Section 4.0 TRANSPORTATION

4.0 TRANSPORTATION

This section contains a revised transportation analysis that includes traffic modeling requested by MassDOT and provides additional information based on comments received on the Draft EIR.

4.1 Traffic Modeling

At the request of the Massachusetts Department of Transportation (MassDOT), TEC, Inc. (TEC) has prepared a traffic simulation model using SimTraffic 7.0 analysis software. The intent of this simulation is to model the impacts of queues extending toward adjacent intersections of the roadway network. TEC coordinated with MassDOT Traffic Engineering staff in Boston to determine the scope and study area for the traffic simulation modeling. Based on these discussions, the following intersections were included in the study area:

- Thomas E. Burgin Parkway at Granite Street;
- Thomas E. Burgin Parkway at Market Square Connector (future connection);
- Thomas E. Burgin Parkway at Mayor Hannon Parkway;
- Thomas E. Burgin Parkway at Quincy Street;
- Thomas E. Burgin Parkway at Penn Street;
- Thomas E. Burgin Parkway at Centre Street;
- Mayor Hannon Parkway (i.e., Granite Connector) at Granite Street;
- Mayor Hannon Parkway at Parkingway;
- Mayor Hannon Parkway at Ross Way;
- Mayor Hannon Parkway at Hancock Street;
- Granite Street at Ross Way; and
- Ross Way at Market Square Connector (future connection).

4.1.1 Model Calibration

TEC calibrated the SimTraffic 7.0 model to more accurately simulate traffic patterns throughout the study area roadway network. Elements of this calibration are summarized as follows:

- The traffic simulation model indicated that traffic exiting the Market Square Connector (Burgin Parkway Access Bridge) onto Burgin Parkway will be blocked by queued northbound traffic along Burgin Parkway. During intervals of extended queues, vehicles on Burgin Parkway will supply courtesy gaps for vehicles exiting the Market Square Connector. Therefore, to calibrate the simulation model to reflect traffic exiting the Market Square Connector during these courtesy gaps, the

critical gap was decreased from the default 6.9 seconds to 5.0 seconds. In addition, two vehicles were allowed to enter the blocked unsignalized intersection from the Market Square Connector.

- Traffic exiting Ross Way and the Stop & Shop Headquarters will occasionally be blocked by queued traffic along Granite Street as occurs today. Traffic on Granite Street is expected to leave courtesy gaps to allow vehicles to exit these approaches. Therefore, one vehicle was allowed to enter the blocked unsignalized intersection to simulate these courtesy gaps in the model.

- Left-turning traffic exiting Hancock Street northbound and Parkingway northbound onto Hannon Parkway will be subject to high volumes of opposing through-traffic along Hancock Street southbound and Parkingway/Ross Way southbound, respectively. Whereas left-turning vehicles will enter the intersection during their allotted green phase and turn left when available, a one-vehicle allowance to enter the blocked intersection was calibrated at these two signalized intersections.

- SimTraffic 7.0 utilizes a default setting of heavy vehicles that include double-trailer trucks. As double-trailer trucks are not permitted on study area roadways, the percentage of double-trailer truck occurrence was reduced to zero.

- Driveways to the proposed parking garages will be located along Ross Way and Market Square Connector. The majority of traffic on Market Square Connector and on Ross Way between Granite Street and Market Square Connector will be destined to or from the parking garages. Only a small portion of traffic on these roadway sections will represent through-traffic. Therefore, to calibrate the simulation model to reflect traffic exiting and entering the roadway along these roadway links, breaks in the roadway links have been inserted in the network.

- In the future Build and Build with Mitigation Conditions, a truck prohibition will be incorporated on Hancock Street between Coddington Street and Hannon Parkway. This was not reflected in the Synchro capacity analysis included in the Draft EIR. To adjust the SimTraffic model, heavy vehicle percentages were reduced to zero along the eastern section of Market Square Connector and along the southbound turn movements of Hancock Street at Hannon Parkway. The heavy vehicle percentage for southbound and northbound through-movements remained at 2% to account for MBTA bus routes along Hancock Street.

- Due to wayfinding signage combined with resident and commuter familiarity with the roadways, motorists are expected to position themselves in the appropriate lane in advance of reaching the intersection. Some aggressive drivers will remain in under-utilized lanes and merge into the correct lane immediately before the intersection. To reflect this condition, the mandatory and positioning distances have been calibrated along Hannon Parkway. The mandatory distance along these

approaches was reduced to 200 feet (representing approximately half of the link distance), and the driver behavior characteristics for mandatory and positioning distance were condensed to reflect driver familiarity with the roadway.

4.1.2 Additional Mitigation and Improvements

Additional mitigation and improvements not included in the Draft EIR have been incorporated into the SimTraffic traffic simulation model to reduce Project impacts and improve intersection operations, and will be implemented by the Private Redeveloper. The proposed Section 61 Finding in Section 7.0 has been updated to reflect these additional mitigation measures. Model updates reflecting these improvements are summarized below:

- *Burgin Parkway/Granite Street:* The signalized intersection at Burgin Parkway and Granite Street was coordinated with the intersection of Burgin Parkway/Hannon Parkway, and its cycle length was reduced from 120 seconds to 100 seconds. Signal coordination was identified in the Draft EIR as a measure to be considered as part of a future City project. This alteration was made for all time periods. In addition, six-foot-wide raised median islands will be constructed on Granite Street eastbound and westbound approaches to provide a pedestrian refuge island in the center of the roadway. Providing the pedestrian refuge will allow for concurrent pedestrian phasing, significantly reducing delay and queues through the intersection. *(2022 Build with Improvements only)*

- *Burgin Parkway/Hannon Parkway:* Signal timing and phasing have been altered at this intersection at the request of the City of Quincy Traffic Department to reduce delays and queuing. The phasing incorporates additional green time for westbound left-turning traffic onto Burgin Parkway southbound and elimination of the eastbound left-turn from Hannon Parkway. Site-generated traffic previously using this left-turn to access the Burgin Parkway Access Bridge was redistributed to Ross Way via Hannon Parkway further to the east. As part of these improvements, the crosswalk on the Burgin Parkway southerly leg of the intersection will be removed to allow for concurrent pedestrian phasing. Minor signal timing and offset changes were incorporated at the intersection of Hannon Parkway/Parkingway/Ross Way and the intersection of Hannon Parkway/Hancock Street to improve traffic flow along the Hannon Parkway corridor. (*2022 Build with Improvements Only)*

- *Hannon Parkway/Parkingway/Ross Way:* Minimum green times along all approaches where upwardly adjusted to allow a minimum of five seconds for protected turn phases and six seconds for all other movements. In addition, the storage length for the northbound left-turn lane along Parkingway was increased to 125 feet to allow for additional stacking for the large number of left-turning vehicles. *(2022 Build and 2022 Build with Improvements)*

- *Hannon Parkway/Hancock Street:* Concurrent pedestrian phasing was incorporated into this intersection to be consistent with other signalized intersections along Hannon Parkway to the west including its intersection with Ross Way and Burgin Parkway. The improvement will allow for more consistent signal timing along the corridor and more consistent vehicular platooning during typical peak hour conditions. *(2022 Build with Improvements)*

- *Ross Way/Market Square Connector:* Additional turn lanes have been included on the eastbound, northbound, and southbound approaches with storage lengths of approximately 75 feet. This will require the elimination of up to three on-street parking spaces on each of these approaches *(2022 Build)*. A fully-actuated traffic signal with concurrent pedestrian phases has been introduced at the intersection as mitigation for site-generated traffic volumes. *(2022 Build with Improvements Only)*

4.1.3 Simulation Model Results

Results of the SimTraffic analysis are provided within detailed analysis print-outs in Attachment B, and TEC provided MassDOT with the SimTraffic analysis files at a meeting on October 26, 2012. Based on geometric and traffic signal related improvements within the study area, traffic operations within the 2022 Build with Improvements simulations were shown to be comparable to 2022 No-Build operations. Results are summarized below.

- Operations are particularly improved on the western segment of Hannon Parkway between Granite Street and Burgin Parkway. The addition of an exclusive right-turn lane on the Hannon Parkway eastbound approach allows for improved eastbound clearance and improved southbound left-turn clearance on Granite Street to the west.

- The change in signal phasing at the intersection of Burgin Parkway/Hannon Parkway allows additional time for westbound left-turns, dissipating the queue within the internal Hannon Parkway link between Burgin Parkway and Ross Way. This allows for improved operations on Ross Way.

- The Hancock Street northbound approach at Hannon Parkway still experiences long delays during the 2022 Build with Improvement conditions. However, it is reasonable to expect that some traffic may divert to School Street and Mechanic Street to access Hannon Parkway and Revere Road and avoid this approach.

- Although long delays and queues are shown on the roadway links entering the roadway network, these queues are a result of the random arrival pattern of vehicles entering the network. Upstream traffic signals along these roadway corridors will meter traffic arriving at these intersections and create platooning that is not modeled

in the analysis for this limited study area. As such, delays and queues reported in SimTraffic on the links entering the roadway network are longer than actual delays and queues that are experienced with this metering.

4.2 Public Transit

This section addresses the Project's effects on public transit.

4.2.1 Bus Route Circulation

Several MBTA bus routes, shown on Figure 4.1, pass through the Project area. Minor changes to these routes, discussed in the following sections, are expected as a result of the Project and the Adams Green Transportation Improvement Project.

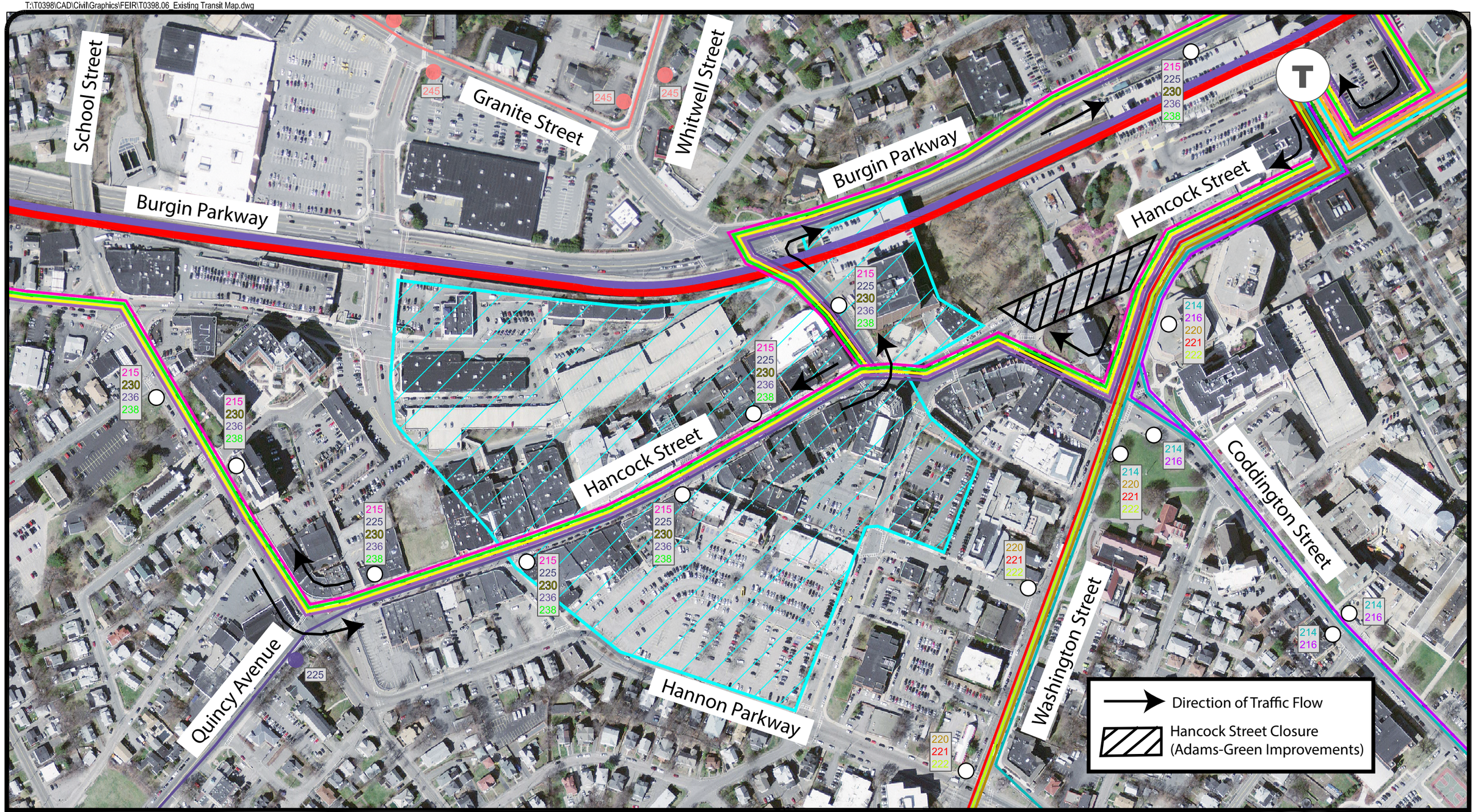
4.2.1.1 Adams Green Transportation Improvement Project Impacts

As part of the Adams Green Transportation Improvement Project, Hancock Street between Washington Street and Temple Street will be discontinued and Washington Street traffic flow will be converted from one-way to two-way flow. Outbound MBTA bus routes 214, 215, 216, 220, 221, 222, 225, 230, 236, and 238 currently travel through the Adams Green area. These buses will be rerouted onto Washington Street, which will result in minor changes to travel times and headways. Figure 4.1 shows the revised bus routes following construction of the Adams Green project.

Bus routes 214, 216, 220, 221, and 222 travel westbound on Washington Street toward Hancock Street on their inbound routes, while traveling southbound on Hancock Street and turning left onto Temple Street to access Washington Street or Coddington Street on their outbound routes. With the improvements proposed as part of the Adams Green Transportation Improvement Project, which will create two-way traffic flow on Washington Street, these buses will utilize Washington Street to access Coddington Street or continue east on Washington Street without having to loop around on Temple Street. This route change will slightly decrease travel time along these bus routes.

Bus routes 215, 225, 230, 236, and 238 do not travel through the Adams Green area on their inbound routes, but travel southbound on Hancock Street through Adams Green on their outbound routes from Quincy Center Station. These routes will be moderately adjusted as part of the Adams Green Transportation Improvement Project, since the existing Hancock Street between Washington Street and Temple Street will be discontinued. Only minor increases in travel times are anticipated along these routes as a result of the Adams Green project.

T:\T0398\CAD\Civil\Graphics\FEIR\T0398.06_Existing Transit Map.dwg



LEGEND:

- Commuter Rail
- Red LIne
- Bus Stop
- Bus Stop (Multiple Routes)

Bus Route

210 211 212 214 215 216 217 220
221 222 225 230 236 238 240 245

SCALE: 1" = 250'

This Figure Prepared in Coordination With:

City of Quincy
City Hall
1305 Hancock Street
Quincy, MA 02169

Hancock Adams Associates
1400 Hancock Street
Quincy, MA 02169

TEC
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Lawrence, Massachusetts

SDG
51 Sleeper Street
Suite 600
Boston MA 02210
617-695-7799

Figure 4.1 October 31, 2012
MBTA Transit Map
(with Adams-Green Improvements)

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Quincy, Massachusetts

4.2.1.2 Project-Related Impacts

MBTA bus routes 215, 225, 230, 236, and 238 travel through the Project area. On the inbound routes to Quincy Center Station, all of these buses travel northbound on Hancock Street between School Street and Granite Street, then turn left onto Granite Street and right onto Burgin Parkway. For outbound routes, all buses travel southbound on Hancock Street from the Quincy Center Station through the Project area. As part of the proposed redevelopment Project, Hancock Street and Granite Street will continue to provide bus access through the Project area, and no changes in these routes are anticipated as a result of the Project. The Proponents have begun consultations with MBTA to discuss providing bus stops and bus shelters within the Project area along these routes (see Section 4.2.5).

4.2.2 Transit Signal Priority

Intersections along Hannon Parkway are coordinated with each other and with intersections along Burgin Parkway. Maintaining this coordination is critical to facilitating traffic flow along these corridors and ensuring that queues do not block adjacent intersections. Implementing transit signal priority at the Hannon Parkway/Hancock Street intersection would result in frequent interruptions in coordination along Hannon Parkway due to the number of buses passing through this intersection, diminishing operations along the roadway corridor. Therefore, transit signal priority is not recommended at this location.

Several MBTA bus routes leave the Quincy Center Station and travel southbound on Hancock Street through Adams Green. As part of the Adams Green Transportation Improvement Project, intersections along Hancock Street between Dimmock Street/Adams Street and Granite Street will be coordinated. To facilitate bus travel through these intersections, the MBTA and City of Quincy should consider implementing transit signal priority through these intersections. As the intersections will be coordinated, transit calls placed on the signals will not interrupt coordination or platooning of vehicles at downstream intersections. The Proponents will meet with MBTA to discuss to potential of implementing transit signal priority along this roadway corridor.

4.2.3 Consolidation and Relocation of Bus Stops

As shown in Figure 4.1, there are currently two MBTA bus stops located on the east side of Hancock Street for inbound buses, one just north of Hannon Parkway, and one just south of Cottage Avenue. A distance of only 500 feet separates these bus stops. Frequent stops at both locations result in unnecessary delays for vehicles on Hancock Street and inefficiencies with bus travel times. Consolidating these bus stops to provide one bus stop on Hancock Street between Granite Street and Hannon Parkway is recommended as part of the Project. The Project also includes a proposed midblock pedestrian crossing on Hancock Street between Granite Street and Cottage Avenue. Bump-outs will be constructed at this crossing to improve pedestrian safety. It is recommended that the bus stop be located at this crossing, since the bump-out will provide an area for a bus shelter

and patrons waiting for the bus will be visible to the bus driver approaching the bus stop. Furthermore, this bus stop location would provide greater separation from the adjacent signalized intersections, thus minimizing impacts on operations through the intersections.

There is also a bus stop on the west side of Hancock Street north of Cottage Avenue for outbound buses. This bus stop is located in close proximity to the proposed pedestrian crossing on Hancock Street and should also be relocated to the crossing to improve safety and access for bus riders.

There is currently a bus stop located on the north side of Granite Street opposite Ross Way. This bus allows people traveling to the Stop & Shop building to depart the bus without having to cross the wide Hancock Street/Granite Street intersection. The Adams Green Transportation Improvement Project will improve pedestrian access through the Hancock Street/Granite Street intersection. In addition, the bus stop on Hancock Street will be shifted further north, closer to Granite Street, resulting in less than 400 feet separating these bus stops. Therefore, the MBTA should consider eliminating this bus stop to improve travel times and headways along Routes 215, 225, 230, 236, and 238.

The Proponents will meet with MBTA to review the potential for relocation and consolidation of bus stops within the Project area and will file any necessary applications to revise bus routes.

4.2.4 Proposed Amenities

4.2.4.1 Bus Shelters

Although bus stops are present within the Project area, there are currently no bus shelters. The Private Redeveloper proposes to construct bus shelters at the bus stops proposed on Hancock Street within the Project area. These bus shelters will have posted transit maps and schedules and will be located outside the path of pedestrian traffic flow but at least five feet from the edge of the roadway for accessibility around the bus shelter. The Proponents will coordinate with MBTA to determine the most appropriate location for bus shelters.

4.2.4.2 Transportation Office

The Private Redeveloper will hire a Transportation Coordinator (TC) to manage the Transportation Management Office (TMO) that will be located in the Project area. This TMO will serve as a source for information on various transportation services for residents, employees, and patrons of the Project area. Transit passes will be sold in the TMO and free maps of all local transit services, as well as local walking and bicycling routes and destinations, will be provided.

4.2.4.3 Wayfinding Signage

The Private Redeveloper will post wayfinding signage in the Project area to direct pedestrians and bicyclists to the nearest bus stops and transit stations, such as the MBTA Quincy Center Station. The Proponents will coordinate with MBTA and the City of Quincy to determine the type and location of this signage.

4.2.4.4 Transit Real-Time Countdown Signs

Transit real-time countdown signs improve customer service by allowing transit users to know where their bus or train is located and when it will arrive at their stop. Transit users can utilize this information to make more informed decisions about modes of travel, travel routes, and travel times. Providing this information helps transit users make efficient use of their time by allowing them to pursue other activities while waiting for a bus or train. It also reduces anxiety by informing travelers of when the next bus or train will arrive or depart. Automatic vehicle location (AVL) devices are required in order to locate a bus or train and transmit this information to travelers via a dynamic message sign (DMS). The Proponents will coordinate with MBTA to determine whether bus and rail service vehicles can be equipped with AVL devices to implement transit real-time countdown signs at key transit locations, such as the MBTA Quincy Center Station.

Implementation of this technology at individual bus stops within the Project area is not likely to provide a significant benefit compared to the cost of implementing this technology, since bus schedules will be posted at bus stops and bus arrival times are not expected to differ greatly from scheduled arrivals. In addition, the number of bus users boarding each bus at each stop will not justify the additional cost of implementing this technology. Bus fares may increase to offset maintenance costs associated with providing real-time transit information at multiple stops, which may reduce use of transit services. Therefore, installation of transit real-time countdown signs is not recommended at bus stops within the Project area.

4.2.4.5 Lighting at Bus Stops

The Private Redeveloper will install appropriate lighting at bus stops within the Project area as well as at the bus stops on Washington Avenue at Hannon Parkway/McGrath Highway and Foster Street to improve safety and security for patrons while waiting for the bus.

4.2.5 Coordination with MBTA

Representatives of the City of Quincy met with the MBTA on October 16, 2012 to discuss potential impacts of the Adams Green Transportation Improvement Project and the New Quincy Center Redevelopment Project on the bus travel routes and stop locations in the area surrounding Adams Green and the Project. The Proponents will continue to meet with

representatives of MBTA to gain feedback on additional items such as transit signal priority, consolidation of bus stops, construction and location of bus shelters, and provision of additional transit amenities.

4.3 Truck Traffic

As part of the separate Adams Green Transportation Improvement Project, a truck restriction will be implemented along Hancock Street between Granite Street and Washington Street to eliminate trucks traveling through Adams Green. As such, Hancock Street will not be utilized for truck access to or from the Project area. Truck deliveries to buildings within the Project area are expected to occur along Ross Way and Chestnut Street/Dennis Ryan Parkway. The majority of trucks traveling to and from the Project area will travel via Burgin Parkway and Hannon Parkway to access Ross Way and Chestnut Street/Dennis Ryan Parkway. To reduce truck traffic impacts on Project area roadways, the Private Redeveloper will implement the following measures:

- Encourage tenants to require deliveries during non-peak hours, with the exception of postal service or similar deliveries;
- Restrict the size of trucks accessing the Project area to ensure appropriately-sized trucks utilize area roadways;
- Encourage tenants to comply with no-idling laws which prohibit unnecessary engine idling of any motor vehicle for longer than five minutes (MGL, Chapter 90, Section 16A);
- Develop site plans and building designs that have non-conflicting pedestrian and truck access; and
- Provide designated truck parking and loading/unloading zones off the roadway to minimize the impacts to through-traffic on Project area roadways.

4.4 Pedestrian and Bicycle Accommodations

4.4.1 Pedestrian Accommodations

The proposed redevelopment of Quincy Center is intended to create a more pedestrian-friendly area with streetscape improvements, new open space elements, and traffic-calming measures. A network of sidewalks and enhanced streetscapes will establish pedestrian-friendly connections between public open spaces, and sidewalks will be designed to encourage walking. Trees and landscaping treatments will create aesthetically-pleasing and pedestrian-friendly areas.

Sidewalks along all roadways within Project limits will be reconstructed, and they will be widened to provide additional pedestrian amenities such as lighting, benches, and café seating. In addition, many intersections outside of the immediate Project area, particularly those along major pedestrian routes, will also benefit from improved pedestrian signal equipment, enhanced sidewalks, and wheelchair ramps. A full description of pedestrian facility improvements proposed outside of the Project area is included in the *Pedestrian/Bicycle Amenities* section in Chapter 4 of the Draft EIR.

4.4.2 Adams Green Transportation Improvement Project

In 2006, the City of Quincy adopted a Vision and Strategy Plan that identifies the need to develop a public gathering space, now provisionally known as Adams Green, to improve pedestrian and bicycle connections to many of Quincy Center's assets. Adams Green, a separate project being implemented in two phases, will serve as the primary gateway from the Quincy Center MBTA station to the Church of the Presidents, National Park Service Visitors Center and nearby attractions, Historic Quincy Town Hall and adjacent historic cemetery, and new downtown commercial uses. Phase 1 of the project is currently underway and entails the design and implementation of streetscape, traffic, public works, bicycle, and pedestrian improvements as well as discontinuance of the southerly portion of Hancock Street for general vehicular traffic. Bicycle improvements included in the Adams Green project are summarized below, and Attachment B contains the abridged 25% bicycle plans for that project:

- Hancock Street:
  - The discontinued portion of Hancock Street will function as a "promenade" from park entrance to the redeveloped commercial core. Bicycles will be safely accommodated through the promenade.
  - Hancock Street southbound from Dimmock Street will include a new bicycle lane that will connect to the promenade in Adams Green.
  - Hancock Street southbound from the promenade to the Granite Street intersection will include sharrows.

- Washington Street southbound from the discontinued portion of Hancock Street will include a bicycle lane with a "bicycle box" at the Washington Street/Coddington Street intersection.

- Coddington Street eastbound and westbound between Washington Street to Faxon Avenue will include sharrows, which are shared-lane markings indicating that a bicyclist may use the full lane.

- Temple Street southbound and northbound will include sharrows.

- Granite Street eastbound and westbound between Burgin Parkway and Hancock Street will include bicycle lanes. A "bicycle box" is proposed for the left-turn movement onto Temple Street northbound.

4.4.3 City of Quincy Bicycle Infrastructure Master Plan

The City of Quincy's Department of Planning and Community Development has begun preparing a bicycle circulation and infrastructure plan in an effort to promote bicycling as a viable mode of transportation in Quincy for all trip purposes and for a wide-range of users, and to improve the safety of bicyclists throughout Quincy's roadway network. The plan is expected to be completed over the next year, and will serve as a guiding document for prioritizing the provision of bicycle accommodations. Bicycle accommodations proposed as mitigation for the New Quincy Center Redevelopment Project will be consistent with goals of the Master Plan.

4.4.4 City of Quincy Bicycle Parking Plan

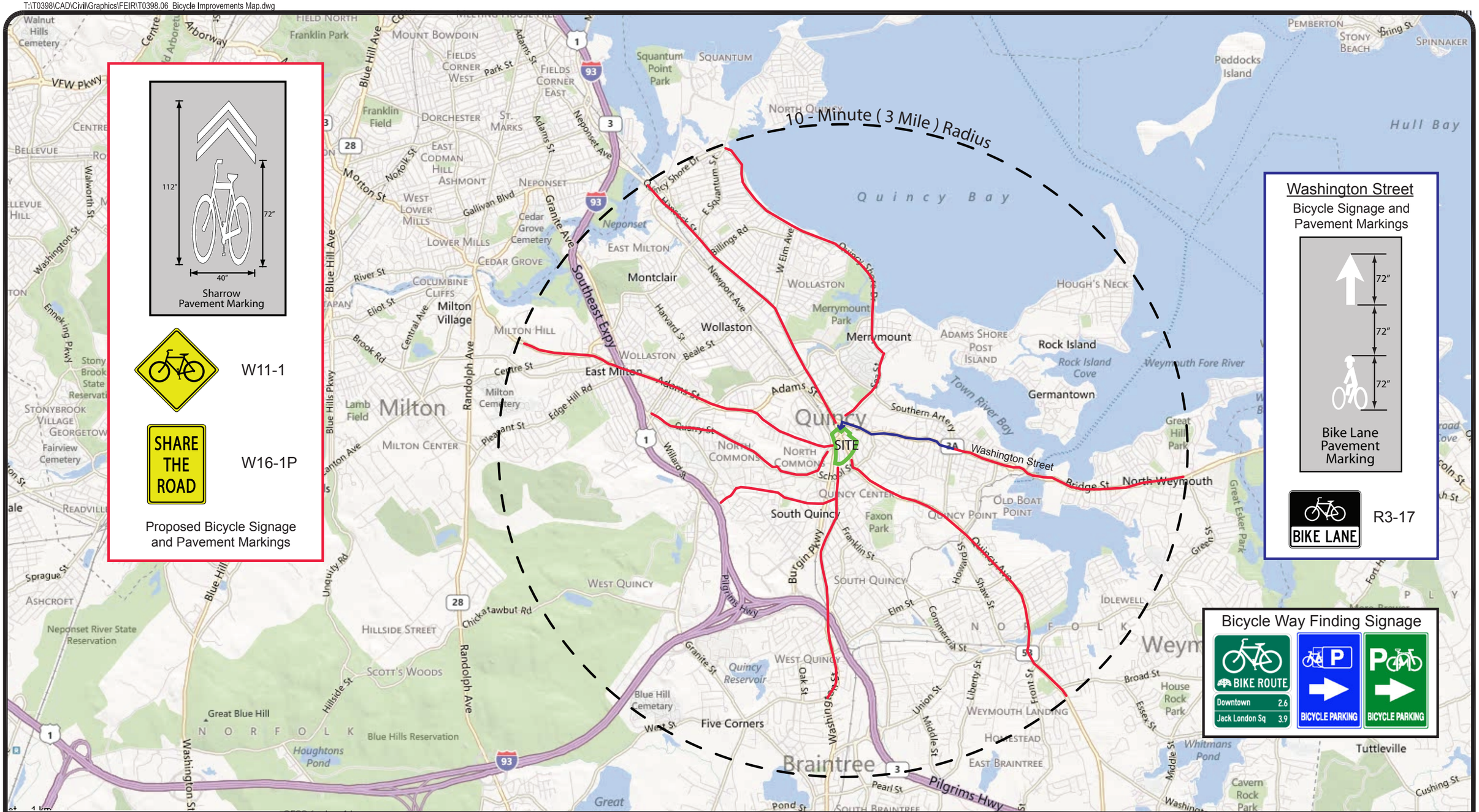
The City of Quincy's Department of Planning and Community Development, in collaboration with the Department of Public Works (DPW), developed the City of Quincy Bicycle Parking Plan, which identifies the location of bicycle parking throughout the City. The purpose of this plan was to raise awareness of the prior lack of acceptable bicycle parking accommodations and recommend locations throughout the City for providing bicycle racks. More than 40 racks were purchased through MAPC's bicycle rack reimbursement program and located throughout the City. The bicycle parking accommodations proposed as part of the redevelopment Project will assist the City in continuing to address bicycle parking deficiencies throughout Quincy Center.

4.4.5 Proposed Bicycle Accommodations

As discussed in the Draft EIR and outlined in the proposed Section 61 Finding contained in Section 7.0, the Private Redeveloper has committed to implementing bicycle improvements along Washington Street that will include installing a bicycle lane along between Maple Street and Southern Artery. In the Draft EIR, TEC identified the major bicycle routes to and from the Project area, and these are shown on Figure 4.2. The Proponents have identified additional measures to improve bicycle access and safety along these routes such as bicycle "sharrow" pavement markings and Share-the-Road bicycle signage to alert drivers to shared lanes and the presence of bicyclists along the roadway.

In addition, the Private Redeveloper will install wayfinding signage for bicyclists along major bicycle routes. Examples of these signs are shown on Figure 4.2. The signs will indicate to motorists and bicyclists that the roadway is a designated bicycle route, and will direct bicyclists to major points of interest within the area including Quincy Center and bicycle parking areas.

T:\T0398\CAD\Civil\Graphics\FEIR\T0398.06_Bicycle Improvements Map.dwg



NOT TO SCALE

LEGEND:

- 10-MInute Bicycle Radius
- Share the Road Markings/Signage Improvements
- Bicycle Lane Improvements
- New Quincy Center Project Boundary

This Figure Prepared in Coordination With:

City of Quincy
City Hall
1305 Hancock Street
Quincy, MA 02169

Hancock Adams Associates
1400 Hancock Street
Quincy, MA 02169

TEC
65 Glenn Street
Lawrence, Massachusetts

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51 Sleeper Street
Suite 600
Boston MA 02210
617-695-7799

Figure 4.2 October 31, 2012
Bicycle Improvements Map

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New Quincy Center Redevelopment
Quincy, Massachusetts

The Private Redeveloper's proposed bicycle facility improvements are in addition to the bicycle provisions included within the Adams Green Transportation Improvement Project that are described in Section 4.4.2.

4.4.6 Bicycle Parking Demand

TEC prepared an analysis of the Project's expected bicycle parking demand and researched a number of sources to identify guidelines for the amount of bicycle parking that should be provided in the Project area. Many communities throughout the country have incorporated bicycle parking requirements within local zoning regulations, and a number of communities considered cutting-edge for pedestrian and bicycle accommodations in the United States and Canada were reviewed for guidance:

- Cambridge, Massachusetts;
- Watertown, Massachusetts;
- Portland, Oregon;
- Vancouver, British Columbia;
- Madison, Wisconsin;
- Seattle, Washington;
- Kansas City, Missouri; and
- Pittsburg, Pennsylvania.

All of these communities have similar zoning requirements for the number of bicycle parking spaces that must be provided for varying land uses.

In addition, the Association of Pedestrian and Bicycle Professionals published *Bicycle Parking Guidelines, 2nd Edition*, which provides recommendations for the number and location of short-term and long-term bicycle parking spaces that should be provided for varying land uses. This document is often the source of guidance for communities developing bicycle parking standards. TEC also reviewed bicycle parking recommendations suggested in *Pedestrian and Bicycle Planning; A Guide to Best Practices*[1], which provides similar guidelines for bicycle parking.

[1] Litman, Todd. 2000. *Pedestrian and Bicycle Planning; A Guide to Best Practices*. Victoria Transport Policy Institute (VTPI).

Table 4-1 summarizes the average bicycle parking supply recommended by the sources discussed above for each of the land uses proposed within the New Quincy Center Redevelopment Project.

Table 4-1 Bicycle Parking Recommendations

Land Use	*Recommended Bicycle Parking Spaces*
Residential (Multi-family)	1 space per 3 units
Hotel	1 space per 20 rooms
Restaurant	1 space per 5,000 SF
Retail	1 space per 5,000 SF
Office	1 space per 8,000 SF
College / University	1 space per 10,000 SF

The effectiveness of bicycle parking is largely dependent upon its location and convenience. For example, bicycle racks located a great distance from the entrance to a retail building will likely be underutilized by patrons or employees of the retail space. As such, bicycle parking demand for the Project was calculated individually for each redevelopment block to assess the amount of bicycle parking that should be provided to serve the land uses within each block. Table 4-2 summarizes the bicycle parking recommendations for each redevelopment block based on proposed uses.

Table 4-2 Bicycle Parking Recommendations for Redevelopment Blocks

Block	*Residential*	*Hotel*	*Restaurant*	*Retail*	*Office*	*College*	*Total*
1	15	-	1	1	25	-	**42**
2	-	-	-	4	4	-	**8**
3	67	-	3	3	15	-	**88**
4	79	-	6	11	-	-	**96**
5	159	-	4	-	3	-	**166**
6	214	9	2	3	-	-	**228**
7	94	-	2	10	-	-	**106**
8	-	-	-	60	-	-	**60**
9	-	-	1	19	-	-	**20**
10	-	-	2	3	50	20	**75**
11	-	-	2	3	64	-	**69**
Total	*628*	*9*	*23*	*117*	*161*	*20*	***958***

4.4.7 Bicycle Parking Provisions

The Proponents will use the estimated bicycle parking demand summarized in Table 4-2 as a guide for providing bicycle parking throughout the Project area. Various types of bicycle parking will be provided depending on the land uses within each redevelopment block, as summarized below.

4.4.7.1 Residential Bicycle Parking

Residential land uses will require long-term, secured bicycle parking which would typically be located indoors or within a parking structure. Bicycle parking facilities for residential land uses may consist of a room or a fenced and gated area within a basement or parking garage to which tenants are provided with a key or access card. Residential bicycle parking facilities may also include large bicycle racks located within parking garages. Some residents may choose to store bicycles within their units for added security and ease of use. Short-term bicycle parking should also be provided in the form of a bicycle rack located near the building entrance for use by visitors. A variety of rack types may be used (see Section 4.4.7.5), and at least a portion of these racks should be covered.

4.4.7.2 Hotel Bicycle Parking

Although hotel guests are not expected to bike to the hotel, some hotel employees may choose to commute via bicycle. Therefore, it is recommended that some long-term bicycle parking spaces be provided for the proposed hotel. These may be located within a secured room inside the hotel, within a secured room or fenced area of an attached parking garage, or in a covered area near an employee-accessible hotel entrance.

4.4.7.3 Restaurant and Retail Bicycle Parking

While the majority of bicycle trips to and from restaurants and retail establishments will be by patrons, some employees may also choose to commute via bicycle. As such, a mix of short-term and long-term bicycle parking spaces should be provided for restaurant and retail uses. Short-term parking should be located near entrances, and although a portion should be covered, some may be located in uncovered areas such as between tree wells or other furniture along the fronting sidewalks. Long-term parking should be in covered areas and may be located in a nearby parking garage.

4.4.7.4 Office and College Bicycle Parking

Bicycle parking for office and college uses should primarily consist of long-term parking for employees, faculty, and students. Short-term parking should also be provided for visitors and students who may only be present for a short period of time. Long-term parking should be covered and secured, and in some cases office employers may choose to provide bicycle parking in a secured room within the building to which employees will receive keys or access cards. These parking facilities should be located near locker rooms or showers to

allow employees to change or shower upon arriving at work. Bicycle parking for office and college uses may also be provided in nearby parking garages, but will be less utilized if located farther from the facility. Short-term parking for office and college uses should be located near entrances, and some portion should be covered.

4.4.7.5 Bicycle Parking Design

Short-term bicycle parking will be provided in the form of bicycle racks located near building entrances. Bicycle racks may vary in shape and design, but all should contain some basic elements:

- they should be designed to support a bicycle upright by its frame in two places, enabling the frame and one or both of the wheels to be secured;
- they should prevent the bicycle wheel from tipping over or bending; and
- the main rack element should be of a material and size that resists being cut or detached using common hand tools, particularly those that are easily concealed such as bolt cutters, wrenches, and pry bars.

Inverted U, A, post and loop, and wave-style racks are all commonly used racks that meet the design standards for secured bicycle storage. Comb and toast-style racks are not recommended as they provide no support for the bicycle frame. More innovative bicycle storage designs may be used, such as those shown in Figure 4.3. Proposed bicycle parking for each redevelopment block is shown in Figure 4.4.

4.5 Parking Analysis

The Draft EIR contained parking demand generation calculations which indicated the Project would generate a peak parking demand of 4,702 parking spaces. It is important to note that the analysis assumed that all parking spaces throughout the entire Project area would be available for use by patrons or residents of all redevelopment blocks. However, it may be unreasonable to assume that residents of Blocks 4 through 6 would park in Blocks 8 and 9. Similarly, retail patrons of Blocks 8 and 9 would be unlikely to park in Block 5 due to its distance. As such, the parking demands of each redevelopment block or group of blocks must be satisfied individually.

In addition, the Project will be constructed in steps, as described in Sections 1.7 and 4.8. Similar to satisfying the peak parking demand within each block, the Project must also satisfy the peak parking demand for each step of Project construction. As some Project blocks are under construction, existing parking facilities will be closed, displacing parking demand to other facilities within the Project area.

T:\T0398\CAD\Civil\Graphics\FEIR\T0398.06_Bicycle Parking Map.dwg

This Figure Prepared in Coordination With:

City of Quincy
City Hall
1305 Hancock Street
Quincy, MA 02169

Hancock Adams Associates
1400 Hancock Street
Quincy, MA 02169

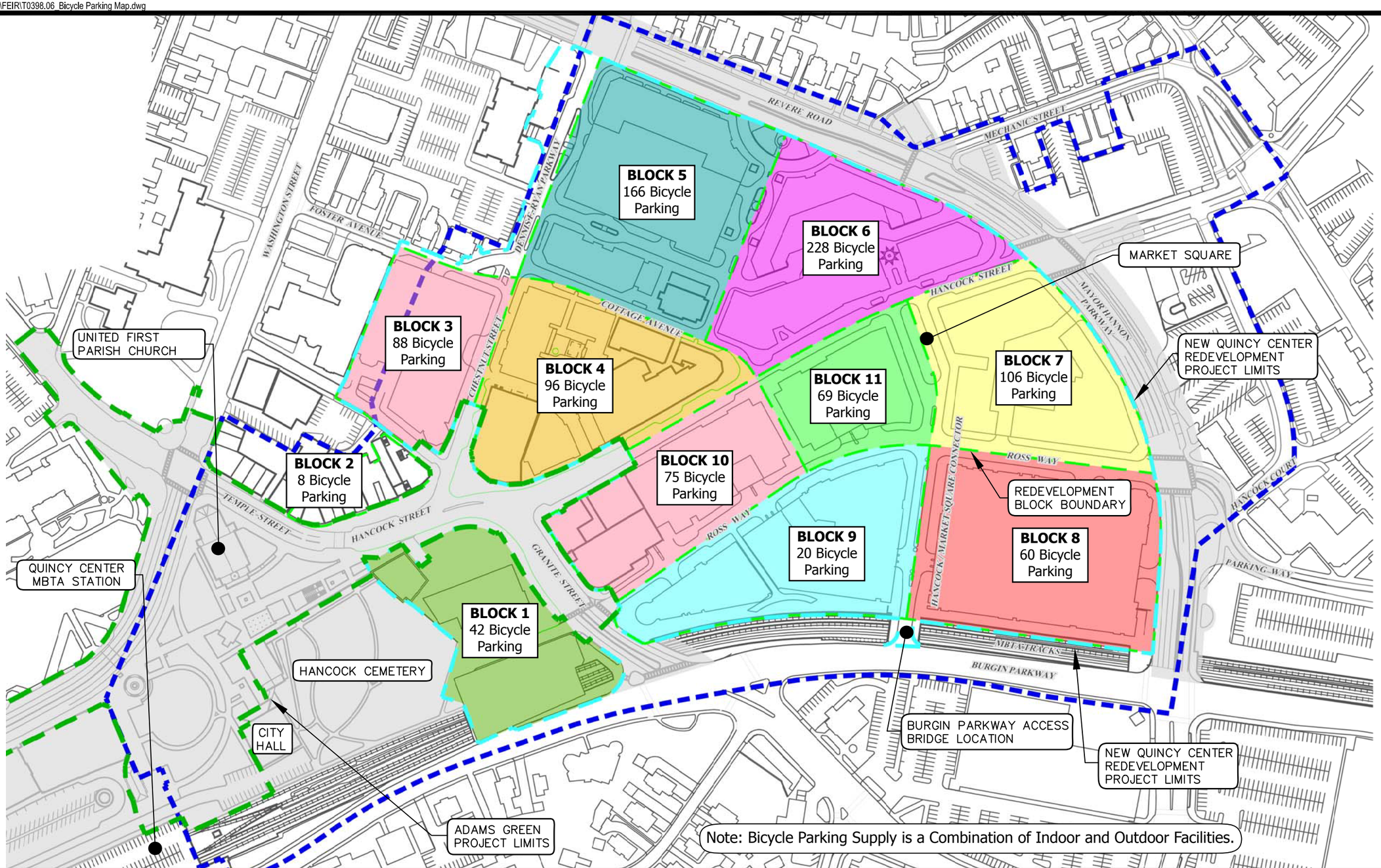
TEC
65 Glenn Street
Lawrence, Massachusetts

SDG
51 Sleeper Street
Suite 600
Boston MA 02210
617-695-7799

Figure 4.3 October 31, 2012
Unique Bicycle Racks

Final Environmental Impact Report
New Quincy Center Redevelopment
Quincy, Massachusetts

T:\T0398\CAD\Civil\Graphics\FEIR\T0398.06_Bicycle Parking Map.dwg



SCALE: 1" = 200'

LEGEND:

- Limits of New Quincy Center Redevelopment
- Adams-Green Project Limits
- Quincy Center Development Block Boundary

This Figure Prepared in Coordination With:

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Quincy, MA 02169

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TEC
65 Glenn Street
Lawrence, Massachusetts

SDG
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Figure 4.4 October 31, 2012
Bicycle Parking Recommendations by Block

Final Environmental Impact Report
New Quincy Center Redevelopment
Quincy, Massachusetts

An updated parking demand analysis has been prepared which accounts for parking spaces within the Project area that will be designated for a specific use and will not be available for shared use. This analysis was completed for each block or group of blocks individually to demonstrate that the parking needs of each block will be met.

4.5.1 Designated Parking Spaces

Not all parking within the Project area will be available for general public use. Rather, some parking spaces will be reserved for residential parking to ensure adequate parking is available for residents, and some spaces will be reserved for valet service use only. Additional parking spaces will be reserved as preferential parking for Zipcars, electric vehicle charging stations, and carpool and rideshare participants.

4.5.1.1 Resident-Only Parking

Redevelopment Blocks 5A and 6B are proposed to contain a total of 643 residential units and 771 parking spaces. One space per unit within these blocks will be designated as residential parking only, and the remaining 128 parking spaces will be public parking spaces available for other uses. The resident-only parking restriction may be regulated with parking stickers or gates operated by key cards, access codes, or vehicle-placed transponders. As such, the peak parking demand for the residential land use within these two blocks was assumed to be at least 643 parking spaces for all time periods throughout the day.

4.5.1.2 Preferential Parking for Carpool and Rideshare Participants

A number of parking spaces throughout the Project area will be designated for preferential parking by carpool and rideshare participants only. Consistent with LEED guidelines regarding parking capacity for new construction or major renovations, 5 percent of non-residential parking spaces will be designated as preferred parking for carpool and rideshare participants.

Blocks 8, 9, 10, and 11 will contain entirely non-residential land uses. Therefore, 5 percent of the parking spaces within these blocks will be designated as preferential parking for carpool and rideshare participants. Approximately 25 percent of the square footage within Block 7 will be non-residential land uses. As such, approximately 1.5 percent (5% of 25%) of the parking spaces within Block 7 will be designated as preferential carpool parking spaces.

For the remaining blocks (i.e., 1, 3, 4, 5, and 6), residential units will make up a portion of the user types. Any parking beyond 1.0 parking spaces per residential unit will be assumed to be subject to the 5 percent standard for preferential parking for carpools. These calculations result in approximately 4.5 percent preferential parking for Block 1, 3.5 percent preferential parking for Block 3, and 1.5 percent preferential parking for Block 4. Block 5 will provide parking for residential units within Block 6, and therefore considered as a unit

1.5 percent of the spaces within these blocks will be designated as preferential parking. Table 4-3 summarizes the available parking spaces within each block and an estimate of the number of spaces that will be designated for a particular uses including resident-only, carpool/rideshare, valet, Zipcar, and electric vehicle charging stations.

A permit will likely be required to park within designated carpool and rideshare spaces. Therefore, it is unlikely that residential tenants or retail and restaurant patrons will utilize the parking designated for carpool and rideshare parking. Instead, these spaces will be utilized mainly by employees of the office, education, retail, and restaurant uses within these blocks, reducing the ability to share parking spaces. To account for this limited sharing between uses, the peak parking demand for office and education uses was assumed to be at least as much as the number of preferential carpool parking spaces for each hour of the day.

Table 4-3 Parking Supply Summary by Designation

Block	*Total Spaces*	*Resident Only*	*Carpool / Rideshare*	*Valet*	*Zipcar**	*Electric Vehicle Charging*	*Remaining General Use*
1	603	0	28	0	57	18	518
2	0	0	0	0	0	0	0
3	722	0	26	0	69	22	627
4	354	0	6	0	34	11	314
5	1205	293	22	159	73	36	658
6	384	350	2	0	3	12	29
7	276	0	4	0	27	8	245
8	316	0	16	0	30	9	270
9	1106	0	55	0	105	33	946
10	154	0	8	0	14	5	132
11	154	0	8	0	14	5	132
Total	**5,274**	**643**	**175**	**159**	**426**	**159**	**3,871**

*These numbers represent a *maximum* number of parking spaces that may be designated as Zipcar parking based on typical zoning regulations. Actual Zipcar parking is likely to be lower than shown.

4.5.1.3 Valet Parking

Although the proposed hotel will be located in Block 6, hotel parking will be located in Block 5. As such, valet parking service will be provided for the hotel so patrons will not need to walk between blocks to park. This valet service will be provided for hotel guests only, and is not expected to be used by hotel employees. Institute of Transportation Engineers (ITE) guidance suggests that peak parking demand for hotels where transit service is provided is approximately 1.02 parking spaces per room. Approximately 1 space per 10 rooms (or 10 percent of the total parking demand) is estimated to be from employees, and the remaining 90 percent of the parking demand is from hotel guests. Based on these

assumptions, a peak valet parking demand of 0.918 parking spaces per room (1.02 x 0.90) is expected to be required to serve the proposed hotel. Hence, the hotel guests in the 173-room hotel will require 159 valet parking spaces.

4.5.1.4 Zipcar or Car-Sharing Parking Spaces

The Proponents propose to designate a number of parking spaces within each redevelopment block for Zipcar or other car-sharing program parking. While zoning regulations are typically established to require *minimum* numbers of parking spaces for a specific use, many municipalities are experiencing problems due to the provision of too many Zipcar or car-sharing parking spaces, which in turn limits the number of spaces available for general use. This over-supply is partly due to the high rents paid by Zipcar and car-sharing programs. To combat this effect, communities like New York City and Cambridge have implemented zoning regulations that limit the *maximum* number of Zipcar or car-sharing parking spaces that may be provided within specific zones. For residential zones, car-sharing spaces are typically limited to a maximum of 10 percent of the total public parking spaces within the zone. Accordingly, no more than 10 percent of the parking spaces not designated for another use within any Project block will be designated for Zipcar or car-sharing use.

The designation of Zipcar parking spaces within the Project area will reduce the number of parking spaces available for shared use by non-Zipcar vehicles. However, the provision of Zipcar service within the Project area is expected to reduce the need to own private vehicles and, therefore, reduce the total number of vehicles parked in the Project area. The increase in parking demand due to a reduction in sharing of spaces and the decrease in parking demand due to a reduction in privately-owned vehicles were assumed to offset each other, and therefore no adjustment was applied for the provision of Zipcar parking within the Project area.

4.5.1.5 Electric Vehicle Charging Stations

Consistent with LEED guidelines for new construction or major renovations regarding low-emitting and fuel-efficient vehicles, a total of 3 percent of the parking spaces within each Project block will be designated as electric vehicle fueling stations. The use of electric vehicles is not expected to alter the peak parking demand within the Project area, since electric vehicles will replace traditional gasoline-fueled vehicles. Therefore, no adjustment has been made for the provision of electric vehicle fueling stations within the peak parking demand calculations (see Table 4-3).

4.5.2 Redevelopment Block Groups

Blocks 7 through 11 are intended to function as one cohesive area. While some parking will be provided within each block, the majority of parking for this area will be provided within Block 9. As such, Blocks 7 through 11 were treated as one Block Group for parking analysis purposes.

Similarly, Blocks 4 through 6 are intended to function as one cohesive area. While some parking will be provided within each block, the majority of parking for this area will be provided within Block 5. Residents will park mostly in Block 5. As such, Blocks 4 through 6 were treated as one Block Group for parking analysis purposes.

Block 2 will not contain any parking spaces, and Block 3 parking has been sized to accommodate patrons of Block 2. As such, Blocks 2 and 3 were considered as one Block Group for parking analysis purposes. Block 3 will also provide some overflow parking for Block 1 and the remaining blocks in the Project area.

4.5.3 Parking Demand Generation for Block Groups

The peak parking demand generated by each Block Group was estimated utilizing parking demand generation rates contained in the ITE *Parking Generation, 4th Edition*. Parking demand for each land use was calculated separately for each hour of the day and superimposed on the parking demand generated by the other land uses within the same Block Group to determine the peak parking demand for the entire Block Group.

For blocks that will contain resident-only spaces, parking demand for each hour was assumed to be at least as high as the number of resident-only spaces to account for spaces that will not be available for shared use even when unoccupied by residents' vehicles.

Similarly, some spaces will be designated for the hotel valet service. Therefore, parking demand for this use was assumed to be at least as high as the number of designated valet parking spaces to account for spaces that will not be available for shared use.

Spaces that will be designated for carpool and rideshare parking only will be utilized mainly by office and educational uses in the Project area. Therefore, the office and college parking demand was assumed to be at least as high as the number of carpool and rideshare parking spaces for each hour since these spaces will not be available for shared use.

The resulting parking demand generation by Block Group is summarized in Table 4-4. Detailed parking demand generation calculations are included in Attachment B.

Table 4-4 Parking Demand Summary by Block Group

Block Group	*Peak Parking Demand*		*Available Spaces*	*Remaining Overflow*
	Weekday	*Saturday*		
Block 1	397	122	603	206
Blocks 2 - 3	520	311	722	202
Blocks 4 - 6	1,557	1,376	1,943	386
Blocks 7 - 11	3,008	1,587	2,006	-1,002
Total	**5,482**	**3,396**	**5,274**	**-208**
Project Area	**5,116**	**3,112**	**5,274**	**158**

As shown in Table 4-4, the available parking spaces within Blocks 1 through 6 will be adequate to accommodate peak parking demands within those blocks while providing overflow parking for Blocks 7 through 11. Peak parking demand for Blocks 7 through 11 will exceed the available parking within that Block Group. Therefore, land uses within those Blocks will need to make use of overflow parking provided within Blocks 1 through 6.

Block Group 7-11 will experience peak parking demand during the weekday midday peak period (11:00 AM to 2:00 PM). However, Block Group 4-6 will experience peak parking demand during the weekday evening (7:00 PM to 10:00 PM) period. During the weekday midday peak (11:00 AM to 2:00 PM), Block Group 4-6 will experience a maximum parking demand of 1,341 parking spaces, leaving 602 parking spaces available for overflow parking from Block Group 7-11. Blocks 1 through 3 will experience peak parking demand simultaneous to Block Group 7-11, but will still provide 408 overflow parking spaces even during the peak parking period. Between Blocks 1 through 6, a total of 1,010 additional parking spaces will be provided for overflow parking from Blocks 7-11 during the weekday midday peak parking period. Since demand for overflow parking from Block Group 7-11 is expected to be 1,002 parking spaces, the proposed parking supply will meet the peak parking demand throughout the Project area.

4.6 Transportation Demand Management

The Draft EIR provided a detailed discussion of the proposed TDM program that addresses public transit services, pedestrian and bicycle treatments, parking measures, and additional strategies (e.g., encouraging carpooling programs, providing Zipcars). That discussion outlined steps the Private Redeveloper will take to facilitate implementation of the TDM

program and summarized tasks for a proposed Transportation Coordinator or Transportation Management Office to manage the TDM program and reach out to residents, business owners, and employees.

Additional TDM measures have been identified to reduce vehicle trips and better manage Project-generated traffic; these measures are summarized below:

- For commercial spaces, the Private Redeveloper will consider creating leases where tenants pay for parking separately from building space to encourage use of parking cash-out to incentivize a reduction in the amount of parking.

- For residential uses, the Private Redeveloper will consider creating leases where tenants pay for additional (more than one pre-designated space) parking separately from building space.

The TDM program as described in the Draft EIR includes several transit-related TDM measures but does not include a transportation shuttle service due to the close proximity of the Project area to the Quincy Center MBTA Station, which provides commuter rail and rapid transit (Red Line) services. In addition, MBTA operates several bus routes that travel through the Project area and provide connections to the MBTA Station. The Proponents are engaged in consultations with the MBTA, and the Project's relation to public transit is discussed in Section 4.2.

4.7 Traffic Monitoring Program

The Private Redeveloper has committed to implementing a Traffic Monitoring Program intended to monitor traffic operations and parking occupancy throughout construction and for a period of time following Project completion. The monitoring program is proposed to confirm that Project impacts are consistent with those predicted in the Draft EIR and updated in this Final EIR, and, if not consistent, to evaluate the need for additional improvements. The monitoring program will evaluate the following:

- Traffic operations at key intersections within the study area;

- Adequacy of parking supply; and

- Effectiveness of TDM measures.

4.7.1 Traffic Operations

Evaluating traffic operations in the Project area will be a two-part process that will include verifying that traffic volumes on Project area roadways are consistent with those projected in the Draft EIR as well as assessing operations at critical intersections within the Project area to determine the need for additional improvements. As part of the monitoring program, the Private Redeveloper will complete the following tasks:

- Collect manual Turning Movement Counts (TMCs) during the weekday morning (7:00 to 9:00 AM), weekday evening (4:00 to 6:00 PM), and Saturday midday (11:00 to 1:00 PM) peak periods at the following intersections:
    - Thomas E. Burgin Parkway/Granite Street;
    - Thomas E. Burgin Parkway/Market Square Connector;
    - Thomas E. Burgin Parkway/Hannon Parkway;
    - Thomas E. Burgin Parkway/Centre Street;
    - Hancock Street/Granite Street;
    - Hancock Street/Chestnut Street;
    - Hancock Street/School Street/Quincy Avenue/Elm Street;
    - Hannon Parkway/Ross Way (relocated)/Parkingway;
    - Hannon Parkway/Hancock Street/Revere Road;
    - Revere Road/McGrath Highway/Dennis Ryan Parkway;
    - Washington Street/Southern Artery;
    - Southern Artery/Sea Street/Coddington Street;
    - Washington Street/Hancock Street;
    - Washington Street/Coddington Street/Temple Street;
    - Temple Street/Hancock Street;
    - Burgin Parkway/Newport Avenue/Adams Street; and
    - Hancock Street/Adams Street/Dimmock Street/Whitney Street/Johnson Avenue.

- Compare TMCs with those predicted in the Draft EIR and Final EIR to determine whether the total number of vehicles entering each intersection exceeds the volumes projected.

- Perform a capacity and queuing analysis using Synchro analysis software to evaluate traffic operations at each of the intersections listed above and compare to operations predicted in the Draft EIR and updated in the Final EIR.

- The Private Redeveloper shall submit a detailed "gateway" and "block level" traffic impact analysis for each development phase. The purpose of this analysis will be to assess the actual land use trip patterns and parcel driveway operations that could have operational impacts on the intersections. The Private Redeveloper shall be responsible for identifying and implementing mitigation or adjustments to implemented traffic improvements that result in traffic operations that substantially conform to the Build Mitigated conditions documented in the Draft EIR for the study area intersections.

- Prepare a memorandum summarizing results of the TMCs and Synchro analysis for submission to MassDOT and the City of Quincy.

4.7.2 Parking

To assess the adequacy of the proposed parking supply to accommodate the peak parking demand, the Private Redeveloper will conduct parking occupancy surveys at each of the off-street parking facilities within the Project area. These parking occupancy surveys will be conducted on a weekday between 10:00 AM and 8:00 PM and on a Saturday between 10:00 AM and 6:00 PM. The surveys will be used to verify that the parking supply satisfies the peak parking demand and to determine whether construction of any "reserve" parking may be warranted. Some parking facilities will be designed to allow for expansion of the parking supply beyond the parking spaces initially constructed (i.e., a "reserve" supply).

4.7.3 TDM Program Monitoring

The Private Redeveloper has committed to implementing a comprehensive TDM Program with the overarching goal of reducing vehicle trips to the Project area by encouraging alternative modes of travel such as transit, walking, bicycling, and carpooling. Therefore, the proposed TDM monitoring program will consist mostly of assessing the use of alternative transportation modes to evaluate the effectiveness of TDM measures and identify where additional measures may be necessary.

A TC or TMO will be provided to manage the TDM program and coordinate with residents, business owners, and employees. In addition to being responsible for distributing announcements, holding promotional events, managing transit subsidy programs, and other daily TDM task, the TC will be responsible for monitoring the program to ensure its goals are met.

Chapter 3 of the Draft EIR identified a number of the Proponents' goals regarding the percentage of trips to and from the Project area that will be made via transit, walking, and bicycling for each land use type (i.e., retail, office, residential, and hotel). In addition to these alternative modes of travel, carpool and rideshare programs will also be developed. Based on a parking requirement that at least 5% of non-residential parking spaces be designated as preferential parking for carpool and rideshare participants, and assuming that at least two occupants would be in each vehicle, approximately 10% of the non-residential trips to and from the Project area will be via carpool or rideshare program. These goals are summarized in Table 4-5.

Table 4-5 Goals for Alternative Transportation Use

Land Use	*Transit*				*Walking*	*Bicycling*	*Carpool / Rideshare*
	Bus	*Rapid Transit*	*Commuter Rail*	*Total Transit*			
Retail	7%	7%	1%	15%	4%	1%	10%
Office	9%	9%	2%	20%	8%	1%	10%
Residential	4%	19%	2%	25%	8%	1%	-
Hotel	3%	10%	2%	15%	4%	1%	-

The TC will be responsible for monitoring the TDM program to ensure that the general goals listed in Table 4-5 are met. To monitor the program, the TC will distribute surveys to residents and employees of the retail, offices, and hotel within the Project area asking them to identify their use of various travel modes. The TC will also conduct surveys at entrances to major retail blocks to gauge travel mode use by retail patrons.

To further evaluate the effectiveness of the TDM program, the TC will survey parking facilities to identify how many bicycle spaces, preferential carpool spaces, Zipcar spaces, electric vehicle fueling stations, or other spaces designated for alternative transportation modes are occupied throughout the day. Should these parking spaces be less than 50 percent utilized during the peak parking demand period, additional TDM measures may be necessary to improve use of alternative transportation means. This is particularly true should the parking monitoring discussed in Section 4.7.2 indicate that the peak parking demand is reaching the capacity of parking supply.

4.7.4 Schedule

The Traffic Monitoring Program will begin six months after issuance of the first certificate of occupancy for the Project, and will continue on an annual basis throughout construction for five years following full occupancy of the Project. It is possible that changes in the economy or Project funding may delay portions of the Project or result in a portion of the Project never being constructed. In such a situation, the Traffic Monitoring Program may be suspended indefinitely if five years have passed since issuance of a building permit for constructing a phase of the Project. The Traffic Monitoring Program will recommence six months after issuance of a certificate of occupancy, should the Proponents apply for additional building permits while the monitoring program is suspended.

4.8 Construction-Period Transportation Impacts and Management

The New Quincy Center Redevelopment Project will be constructed in three steps. Step 1 will begin with Block 4 and then continue with Blocks 7, 8, 9, and 11; for purposes of this construction period transportation impacts and management analysis, redevelopment of Blocks 4 is referred to as Step 1A. Step 2 will involve construction of Blocks 3, 5, 6A, 6C, and 10. Step 3 will involve construction of Blocks 1 and 6B.

Table 4-6 summarizes the phased development of proposed uses and available parking spaces during each of the construction steps described above.

Table 4-6 Phased Development of Proposed Uses and Parking

Land Use	*Step 1A*	*Step 1*	*Step 2*	*Step 3*
Residential	0 units	236 units	517 units	1,487 units
Hotel	0 rooms	0 rooms	0 rooms	173 rooms
Movie Theater	768 seats	0 seats	3,210 seats	3,210 seats
Health Club	0 sf	0 sf	33,709 sf	33,709 sf
Classroom	0 sf	0 sf	0 SF	159,466 sf
Office/Medical Office	601,505 sf	420,051 sf	806,077 sf	1,291,946 sf
Retail	236,555 sf	185,773 sf	433,241 sf	460,064 sf
Restaurants	3,207 seats	3,332 seats	2,733 seats	4,015 seats
Off-Street Parking	2,107 spaces	1,464 spaces	2,733 spaces	4,835 spaces

The following sections discuss how site access, parking, and truck routing will be handled during each step of construction.

4.8.1 Site Access

4.8.1.1 Step 1A – Block 4 Construction

Step 1 of Project construction will begin with Block 4 redevelopment, which in this section is referred to as Step 1A. Since this block is self-contained within one City block bounded by Hancock Street, Chestnut Street, and Cottage Avenue, no long-term road closures or traffic detours are expected during this phase. As redevelopment of Block 4 will result in only minimal increases in traffic volumes through the Project area, and reserve capacity exists as intersections surrounding Block 4, no additional mitigation will be required to accommodate redevelopment of Block 4. The Adams Green Transportation Improvement Project is expected to be constructed simultaneously with Block 4 redevelopment, which will allow for roadway improvements along Chestnut Street and Hancock Street to be constructed concurrently with Adams Green improvements and construction of Block 4.

Access to the Project area will be maintained via the existing roadways, with temporary lane closures anticipated along Hancock Street, Chestnut Street, and Cottage Avenue to accommodate the roadway and sidewalk improvements proposed as part of this phase. As part of the Adams Green project, the section of Hancock Street between Washington Street and Temple Street will be discontinued, which will redistribute vehicle trips from Hancock Street to Burgin Parkway and Hannon Parkway. Redistribution of these trips was demonstrated in the traffic volume networks contained in the Draft EIR and within the Functional Design Report (FDR) for the Adams Green Transportation Improvement project.

4.8.1.2 Step 1 – Blocks 7, 8, 9, and 11 Construction

The second phase of Step 1 Project construction will include redevelopment of Blocks 7, 8, 9, and 11. During this step of construction, the area bounded by Hannon Parkway, Burgin Parkway, Granite Street, Ross Way, and Hancock Street will be closed to the public. This will result in closure of Cliveden Street, Parkingway, and Ross Way throughout the duration of this construction phase. The existing Parkingway will be discontinued and reconstructed south of Hannon Parkway as part of this Step. The existing Ross Way will also be discontinued and reconstructed to meet the realigned Parkingway at Hannon Parkway. The Burgin Parkway Access Bridge and Market Square Connector will be constructed as part of this Step.

Although Cliveden Street, Parkingway, and Ross Way will be closed to traffic during Step 1, these roadways mainly provide local access to the Ross Way parking garage and development along these roadways that will be demolished or reconstructed as part of Step 1. Therefore, closure of these roadways is not expected to result in a noticeable diversion of traffic to other surrounding roadways. The Ross Way parking garage, as well as the on-street parking along Parkingway, will be removed as part of Step 1, and vehicles currently parking within these areas will be displaced to the underutilized Hancock Lot during this phase of construction. An analysis of the parking displacement is provided in Section 4.8.2.

The existing pedestrian walkway connecting Hancock Street and Ross Way just north of Block 11 will be closed during Step 1 to reconstruct the walkway and redevelop Block 11. Pedestrians seeking to travel between Hancock Street and Ross Way will be directed to use the sidewalk on Granite Street.

4.8.1.3 Step 2 – Blocks 3, 5, 6A, 6C, and 10 Construction

Step 2 will consist of the redevelopment of Blocks 3, 5, 6A, 6C, and 10.

To allow for construction on Blocks 5 and 6, the existing Hancock Lot will be discontinued and vehicles parking in this lot will be displaced to the parking garages constructed in Blocks 7, 8, 9, and 11 as part of Step 1 (see Section 4.8.2). Since Blocks 5 and 6 are self-contained, no long-term roadway closures or traffic detours are expected as part of

redevelopment of these blocks. Temporary lane and sidewalk closures will be required to construct improvements along Dennis Ryan Parkway and Hancock Street. In addition, the sidewalk along the northerly side of Hannon Parkway adjacent to Blocks 5C and 6C will be reconstructed, and meanwhile will remain closed for the majority of construction.

Since Blocks 3 and 10 are self-contained, redevelopment of these blocks will not require any long-term roadway closures or traffic detours. Temporary lane and sidewalk closures may be required to construct improvements along Maple Street, Foster Street, Hancock Street, and Ross Way. One of the surface parking lots within Block 3 is currently not in use. Vehicles parked in the other residential parking lot will be displaced to the parking garage in Block 4 that will be constructed as part of Step 1A (see Section 4.8.2).

4.8.1.4 Step 3 – Blocks 1 and 6B Construction

The final Step of Project construction will involve redeveloping Blocks 1 and 6B, both of which are entirely self-contained. As such, no long-term roadway closures or traffic detours are expected during Step 3. Temporary lane and sidewalk closures are expected along Hannon Parkway, Granite Street, and Hancock Street during the redevelopment.

4.8.2 Parking

In addition to examining the overall parking supply and demand of the Project area, TEC has evaluated the available parking supply in comparison to peak parking demand for each step of Project construction to ensure that the incremental parking supply will satisfy parking demand. Peak parking demand for each step was estimated using the ITE parking generation rates and applying appropriate parking generation credits for transit use, walking and bicycling, and shared trips as outlined in the Draft EIR. Detailed calculations are included in the Attachment B, and a summary is provided in Table 4-7.

Table 4-7 Parking Demand Summary per Construction Step

Block	*Available Parking*	*Weekday*		*Saturday*	
		Peak Demand	*Remaining*	*Peak Demand*	*Remaining*
Step 1A	2,107	2,212	-105	1,259	848
Step 1	1,464	1,882	-418	1,258	206
Step 2	2,733	3,039	-306	1,930	803
Step 3	4,835	4,831	4	2,894	1,941

As shown in Table 4-7, peak parking demand on a weekday during Steps 1A, 1, and 2 will exceed the available parking supply in off-street parking facilities within the Project area. Overflow parking will be available within underutilized parking facilities such as the Galleria Garage, as well as on-street parking spaces. The following sections describe construction-period parking management and the availability of on-street and overflow parking in the vicinity of the Project area for each step of Project construction.

4.8.2.1 Step 1A – Block 4 Construction

During construction of Step 1A, Block 4 will be redeveloped and existing land uses in Blocks 7, 8, 9, and 11 will be demolished in preparation for the start of Step 1. Existing parking spaces within these blocks will be closed, and vehicles will be displaced to the underutilized Hancock Lot and Galleria Garage.

4.8.2.2 Step 1 – Blocks 7, 8, 9, and 11 Construction

During construction of Step 1, Blocks 7, 8, 9, and 11 will be redeveloped and existing land uses within Blocks 3, 5, 6, and 10 will be demolished in preparation for the start of Step 2. Existing parking spaces within these blocks will be closed, and vehicles will be displaced to underutilized lots in the vicinity of the Project area.

4.8.2.3 Step 2 – Blocks 3, 5, 6A, 6C, and 10 Construction

During construction of Step 2, Blocks 3, 5, 6A, 6C, and 10 will be redeveloped and existing land uses in Block 1 will remain open while the existing parking in Block 6B will be displaced to lots constructed as part of Step 1. Some existing land uses within Blocks 3, 5, and 10 will remain open throughout Step 2 construction. Since all parking within these blocks will be closed during Step 2, vehicles will be displaced to other parking lots within the Project area.

4.8.2.4 Step 3 – Blocks 1 and 6B Construction

Redevelopment of Blocks 1 and 6B will occur during Step 3 of Project construction.

4.8.2.5 Overflow Parking

Approximately 187 on-street parking spaces within the Project area will be available throughout Project construction. Peak parking demand for the Project area is anticipated to occur on a weekday between 12:00 and 2:00 PM. There are approximately 191 on-street parking spaces provided on Hancock Street, Washington Street, and Coddington Street in the vicinity of Adams Green that will be unaffected by the proposed Project. During this expected peak demand period, approximately 86% of the on-street parking spaces are occupied based on a parking survey conducted by Howard/Stein-Hudson as part of the Function Design Report for the Adams Green Project, leaving approximately 27 parking spaces open for overflow parking from the Project area during construction of Steps 1A, 1, and 2.

The Galleria Garage (i.e., Presidents Place Garage) contains 1,110 off-street parking spaces. During the weekday midday peak period (12:00 to 2:00 PM), approximately 72 percent of these parking spaces are occupied based on a parking survey conducted by Rizzo Associates (predecessor to Tetra Tech Rizzo, Inc.) as part of the Downtown Quincy Parking Study. Therefore, approximately 311 parking spaces within this garage will be available for overflow parking from the Project area during construction.

The remaining on-street parking spaces within the Project area, vacant on-street parking spaces near Adams Green, and off-street parking spaces within the Galleria Garage will provide a total of 525 parking spaces in the immediate vicinity of the Project area that will be available for overflow parking during construction. Since the peak overflow parking demand is expected to be 418 parking spaces, the available overflow parking will be adequate to accommodate the Project's peak parking demand during construction.

4.8.3 Truck Routing

4.8.3.1 Step 1A – Block 4 Construction

As noted above, the first phase of Project construction will involve redevelopment of Block 4. The Adams Green Transportation Improvement Project to be constructed concurrently with Block 4 redevelopment includes a truck restriction on Hancock Street between Granite Street and Washington Street. Due to this truck restriction, the majority of site-generated construction vehicle trips will be to and from Burgin Parkway. Trucks traveling to the Project area will utilize Burgin Parkway to access Hannon Parkway, then travel west on Dennis Ryan Parkway/Chestnut Street to Block 4. Leaving the site, construction vehicles will travel east on Dennis Ryan Parkway/Chestnut Street, turn right onto Hannon Parkway, and turn either left or right onto Burgin Parkway to connect to the state highway system. Figure 4.5 provides a graphical representation of the major construction vehicle routes to and from Block 4 during Step 1A of Project construction.

4.8.3.2 Step 1 – Blocks 7, 8, 9, and 11 Construction

Step 1 of Project construction will involve redevelopment of Blocks 7, 8, 9, and 11. Since truck access on Hancock Street will be restricted as part of the Adams Green improvements, construction vehicle trips will be mainly to and from Burgin Parkway. Construction vehicles traveling to the site from the north along Burgin Parkway will either turn left onto Granite Street and right onto Ross Way to access the construction area, or will turn right onto Granite Street, turn left onto Hannon Parkway, and turn left onto Ross Way/Parkingway to access the construction area. Construction vehicles traveling to the site from the south along Burgin Parkway will turn right onto Hannon Parkway then turn left onto Ross Way/Parkingway. As an alternative route, construction vehicles may continue north on Burgin Parkway and turn right onto Granite Street and right onto Ross Way to access the site.

As part of the Adams Green Transportation Improvement Project, a median will be constructed on Granite Street, restricting access to Ross Way to right-in/right-out only. As such, all construction vehicles exiting the site will turn right from Ross Way/Parkingway onto Hannon Parkway and then either turn left to go north on Burgin Parkway or turn right to go south on Burgin Parkway to connect to the state highway system. Figure 4.6 provides a graphical depiction of the major construction vehicle travel routes to and from Blocks 7, 8, 9, and 11 during Step 1 of Project construction.

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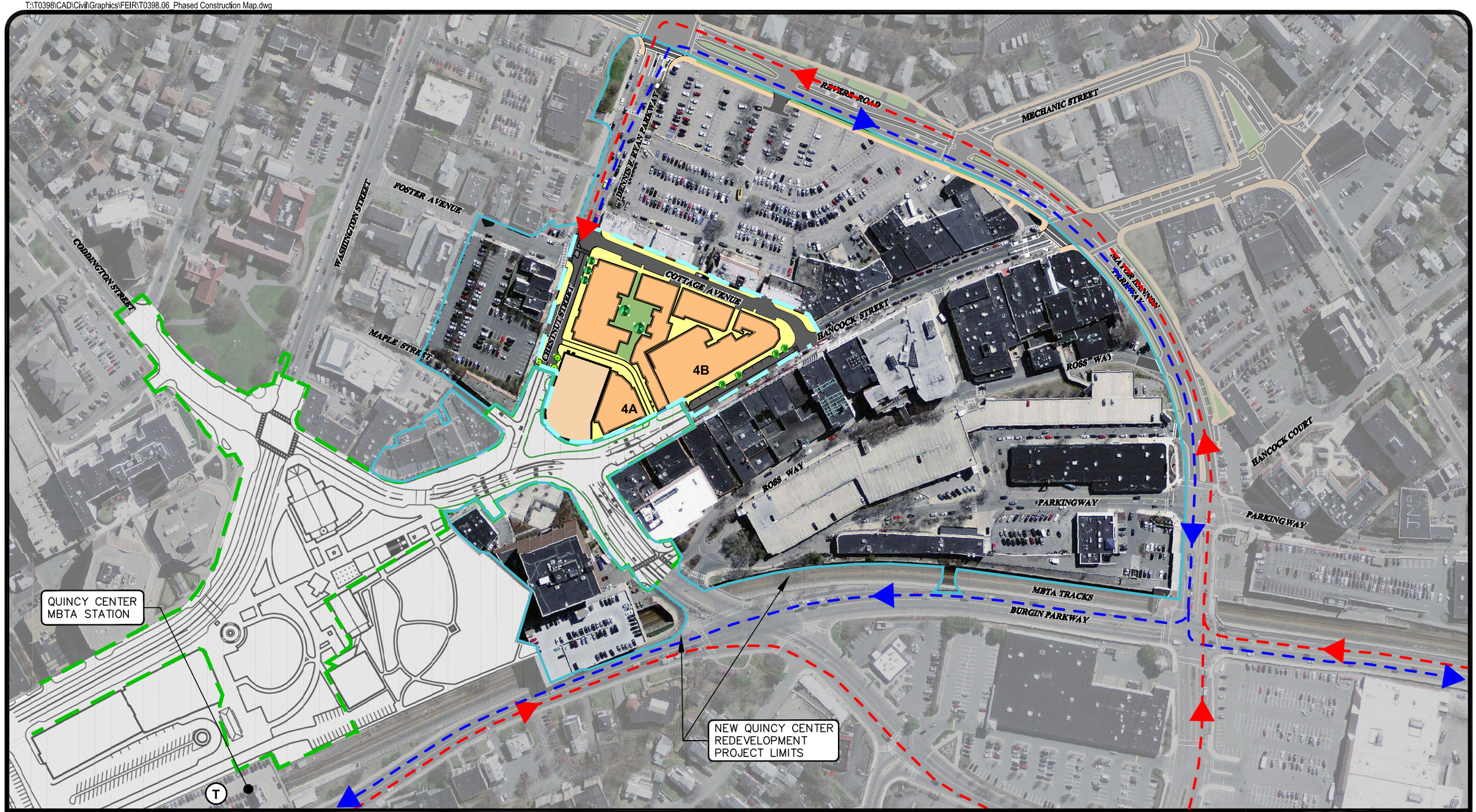

SCALE: 1" = 200'

LEGEND:

- Entering Construction Vehicle Route
- Exiting Construction Vehicle Route
- Completed Phase
- New Quincy Center Project Boundary
- Step 1A Boundary
- Adams Green Boundary

This Figure Prepared in Coordination With:

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Quincy, MA 02169

Hancock Adams Associates
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Suite 600
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Figure 4.5 October 31, 2012
Step 1A Construction
Construction Vehicle Access Routes

Final Environmental Impact Report
New Quincy Center Redevelopment
Quincy, Massachusetts

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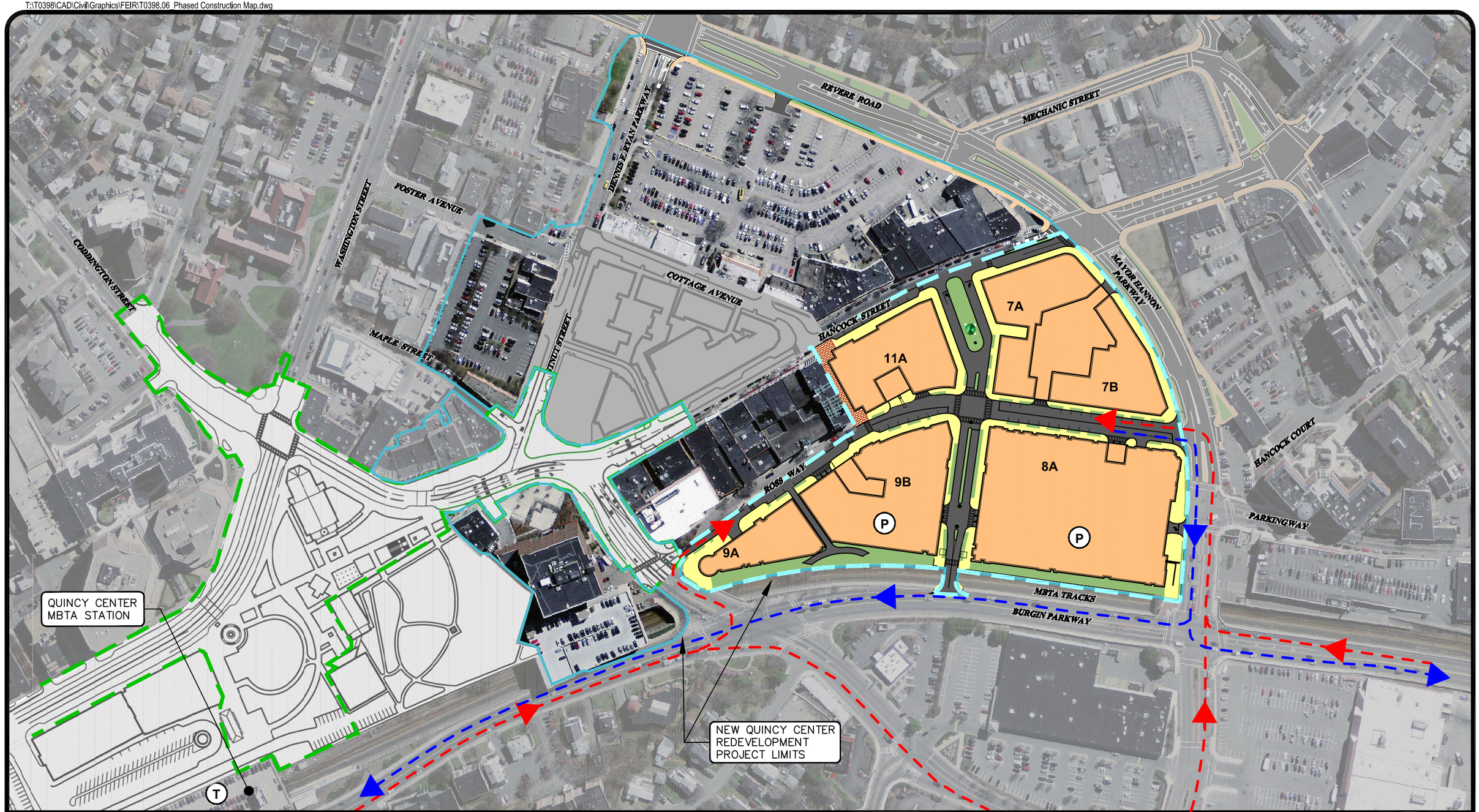

SCALE: 1" = 200'

LEGEND:

- Entering Construction Vehicle Route
- Exiting Construction Vehicle Route
- Completed Phase
- New Quincy Center Project Boundary
- Step 1 Boundary
- Adams Green Boundary

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Figure 4.6 October 31, 2012
Step 1 Construction
Construction Vehicle Access Routes

Final Environmental Impact Report
New Quincy Center Redevelopment
Quincy, Massachusetts

4.8.3.3 Step 2 – Blocks 3, 5, 6A, 6C, and 10 Construction

Step 2 of Project construction involves redevelopment of Blocks 3, 5, 6A, 6C, and 10. Since truck access along Hancock Street through the Adams Green area will be restricted as part of the Adams Green Transportation Improvement Project, construction vehicle access to and from the site will be mainly from Dennis Ryan Parkway/Chestnut Street for Blocks 3 and 5, to and from Hannon Parkway for Blocks 6A and 6B, and to and from Ross Way for Block 10. Figure 4.7 provides a graphical depiction of the major construction vehicle routes to and from Blocks 3, 5, 6A, 6C, and 10 during Step 2 of Project construction.

As shown in Figure 4.7, all construction vehicles traveling to Blocks 3, 5, and 6 will utilize Burgin Parkway to travel to Hannon Parkway. These vehicles will either turn left from Hannon Parkway into Blocks 5 and 6 at the former entrance to the Hancock Lot or will continue north on Hannon Parkway and turn left onto Dennis Ryan Parkway/Chestnut Street to access Blocks 3 and 5. Traffic leaving Blocks 3, 5, and 6 will exit via the reverse direction onto Hannon Parkway to access Burgin Parkway and connect to the state highway system.

Construction vehicles traveling to Block 10 from the north along Burgin Parkway will either turn left onto Granite Street and right onto Ross Way, or will turn right onto Granite Street, turn left onto Hannon Parkway, and turn left onto Ross Way. Due to the proposed median on Granite Street restricting access to Ross Way to right-in/right-out, all construction vehicles exiting Block 10 will travel south on Ross Way and turn right on Hannon Parkway to access Burgin Parkway and connect to the state highway system.

4.8.3.4 Step 3 – Blocks 1 and 6B Construction

Step 3 of Project construction involves redevelopment of Blocks 1 and 6B. Since the Adams Green project will implement a truck restriction on Hancock Street through the Adams Green area, construction vehicle access to Block 1 will be to and from Granite Street and Burgin Parkway. Similarly, construction vehicle access to/from Block 6B will be to and from Hannon Parkway and Burgin Parkway. Figure 4.8 provides a graphical representation of the major construction vehicle routes to and from Blocks 1 and 6B during Step 3 of Project construction.

Construction vehicles traveling to Block 1 from Burgin Parkway will turn onto Granite Street and turn left into Block 1. The Adams Green Transportation Improvement Project will restrict truck access on Hancock Street through Adams Green and on Granite Street east of Ross Way. Therefore, a temporary break in the median on Granite Street will need to be constructed to allow truck access into Block 1 during Step 3 construction. This median will be reconstructed following redevelopment of Block 1.

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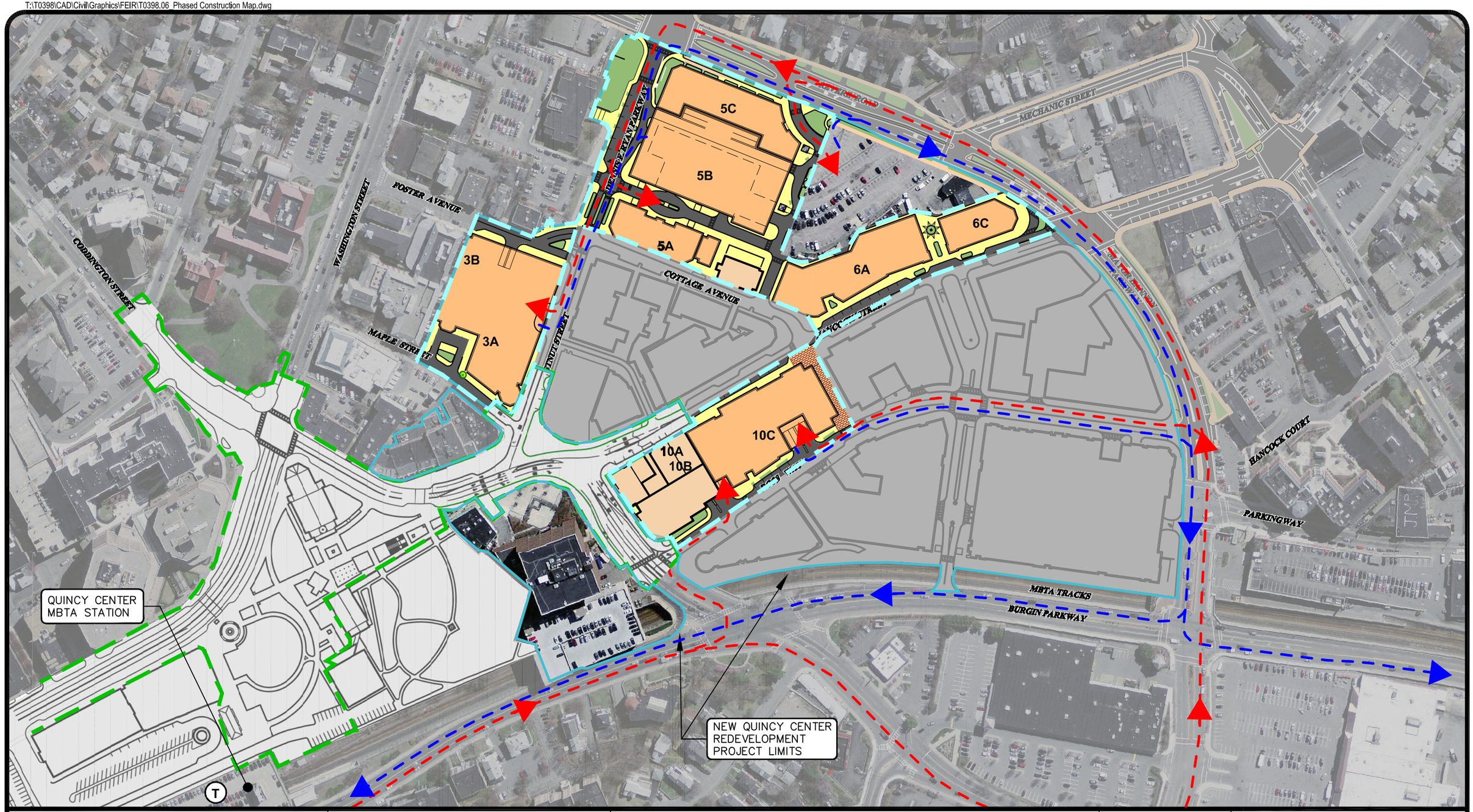

SCALE: 1" = 200'

LEGEND:

- Entering Construction Vehicle Route
- Exiting Construction Vehicle Route
- Completed Phase
- New Quincy Center Project Boundary
- Step 2 Boundary
- Adams Green Boundary

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Figure 4.7 October 31, 2012
Step 2 Construction
Construction Vehicle Access Routes

Final Environmental Impact Report
New Quincy Center Redevelopment
Quincy, Massachusetts

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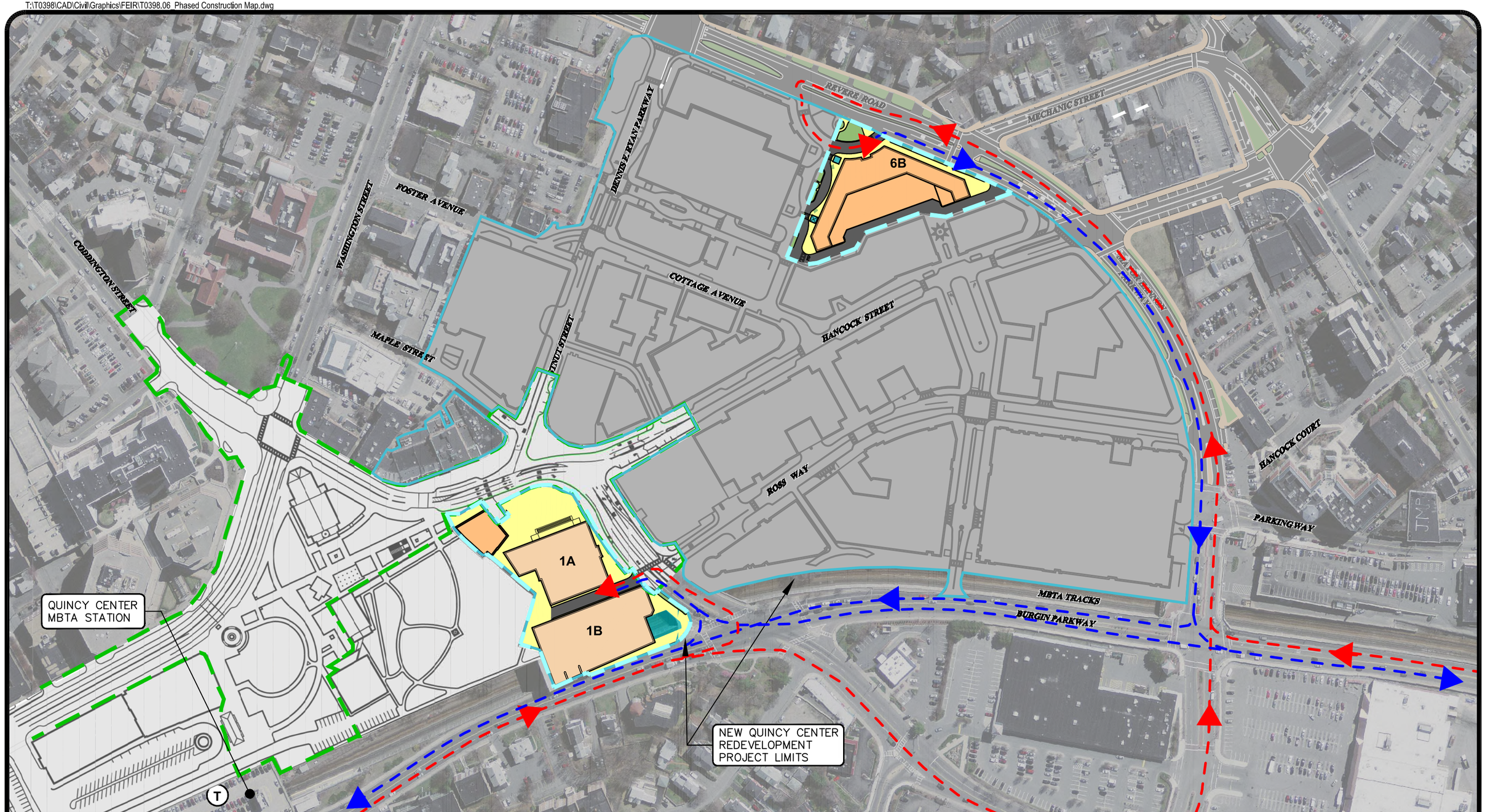

SCALE: 1" = 200'

LEGEND:

- Entering Construction Vehicle Route
- Exiting Construction Vehicle Route
- Completed Phase
- New Quincy Center Project Boundary
- Step 3 Boundary

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Figure 4.8 October 31, 2012
Step 3 Construction
Construction Vehicle Access Routes

Final Environmental Impact Report
New Quincy Center Redevelopment
Quincy, Massachusetts

Construction vehicles traveling to Block 6B from the north along Burgin Parkway will turn right onto Granite Street, turn left onto Hannon Parkway, and then turn left into Block 6B at the former driveway to the Hancock Lot, which will be reconstructed as part of Step 2. Construction vehicles traveling to Block 6B from the south along Burgin Parkway will turn right onto Hannon Parkway and then turn left into Block 6B at the former Hancock Lot driveway. Construction vehicles exiting Block 6B will exit onto Hannon Parkway and head west toward Burgin Parkway to connect to the state highway system.