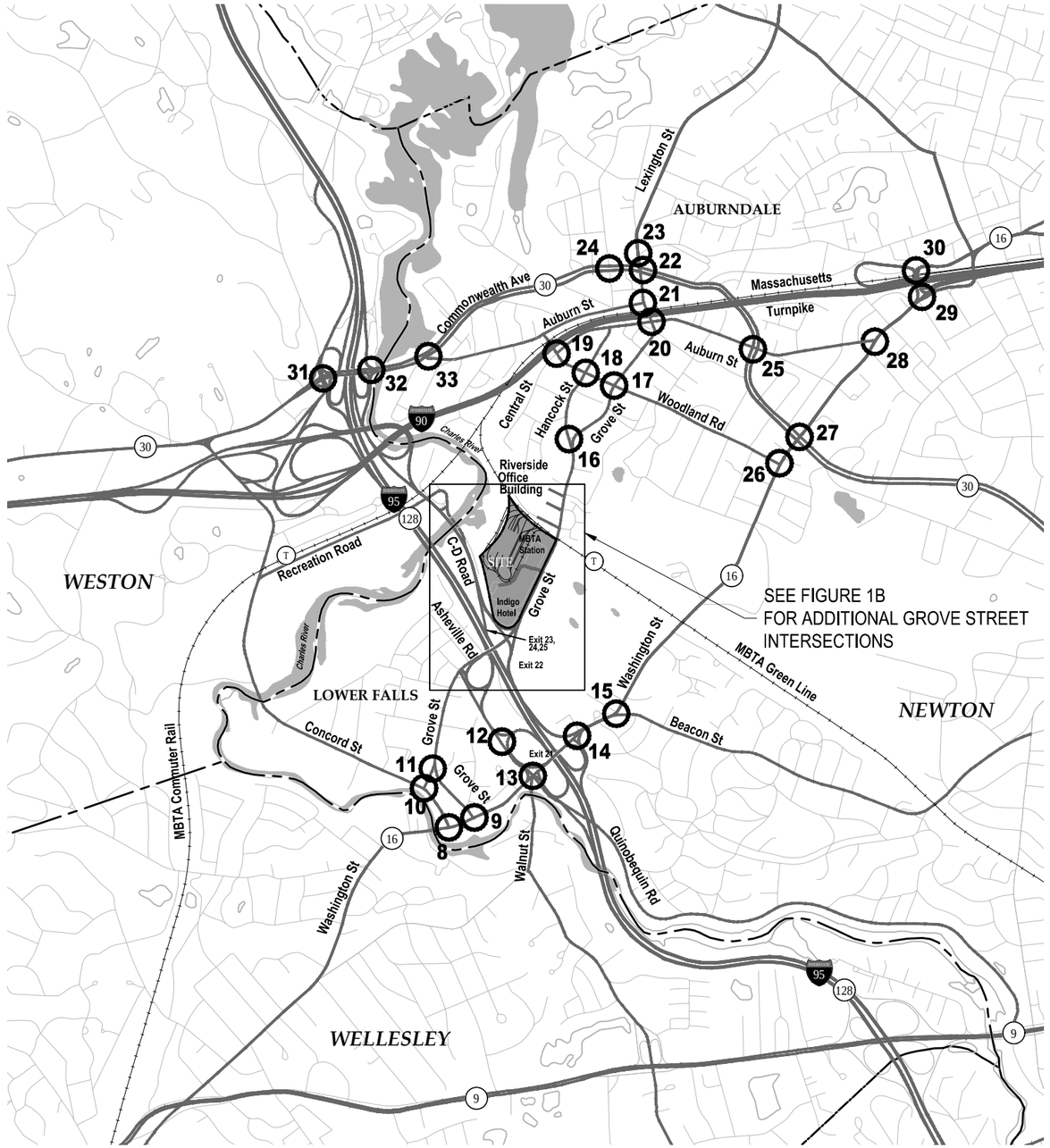
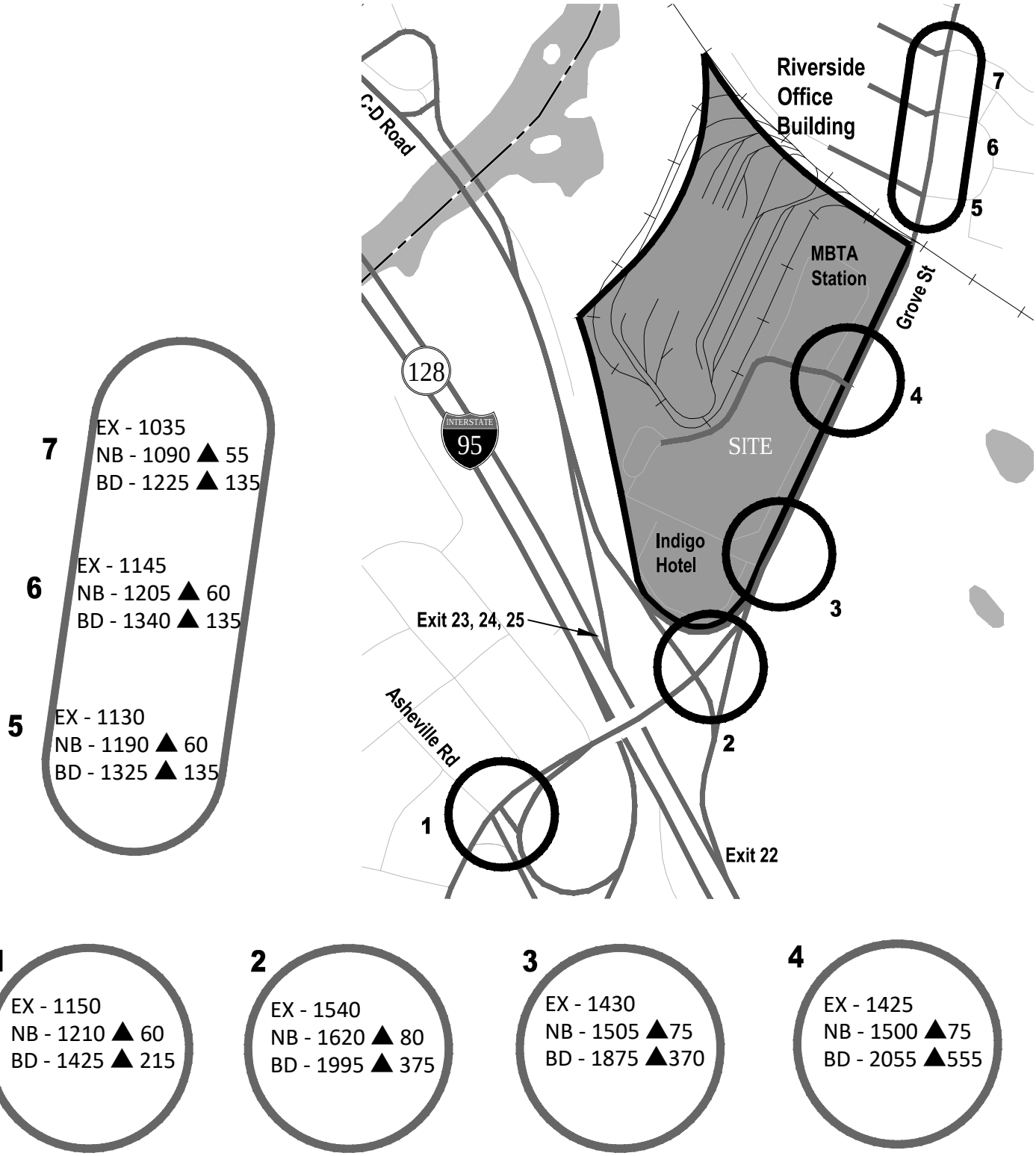


Figure 1A
Vehicular Volume Totals and Deltas
Weekday Morning Peak Hour Traffic Volumes

The Station at Riverside
Newton, Massachusetts



0 250 500 Feet

Figure 1B
Vehicular Volume Totals and Deltas
Weekday Morning Peak Hour Traffic Volumes

The Station at Riverside
Newton, Massachusetts

8
EX - 2030
NB - 2145 ▲ 115
BD - 2185 ▲ 40

9
EX - 1690
NB - 1785 ▲ 95
BD - 1785 ▲ 0

10
EX - 690
NB - 730 ▲ 40
BD - 790 ▲ 60

11
EX - 390
NB - 415 ▲ 25
BD - 475 ▲ 60

12
EX - 1490
NB - 1575 ▲ 85
BD - 1675 ▲ 100

13
EX - 4210
NB - 4450 ▲ 240
BD - 4465 ▲ 15

14
EX - 4140
NB - 4395 ▲ 255
BD - 4415 ▲ 20

15
EX - 3855
NB - 4085 ▲ 230
BD - 4105 ▲ 20

16
EX - 905
NB - 960 ▲ 55
BD - 1090 ▲ 130

17
EX - 1095
NB - 1150 ▲ 55
BD - 1265 ▲ 115

18
EX - 345
NB - 360 ▲ 15
BD - 375 ▲ 15

19
EX - 475
NB - 500 ▲ 25
BD - 515 ▲ 15

20
EX - 1160
NB - 1220 ▲ 60
BD - 1305 ▲ 85

21
EX - 1030
NB - 1085 ▲ 55
BD - 1105 ▲ 20

22
EX - 2620
NB - 2795 ▲ 175
BD - 2815 ▲ 20

23
EX - 1695
NB - 1805 ▲ 110
BD - 1825 ▲ 20

24
EX - 1790
NB - 1910 ▲120
BD - 1910 ▲ 0

25
EX - 1390
NB - 1475 ▲ 85
BD - 1540 ▲ 65

26
EX - 2690
NB - 2860 ▲ 170
BD - 2890 ▲30

27
EX - 3505
NB - 3720 ▲ 215
BD - 3750 ▲ 30

28
EX - 2805
NB - 2985 ▲ 180
BD - 3050 ▲ 65

29
EX - 3160
NB - 3385 ▲ 225
BD - 3450 ▲ 65

30
EX - 1730
NB - 1855 ▲ 125
BD - 1885 ▲ 30

31
EX - 3220
NB - 3410 ▲ 190
BD - 3415 ▲ 5

32
EX - 3010
NB - 3195 ▲ 185
BD - 3210 ▲ 15

33
EX - 2565
NB - 2725 ▲160
BD- 2740 ▲ 15

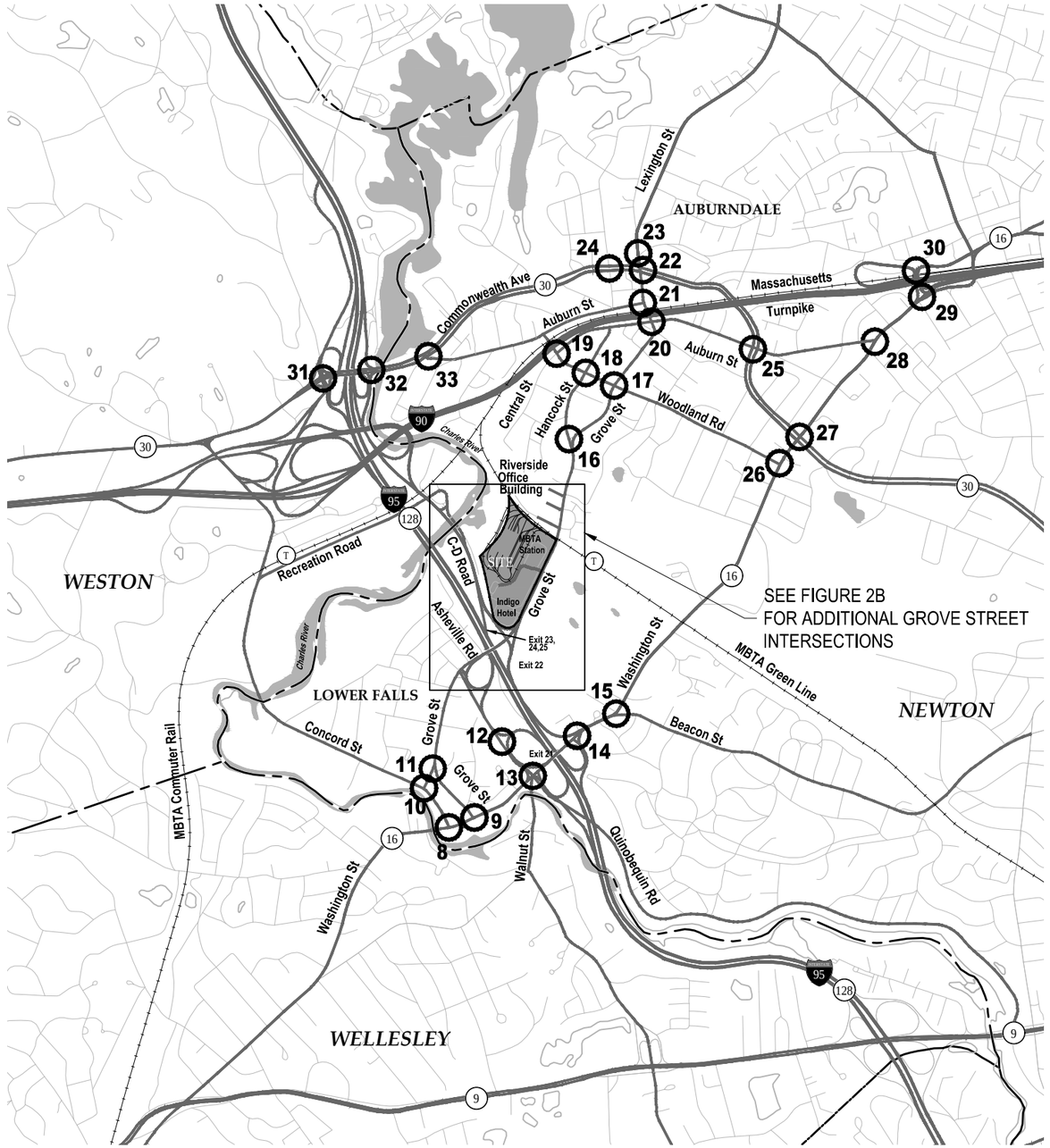


Figure 2A
Vehicular Volume Totals and Deltas
Weekday Evening Peak Hour Traffic Volumes

The Station at Riverside
Newton, Massachusetts

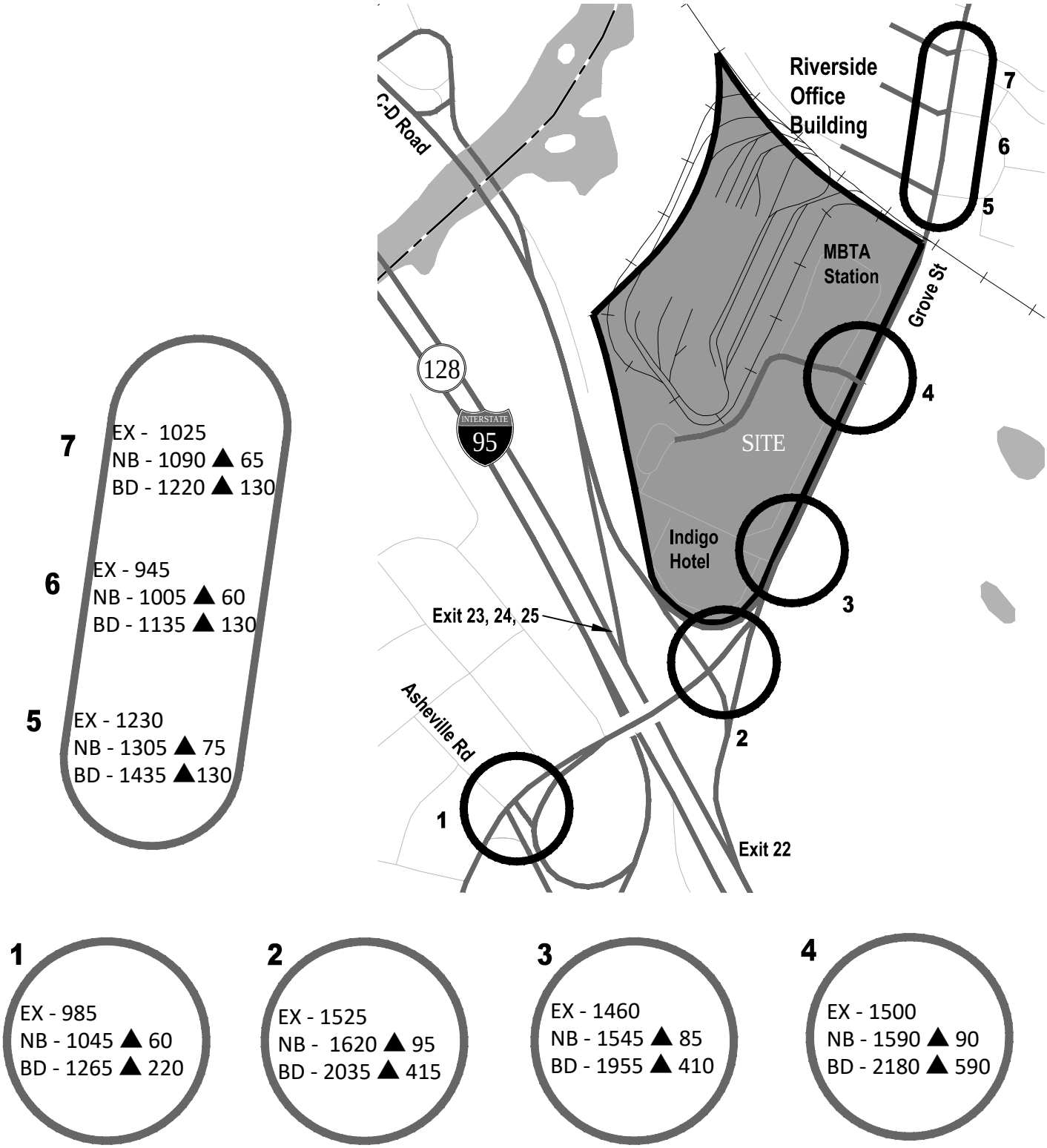


Figure 2B
Vehicular Volume Totals and Deltas
Weekday Evening Peak Hour Traffic Volumes

The Station at Riverside
Newton, Massachusetts

8
EX - 1345
NB - 1430 ▲ 85
BD - 1465 ▲ 35

9
EX - 1145
NB - 1210 ▲65
BD - 1210 ▲ 0

10
EX - 345
NB - 365 ▲ 20
BD - 420 ▲ 55

11
EX - 160
NB - 170 ▲ 10
BD - 220 ▲ 50

12
EX - 895
NB - 950 ▲ 55
BD - 1010 ▲ 60

13
EX - 2455
NB - 2605 ▲ 150
BD - 2615 ▲ 10

14
EX - 2530
NB - 2700 ▲ 170
BD - 2720 ▲ 20

15
EX - 2280
NB - 2445 ▲ 165
BD - 2465 ▲ 20

16
EX - 465
NB - 500 ▲ 35
BD - 625 ▲ 125

17
EX - 560
NB - 590 ▲ 30
BD - 705▲ 115

18
EX - 140
NB - 145 ▲ 5
BD - 160 ▲ 15

19
EX - 190
NB - 195 ▲ 5
BD - 205 ▲ 5

20
EX - 605
NB - 640 ▲ 35
BD - 725 ▲ 85

21
EX - 650
NB - 690 ▲ 40
BD - 710 ▲ 20

22
EX - 2150
NB - 2315 ▲ 165
BD - 2335 ▲ 20

23
EX - 1375
NB - 1485 ▲ 110
BD - 1505 ▲ 20

24
EX - 1595
NB - 1710 ▲ 115
BD - 1710 ▲ 0

25
EX - 1020
NB - 1095 ▲ 75
BD - 1150 ▲ 55

26
EX - 1780
NB - 1910 ▲ 130
BD - 1940 ▲ 30

27
EX - 2320
NB - 2480 ▲ 160
BD - 2510 ▲ 30

28
EX - 1760
NB - 1900 ▲ 140
BD - 1965 ▲ 65

29
EX - 2150
NB - 2325 ▲ 175
BD - 2390 ▲ 65

30
EX - 1150
NB - 1250 ▲ 100
BD - 1290 ▲ 40

31
EX - 2110
NB - 2245 ▲ 135
BD - 2250 ▲ 5

32
EX - 2150
NB - 2300 ▲ 150
BD - 2315 ▲ 15

33
EX - 1835
NB - 1965 ▲ 130
BD- 1980 ▲ 15

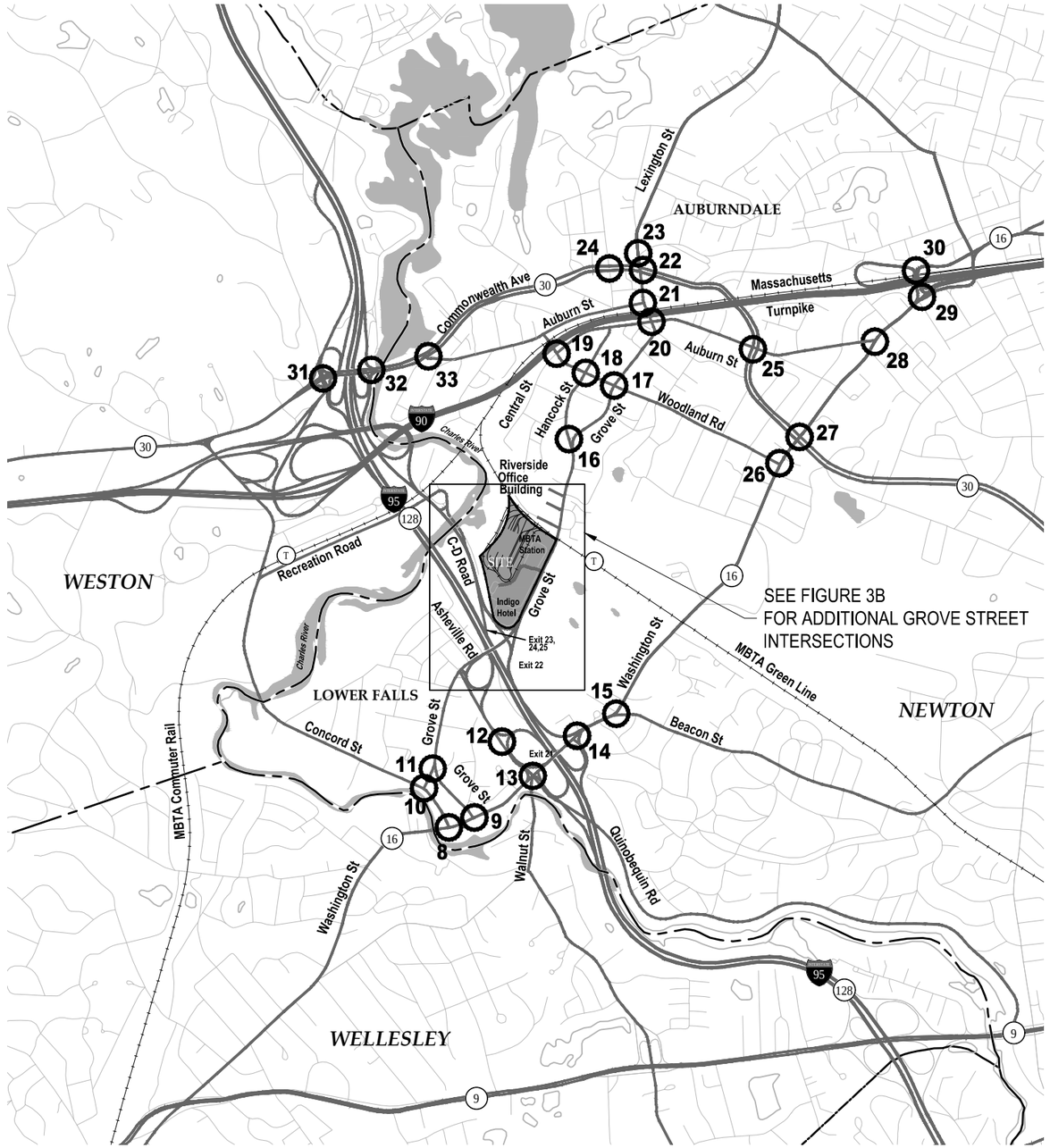
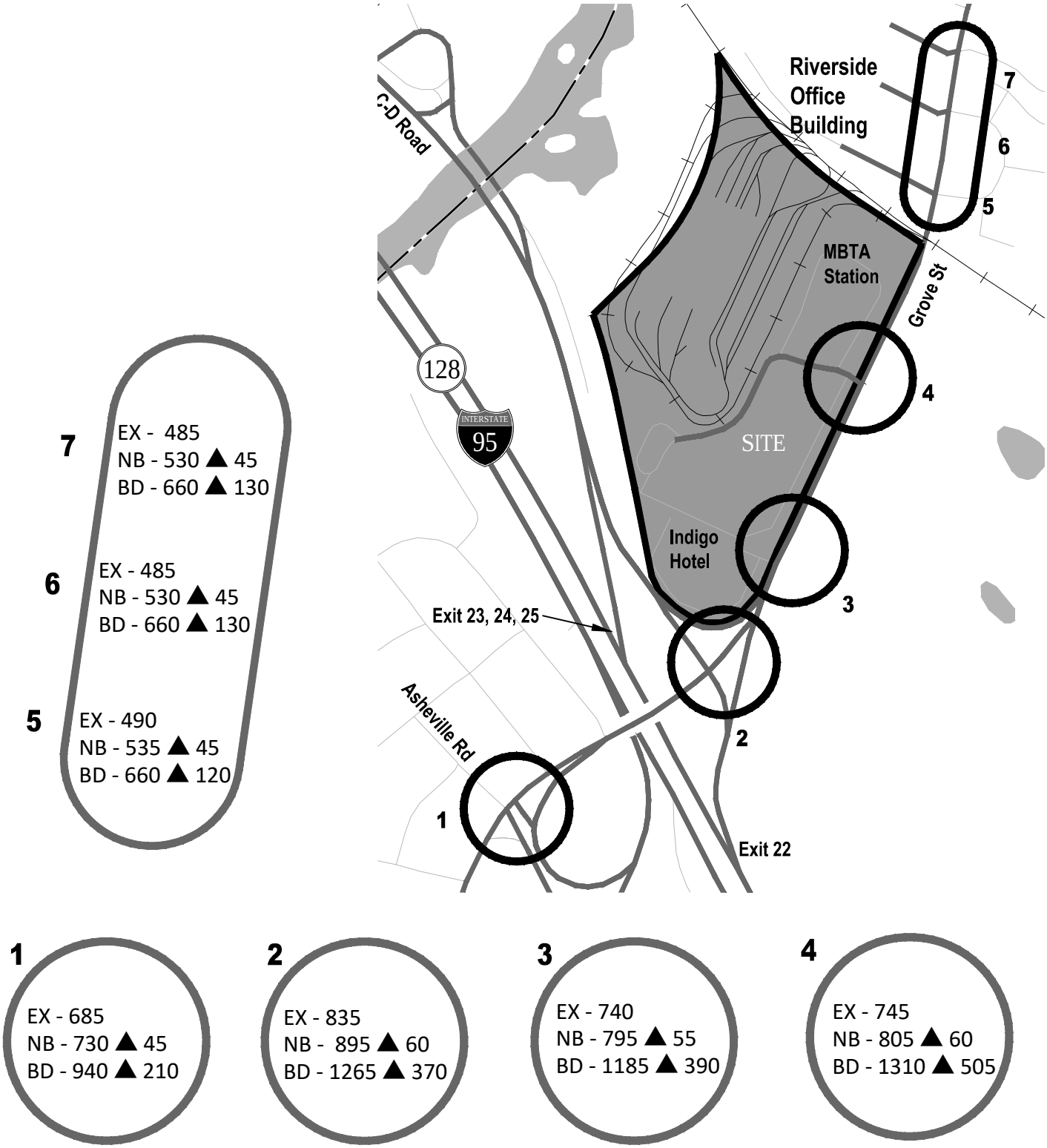


Figure 3A
Vehicular Volume Totals and Deltas
Saturday Midday Peak Hour Traffic Volumes

The Station at Riverside
Newton, Massachusetts



0 250 500 Feet

Figure 3B
Vehicular Volume Totals and Deltas
Saturday Midday Peak Hour Traffic Volumes

The Station at Riverside
Newton, Massachusetts

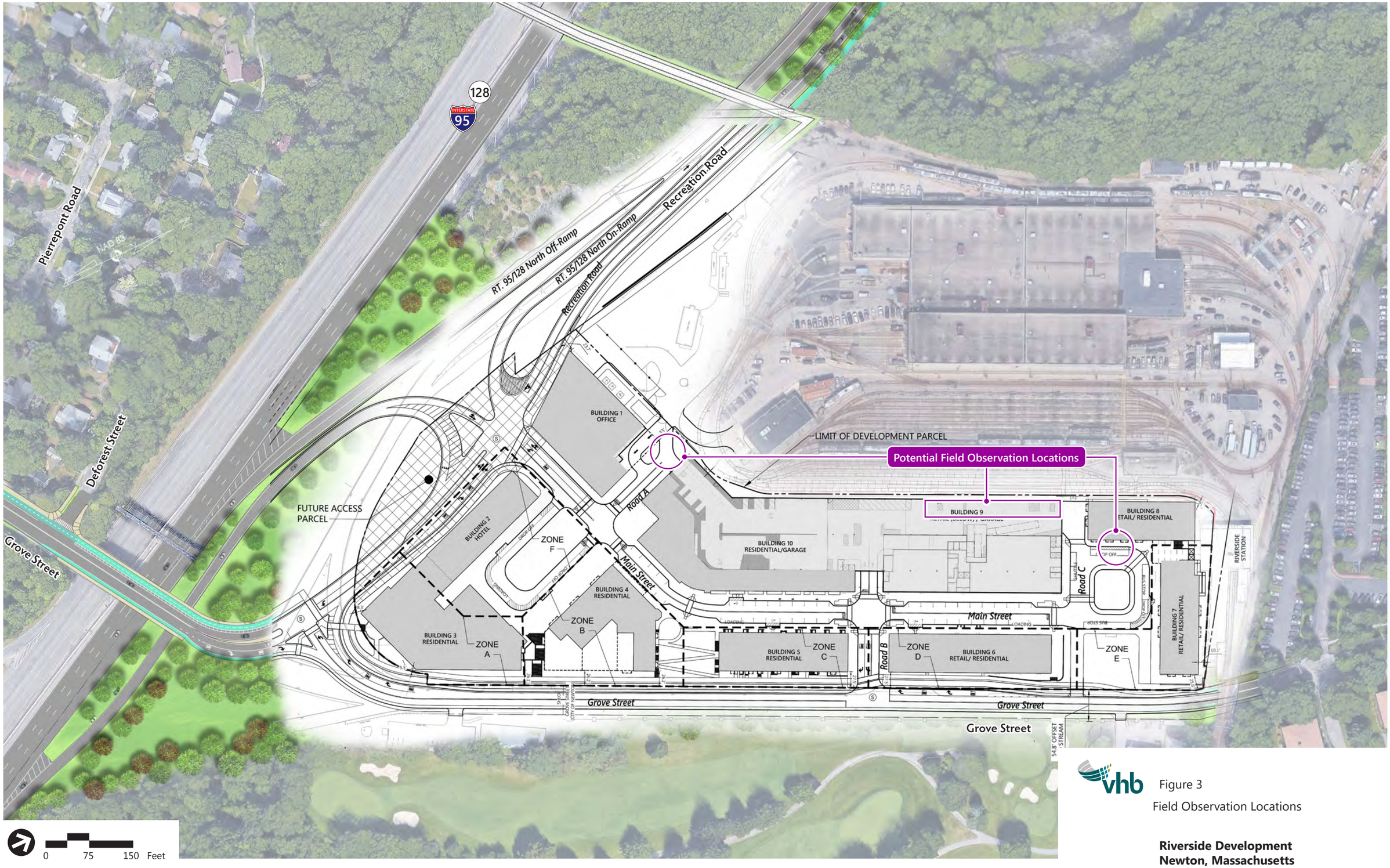


Figure 3
Field Observation Locations

Riverside Development
Newton, Massachusetts

GREEN INTERNATIONAL AFFILIATES, INC.
239 LITTLETON ROAD, SUITE 3 WESTFORD, MA 01886
TEL: (978) 923-0400 FAX: (978) 399-0033

MEMORANDUM

To:	Neil Cronin, Planning and Development Department, City of Newton
From:	Green International Affiliates, Inc. (Green)
Date:	June 26, 2020
Project Name:	Riverside Station
Project Number:	Green No. 18078
Subject:	Transportation Peer Review Response Letter

On behalf of the City of Newton (the City), Green International Affiliates, Inc. (Green) is submitting this memorandum of the findings from our review of additional material regarding traffic monitoring and trip distribution for the proposed "The Station at Riverside Redevelopment" adjacent to Riverside Station, in Newton, MA. This review included the following document submitted in support of the proposed project:

- Memorandum titled "Supplement to May 28th Response to Comments Memorandum", prepared by VHB, dated June 12,2020.

Green offers the following takeaways resulting from our review of the above document:

1. In order to accurately reflect the number of trips that are related to the proposed development, the developer is proposing to reduce the counted trips by the amount of cut through traffic that may be utilizing the proposed Main Street to access I-95 and Route 128. In general, we agree that this reduction is justified as these are not project trips.

2. The developer is proposing to measure the number of cut through trips utilizing license plate tracking or future, yet-to-be-determined technology such as advanced Bluetooth tracking. It is our opinion that license plate tracking is feasible and realistic for measuring the cut-through traffic. In the event that a more efficient technology is available in the future, the option to switch to that method should remain available.

3. The developer requests that the city measure the real-time MBTA trips in order to provide a more accurate reflection of the project trips, rather than utilize the projections provided by the estimated growth rate. In order to achieve this, the developer must provide the MBTA parking count for the PM peak hour from the garage, as well as confirmation that the developer portion of the garage was not full at the time of the count. In addition, an in-person count of the MBTA transit plaza and pick-up/drop-off area would be conducted to supplement the data from the garage. It is our opinion that this is a feasible alternative to utilizing the MBTA projections, with these criteria met.

4. The memorandum provided a figure showing the increase in traffic at study area intersections during the peak hours. These trips represent the combination of all uses, residential, retail, office and hotel. While the individual uses have different trip distribution patterns, the figures provided show the combined effect on the roadway network. During the three peak hours, 210 – 220 new vehicle trips will be utilizing the new roundabout on Grove Street, 130-135 trips will be entering and exiting the site on Grove Street to the north, and a total of 370 – 415 trips will be entering from the Grove Street at Grove Street Extension intersection (including the trips utilizing the new roundabout). The developer should explain or correct the discrepancy shown on Figure 3B, where 10 vehicle trips disappear between Intersection 6 and Intersection 5, during the Saturday Peak Hour.

If either the City staff or the Applicant's engineer would like to discuss any of these comments further, please feel free to contact me at ctobias@greenintl.com.

Sincerely,
Green International Affiliates, Inc.

Corinne Tobias, P.E., PTOE
Transportation Planning Group

cc: W. Wong, Green
W. Scully, Green

Sustainability Strategic Plan

Riverside Station Mixed-Use Redevelopment
Newton, MA
June 9~~February 25~~, 2020

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PROJECT SUSTAINABILITY GOALS

The Riverside Station Mixed-Use Redevelopment project (the "Riverside Development") presents a unique and generational opportunity to transform the sprawling automobile parking lot located at the Riverside MBTA multi-modal transit terminal. The proposed project will create a compact, walkable, and transit-oriented development that will create a new energy-efficient neighborhood. It will also substantially improve and reduce the impacts to the surrounding environment created by the existing parking facility by reducing the amount of paved areas and incorporating green infrastructure as recommended in the City of Newton's *Climate Change Vulnerability Assessment and Action Plan*. By creating a mixed use~~dense~~ community adjacent to multiple modes of transit, the project will reduce the automobile dependency of both new residents and commercial tenants.

In addition to both minimizing environmental impact and improving access to transit, indoor environmental air quality and occupant comfort are at the core of the community vision adopted by the design team for the Riverside Development. To implement these broad sustainability principles, the project will incorporate the Green Newton *Green Building Principles* including minimizing building operating energy by methods that include Passive House design principles, minimizing embodied carbon, incorporating all-electric mechanical systems, and minimizing the carbon footprint for transportation. These standards dovetail with the 30-year roadmap identified in the *Citizens Climate Action Plan*, which also has a specific focus on encouraging the transition to electric vehicles (EVs). Mark Development understands the importance of a holistic, integrated design approach in achieving such ambitious goals, and has assembled a design team that has the experience and expertise necessary to realize this vision.

Mark Development is committed to be a leader in sustainability in the Newton community and pledges the following commitments for the Riverside Development:

1. Passive House design principles for the residential portions of the project, including certification of three residential buildings.
2. Electrification of~~or~~ the residential portions of the project to reduce fossil fuel dependence.
3. Embodied Carbon analysis guiding material selection.
4. Solar PV serving a portion of the common area load for the Passive House certified buildings and Solar Ready design for~~on~~ all building roofs. The ~~and~~ parking garage will pursue solar installation through the MBTA.~~garages~~
5. Rainwater Reuse for Irrigation and substantial Green Stormwater Infrastructure
6. ~~6.~~ Electric Vehicle Charging stations for 10% of the project parking spaces[1] and provisions for future Electric Bus charging
6.

[1] The quantity of EV charging stations within the MBTA parking spaces are to be determined by the MBTA

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Refer to Riverside Commitments Summary Table for building-by-building sustainability commitments.

RIVERSIDE REDEVELOPMENT SUSTAINBILITY FEATURES

PASSIVE HOUSE DESIGN PRINCIPLES

The United Nations International Panel on Climate Change (IPCC) released a report in 2018 that clearly stated that eliminating greenhouse gas production by 2050 is needed in order to avoid catastrophic effects of climate change. As outlined in the Newton Citizens Climate Action Plan, the Newton Citizens Commission on Energy (NCCE) agrees with the IPCC and urges Newton developers to achieve these climate goals through Passive House design.

The Passive House building standard represents~~standards represent~~ the future of building energy efficiency by encompassing stringent energy usage intensity thresholds combined with field performance testing to validate overall building performance. The Passive House Institute U.S. (PHIUS) is the main third-party certifying organization for Passive House buildings.

PHIUS's~~The PHIUS~~ mission statement clearly defines the goals of the standard, which are directly aligned with the IPCC goals: "To develop and promote North American passive building standards, practices, and certifications for buildings, professionals, and products to create structures that are durable, resilient, comfortable, healthy, and super energy efficient."

The Riverside Development has made the commitment to design and build the residential portion of the buildings using Passive House Design Principles. These principles will include:

- High performing thermal envelope with continuous insulation
- Airtight construction with low air change rates
- Balanced mechanical ventilation systems for improved indoor air quality and comfort
- High performance windows and doors to manage solar energy and minimize leakage

The project team will conduct Passive House feasibility studies including energy modeling for the residential use portions of ~~for~~ all residential buildings~~. and strive to achieve certification.~~ The team has committed to achieving certification for the residential use portions of three of the~~two of the eight~~ residential buildings~~ with a goal of certification on all buildings~~.

ELECTRIFICATION

As outlined in the Carbon Free Boston Summary Report 2019, “Achieving carbon neutrality will require Boston’s buildings to be highly efficient and to move away from fossil fuel use for heating and other services. New buildings can be built to the highest possible performance standards, while avoiding the lock-in of fossil fuels.” The impact of building design on the total greenhouse gas emissions in Boston is identified further in the report, “The GHG emissions from the use of

electricity, heating oil, natural gas, and steam in Boston's buildings account for more than two-thirds of the city's total emissions."

Passive House design principles achieve the objective of reducing building energy usage intensity relative to code-compliant buildings. However, to minimize dependence on carbon fuel sources and corresponding GHG emissions, these buildings need to switch to all-electric design where feasible. Due to higher energy costs for electricity relative to natural gas, many projects face an innate challenge to overcome this imbalance to construct feasible projects. When Passive House design principles are coupled with electric heating, cooling, and domestic hot water generation, the impact of energy usage is reduced in overall life-cycle cost, thereby increasing project feasibility.

The Riverside Development has made the commitment to design and build the residential portion of the residential buildings with all-electric-sourced heating and cooling systems (heat pumps, variable refrigerant flow systems, etc.) in addition to electric domestic hot water generation, where practicable, based on space type and utility metering. In addition, the Riverside Development will explore the feasibility of electrification for the hotel and office buildings.

EMBODIED CARBON

As project operational energy consumption is reduced through Passive House design principles and other sustainability measures, the carbon emissions occurring during the construction phase become~~becomes~~ more prominent in the overall building life-cycle emissions.

To further understand these impacts, a preliminary embodied carbon analysis was performed to evaluate various envelope wall assemblies implemented for a previous project constructed by Mark Development. New Ecology, Inc. (NEI) examined the thermal performance of numerous wall assemblies in conjunction with embodied carbon to compare the impact of various construction materials.

The Riverside Development will continue to evaluate material selection during the design phase and consider both embodied carbon and thermal performance during the wall assembly selection process. High performance wall assemblies with low embodied carbon and high thermal performance will be identified and evaluated for use during individual building design.

SOLAR PV INSTALLATION AND SOLAR READY DESIGN

The Riverside Development team recognizes the promise of energy independence and reduced carbon emissions, through renewable energy sources such as solar PV panels. While the reduction of energy use realized by Passive House design and construction is the primary driver of reduced carbon emissions for the project, renewable power generation on-site is a visible measure that everyone can understand. For this reason, the project will install rooftop solar PV panels on portions of the residential building roofs to offset 25% of the common area energy use for the Passive House certified buildings. Additionally, and more importantly, the team has encouraged the MBTA to pursue a solar PV installation over the parking garage. The MBTA has agreed to solicit interest from solar PV vendors through a Request for Proposal (RFP) process. If this RFP is successful, it will result in the generation of a significant amount of on-site electricity generation and will be visible to the general public.

The Riverside Development team will further~~will~~ build on the positive impacts of the efficiency described above by incorporating electrical, structural, and other design elements that make all buildings ~~the building~~ "solar ready" for renewable energy systems. Solar Ready design means that the project team will engage in a roof mapping exercise during individual building design to identify roof areas suited to renewable energy system integration, and that those areas of the roof will~~to~~ have the structural capability to carry the dead load and uplift loads of a renewable energy system. In addition, Solar Ready areas of the roof will be free and clear of any mechanical systems or plumbing penetrations, which are a major contributor to reduced potential in terms of system size and production. All required electrical chases from the roof into the electrical room will be included in the design and construction of the building, and space will be left free and clear in mechanical rooms for locating~~location of~~ inverters. Roofs will use~~be all white or light~~ high solar reflectance index materials as well~~,~~ to mitigate heat island impacts and significantly lower ground surface temperatures relative to the current site conditions.

~~Rooftop mechanical systems in all-electric buildings are a significant barrier to available roof space for solar PV. Due to Massachusetts State prohibition of allowing residential Owners to directly charge tenants for heating or cooling usage, it is not feasible to pursue a more compact VRF system for the residential buildings at this project. VRF systems are all-electric systems that require significantly less rooftop equipment (e.g. 1 outdoor unit to 16 indoor units) than a comparable all-electric air source heat pump mini-split system (1 outdoor unit to 1 indoor unit). Therefore the available roof space to install solar PV is significantly reduced for mini-split systems.~~

~~The development of renewable energy systems in Massachusetts currently is also more challenging due to the end of the SREC market, the reduced incentives under the new SMART program, and changes to net metering caps and requirements. If feasible Mark Development will~~

pursue the installation of solar PV systems through a third-party power purchase agreement. Due to the reduced financial incentives in the current solar PV market, third-party solar providers do not view smaller systems below approximately 50kW capacity to be economic. With the available roof space at the residential buildings at this development, systems are likely to be smaller than 50kW. Mark Development will continue to monitor the solar market and assess the feasibility of integration of renewable energy systems into the project. Mark Development is reviewing lease proposals from solar engineering, procurement, and construction (EPC) companies to install solar panels on building rooftop areas and install a solar canopy over parking garage top deck areas. This type of agreement would achieve the goal of implementing solar PV at the Riverside Development.

SITE DESIGN AND WATER REUSE

By the Riverside Development's very nature, it will present a substantial environmental benefit to both its immediate surroundings and the area as a whole. Located adjacent to the Charles River, the reduction of impacts from stormwater runoff are of key importance. The existing parking facilities at both the Riverside Terminal and the adjacent Hotel Indigo represent over 10 acres of asphalt pavement that contribute substantial amounts of stormwater runoff directly into the Charles River, which is essentially untreated. By relocating and consolidating the parking into a single strucutremultiple structures, automobiles will be parked where they are protected from the elements, and the salt, sand, and petroleum contamination associated with open-air parking will be drastically reduced.

The Riverside Development's site is currently a heat island hot spot, registering higher temperatures than the surrounding neighborhood due to the high percentage of impervious asphalt surface. The redeveloped site will provide more pervious green space and replace large sections of asphalt with buildings with high solar reflectance white roofs, reducing the heat island effect. In recent urban climate preparedness studies, large buildings with white roofs and pocket parks resulted in the most significant heat island reductions relative to other land cover types such as asphalt parking areas or low-density asphalt shingle-roofed houses (https://www.cambridgema.gov/CDD/Projects/Climate/~/media/A3977AB1B6AB47D7BEE02AE4D0B1410B.ashx).

The proposed redevelopment of the site will incorporate several Low Impact Development (LID) measures to promote the treatment and return of groundwater to the subsurface aquifer. Portions of the lower roof areas that are visible to residential tenants may include planted "green roof" systems. A "green roof" contains live plants in a lightweight soil medium that is designed to retain precipitation. The water is then absorbed by the plants and returned to the air through transpiration. This process removes dissolved contaminants including phosphorus, when the roof

is designed as a passive system that is not fertilized or watered. Phosphorus is a particular contaminant of concern in the Charles River watershed, of which the project site is a part. Additionally, on-street parking areas will be paved with pervious pavement to collect and infiltrate the "first flush" of stormwater from the streets before they reach the closed drainage collection system. The project will also include a subsurface stormwater retention and infiltration system designed to treat and retain stormwater within the site, further improving the water quality in the watershed and reducing the strain on the municipal drainage system.

A portion of the retained stormwater (cleaner roof drainage) will be utilized for site irrigation to reduce outdoor water consumption for the site.

LEED NEIGHBORHOOD DEVELOPMENT

The Riverside Development will follow ~~the~~ LEED Neighborhood Development (ND) design strategies to integrate ten buildings into one cohesive site. Sidewalks, intersections, perimeter landscaping, and the main façade will welcome the community members and visitors based on LEED design criteria strategies. Landscaping and site improvements will further emphasize the social and environmental priorities of this project. Outdoor spaces will be designed to encourage social engagement, turf will be minimized on the project, and plantings will be drought tolerant and appropriate for the microclimates specific to each planting area.

To determine the feasibility of LEED ND certification, Mark Development completed an evaluation exercise to review the site design including a LEED ND scorecard checklist. It was determined that receiving LEED ND certification was achievable in practice as many of the credit requirements have already been incorporated into the site design. Due to the extensive certification cost to pursue LEED ND, the team opted to follow the design strategies listed below without pursing certification.

The following LEED Neighborhood Development credit design strategies will guide the site design and construction:

Smart Location & Linkage

- Smart Location
- Wetland and Water Body Conservation
- Agricultural Land Conservation
- Floodplain Avoidance
- Preferred Locations
- Access to Quality Transit
- Bicycle Facilities

- Site Design for Habitat or Wetland and Water Body Conservation

Neighborhood Pattern & Design

- Walkable Streets
- Compact Design
- Connected and Open Community
- Mixed-Use Neighborhoods
- Access to Civic & Public Space
- Access to Recreation Facilities

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Green Infrastructure & Buildings

- Minimum Building Energy Performance
- Indoor Water Use Reduction
- Construction Activity Pollution Prevention
- Rainwater Management
- Heat Island Reduction

ELECTRIC VEHICLE CHARGING STATIONS

As outlined in the Carbon Free Boston Summary Report 2019, electric vehicle infrastructure needs to be drastically improved to meet the cities goals. "*Any remaining cars and trucks driving into and around Boston in 2050—including ride-hailing services—must run on low- or zero-GHG fuel or electricity. The City, region, and Commonwealth, along with utilities and other private sector partners, must help accelerate an affordable market transformation toward electric vehicles. Programs to support electric vehicle purchases and to build out local and regional electric vehicle infrastructure will help make EVs a more economic, convenient, and accessible solution.*"

Riverside Development residential and commercial tenants, visitors, and the community alike will desire access to EV charging parking spaces for both convenience and climate change mitigation. Mark Development understands that provisions for electric vehicle charging stations need to be implemented during construction to avoid extensive costs of upgrading the electrical infrastructure at a future date. Therefore, Mark Development is planning to implement EV charging parking spots at the Riverside Development for at least 10% of the project parking spaces, to be located in preferred locations for various users. This does not include the MBTA

parking spaces. However, ~~however~~ it is anticipated that the MBTA will choose to include a significant quantity of EV charging spaces as well.

In addition, Mark Development is committing to an additional 10% of parking spaces to be electric vehicle-ready to allow simple conversion to EV parking spots in the future. And provisions will be made such that the site is ready for potential future electric MBTA bus charging infrastructure.

TRANSPORTATION

It is expected that by its design, the project will exhibit a substantial reduction in demand for automobile use with many residents opting to forgo car ownership altogether and office tenants reverse-commuting from the Boston area. The site boasts extreme proximity to the adjacent light rail Riverside Terminal, which makes the site an appealing candidate for a development of this scale. In addition to the light rail facility, several bus and shuttle lines will reward residents, hotel guests, and commercial employees with easy, affordable, and clean transportation methods to the surrounding communities, downtown Boston, and even New York City.

The Riverside Development is planned as a full-service neighborhood and will include a variety of amenities including restaurants, retail spaces, and other services. This will ultimately mitigate the need for site occupants to depart the Riverside Development. A new connection to the surrounding Charles River Reservation will afford residents and employees access to acres of parks, trails, cross country skiing, golf, and other recreational opportunities all without the need for an automobile.

In addition, the design team will employ a Transportation Demand Management (TDM) plan including short term and long ~~-~~term bike parking, Zip Car availability on the property, and designated spots and charging stations for low emitting vehicles and electric cars (and financial incentives for use of public transit by residents ~~and commercial users~~).

Bicycle Facilities

The Riverside Development includes 942 bicycle parking spaces throughout the site and buildings available for the various users, including residents, office tenants, retail and hotel employees, visitors and MBTA commuters. 854 of these spaces will be located in secure and weather protected locations including interior bike rooms and bike cages.

Residential bicycle~~Bicycle~~ use shall be encouraged throughout the development through the provision of 610~~680~~ safe, convenient, covered, and secure long term bicycle parking areas. This amounts to more bicycle storage facilities than residential units in the development, resulting in a bicycle parking to residential unit ratio of 1.05~~17~~.

In addition to interior bicycle parking spaces, bicycle racks will be provided at a minimum of one per approximately 200 linear feet of sidewalk edge at all retail frontages to promote community bicycle travel. Additionally, a well-lit bicycle rack will be provided adjacent to each major entrance to office and residential buildings at the nearest advantageous location (no further than 75').

MECHANICAL SYSTEMS

Mechanical systems selected and sized to meet the minimal heating and cooling loads and ensure comfort will complement the advanced building envelopes incorporated in the design. The design team has performed a life cycle cost analysis of the preliminary design for the first residential building to facilitate informed decision-making around envelope design and mechanical system selection. This analysis provides a more holistic view of the implications of the performance, operating cost, and carbon impacts of options under consideration.

The life cycle cost analysis includes all-electric systems (heat pump and VRF) compared against natural gas-based hydronic systems. This evaluation informed preliminary mechanical system design options and allowed the MEP consultants to understand the design principles early in the design stage.

The design team included Massachusetts incentive programs during the life cycle cost analysis that support installing VRF and air-source heat pump systems for mixed use buildings.

Low flow, high performance fixtures that meet or exceed the EPA WaterSense standards will also be integrated to reduce water and energy use while maintaining tenant comfort.

LIGHTING AND ELECTRICITY

Appliances will be top performers in function, design, energy, and water efficiency. Electrical load will be reduced through smart lighting design that takes full advantage of the efficient, reliable, and attractive LED fixtures and lighting controls that are now available.

INDOOR AIR QUALITY

Of equally important consideration are the indoor air quality impacts of our approach. Mark Development is committed to providing individuals and families with a living environment that enhances their lives and health. Mark Development will accomplish this through two methods: ventilation and material selection. Ventilation systems will be designed to provide fresh supply

air directly to each apartment. Toxins and contaminants will be minimized through careful specification of low VOC and no added urea formaldehyde materials.

TRAINING, TESTING, AND VERIFICATION

Managing the transition from modeled performance to achieving real world performance is a main focus for this project. A series of on-site trainings, inspections, testing, and continuous feedback to the team will be the primary tools used to ensure designed and modeled approaches translate to performance achievement.

As part of this process, the Riverside Development team will:

- Hold a pre-construction trades training focused on trade specific best practices around performance-based construction;
- Review submittals for greening compliance;
- Conduct testing and inspections by certified HERS raters and PHIUS verifiers~~raters~~ that include:
  - Foundation insulation inspections
  - Insulation and air barrier inspections
  - Mock-up level duct leakage and compartmentalization testing
  - Final duct leakage testing
  - Final compartmentalization testing
  - Flow testing on water use fixtures
- Train and educate the buildings operations staff on the green features of the building and how to operate and maintain them; and
- Train and educate the residents of the buildings on the green features and how to minimize environmental footprint.

FUNDAMENTAL COMMISSIONING

Fundamental commissioning provides another critical layer of oversight that will be integrated into the Riverside Development. Heating, cooling, ventilation, domestic hot water, lighting, and other mechanical systems will be submitted to performance testing and verification process to ensure proper installation and operations. As part of this process, a certified commissioning agent will:

- Develop and implement a commissioning plan
- Verify installation and performance of systems to be commissioned
- Provide a summary commissioning report to the building owner

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Riverside Redevelopment - Sustainability Commitments Summary

Building+B 4:E9	Building Type			Secondary Use		Newton Ordinance Sustainability Pathway		Construction Standards	Electrification	Embodied Carbon	Electric Vehicle Chargers	Electric Vehicle Ready	Solar PV Source Energy**	Solar PV Ready
[#]	[Type]	[Units]	[sf]	[Type]	[sf]	[12.4.A.1 - LEED Gold Certifiable]	[12.4.A.2 - Passive House]*	[-]	[Yes/No]	[-]	[%]	[%]	[Y/N]	[Y/N]
1	Office	0	243,387	-	-	Silver Certifiable	-	Market Standards	Explore Electrification	Guiding Material Selection	-	-	No	Yes
2	Hotel	150	77,300	-	-	Silver Certifiable	-	Market Standards	Explore Electrification	Guiding Material Selection	-	-	No	Yes
3	Residential	137	153,683	-	-	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
4	Residential	107	122,810	Retail	3,792	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
5	Residential	50	57,200	-	-	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
6	Residential	57	65,135	Retail	6,886	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
7	Residential	46	54,265	Retail	7,785	Certifiable	Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	Yes	Yes
8	Residential	76	62,146	Retail	3,218	Certifiable	Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	Yes	Yes
9	Residential	44	42,330	Retail	21,561	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
10	Residential	100	96,002	-	-	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
Garage	Garage	1971 Spots***	-	-	-	N/A	N/A	-	-	-	10%	10%	MBTA RFP	Yes

*One additional residential building will be certified.
**One additional residential building will have a 25% of the common area load as solar PV.
***1000 of the 2011 parking spots on the site are owned by MBTA. It is anticipated that the MBTA will choose to include EV charging spaces as well.

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Riverside Redevelopment - Sustainability Commitments Summary														
Building	**Building Type**			**Secondary Use**		**Newton Ordinance Sustainability Pathway**		**Construction Standards**	**Electrification**	**Embodied Carbon**	**Electric Vehicle Chargers**	**Electric Vehicle Ready**	**Solar PV**	**Solar PV Ready**
[#]	**[Type]**	**[Units]**	**[sf]**	**[Type]**	**[sf]**	**[12.4.A.1 - LEED Gold Certifiable]**	**[12.4.A.2 - Passive House]**	**[-]**	**[Yes/No]**	**[-]**	**[%]**	**[%]**	**[Y/N]**	**[Y/N]**
1	Office	0	243,387	-	-	Certifiable	-	Market Standards	Explore Electrification	Guiding Material Selection	-	-	No	Yes
2	Hotel	150	77,300	-	-	Certifiable	-	Market Standards	Explore Electrification	Guiding Material Selection	-	-	No	Yes
3	Residential	137	153,683	-	-	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
4	Residential	107	122,810	Retail	3,792	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
5	Residential	50	57,200	-	-	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
6	Residential	57	65,135	Retail	6,886	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
7	Residential	46	54,265	Retail	7,785	-	Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
8	Residential	76	62,146	Retail	3,218	-	Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
9	Residential	44	42,330	Retail	21,561	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
9G	Garage	852 Spots*	369,678	-	-	-	-	-	-	-	10%	10%	No	Yes
10	Residential	100	96,002	-	-	Certifiable	Explore Certification	Passive House Principles	Yes	Guiding Material Selection	-	-	No	Yes
10G	Garage	1138 Spots*	293,512	-	-	-	-	-	-	-	10%	10%	No	Yes

*1000 of the 1990 parking spots on the site are owned by MBTA. It is anticipated that the MBTA will choose to include a significant portion of EV charging spaces as well.

In response to a request for clarification of the following criteria from the MU-3 zone, the Project team believes that the proposed development is in compliance these s requirements for the reasons which follow:

7.3.5.A.8.a.v

Evaluation of the hydraulic capacity of the downstream draining system

The Engineering Division of the Public Works Department has deemed this requirement inapplicable because the Project includes a comprehensive stormwater management system including numerous improvements to attenuate the peak rate of runoff for all storm frequencies. As a result, the flow rates from the site will be reduced and excess hydraulic capacity will be created in the existing 60" diameter drainage pipe which conveys the vast majority of the MBTA site drainage and Runaway Brook through the site. The 60" diameter drainage pipe discharges directly into the receiving waterbody, the Charles River. The Project site represents a very small fraction of the overall Charles River watershed. Notwithstanding, there will be an improvement in the hydraulic capacity of the 60" diameter drainage pipe and a minimal improvement in the Charles River capacity, thereby eliminating any potential adverse impacts to downgradient resources.

7.3.5.A.8.b.ii

Calculation of the life cycle cost of the proposed sanitary system

The Engineering Division of the Public Works Department has deemed this requirement inapplicable to the Project. A life cycle cost analysis is typically performed for sewage treatment systems, pump stations, or other installations with complex systems. The proposed sanitary system consists of PVC piping and concrete manholes. These materials would outlast the horizon of a typical 10- or 20-year cost analysis.

7.3.5.A.8.b.iii

Quantitative analysis of the capacity to dispose, verified by the MWRA

The Project will connect to a main interceptor pipe directly through an existing 10" pipe currently serving only the Hotel Indigo. This interceptor pipe has been confirmed by the Public Works Department to have available capacity of 3,000,000 gallons per day. The Project is projected to generate up to 75,000 gallons per day, representing 2.5% of this downstream pipe's available capacity. The Project will not connect to any of the local network piping. Additionally, the Project is making a $1.4M contribution to the infiltration and inflow fund, which will offset the net new generation.

7.3.5.A.8.b.iv

A study showing how the developer will comply with the City's cross connection control program relating to sewer and drain pipes

The Project will include all new independent water, sewer, and drain systems. All new connections will be made in accordance with the cross connection control program and all non-potable water services will have proper backflow prevention devices.