

January 31, 2008

John Fitzgerald, Senior Management Economic Development
Boston Redevelopment Authority
Boston City Hall, 9th Floor
Boston, MA 02201

RE: Boston College Amendment to the IMP Brighton Campus

Dear John:

Thank you for the opportunity to comment on the Institutional Master Plan Notification Form/Project Notification Form ("IMP/NF/PNF") for Boston College's proposed IMP 10 year plan.

Boston College's Institutional Master Plan presents plans for the physical development of Boston College's Chestnut Hill, Brighton and Newton CAMPUSES. The main components of the ten-year Institutional Master Plan are the construction of four new academic buildings, a Recreation Center, UNIVERSITY Center, a fine arts theatre, parking facilities, new and replacement on-campus student housing, and renovations of existing .

The Boston Transportation Department (BTD) has reviewed the Institutional Master Plan Notification Form/Project Notification Form ("IMP/NF/PNF") for Boston College's proposed IMP 10 year plan and has the following comments/concerns:

TRIP GENERATION

- Page 6-11 states that here could be some limited trip generation associated with the retail portions of the projects located on Commonwealth Avenue. Clarification as to what type of retail is being proposed and where along with mitigation measures, analysis and results of the analysis.
- The proponent should be using BT's mode share XX for this area.

TRANSIT

- The purpose of evaluating the existing routes, ridership, and hours of operation of the MBTA service and Boston College shuttle is to identify redundancies in service and be able to develop recommendations to improve transit services and ridership on the vicinity of Boston College. Please clarify your findings and recommendations on this issue.
- Has the proponent thought about consolidating the MBTA service with the Boston College Shuttle service!?
- Would residents in the area be able to ride the shuttle service?

PARKING

- What are the current parking fee policies for Boston College and how do they compare to other colleges in the area? What are the new fees and what is the parking fee plan for the next 10 years? Are students offered a discount?
- There are currently 788 parking spaces on the Brighton Campus. The proponent is proposing on building a parking garage for 500 new spaces and displacing 425 spaces. How soon would the 425 spaces be displaced? Immediately or over time?
- The proponent should clearly illustrate the off-campus on-street and off-street parking spaces and on-campus on-street and off-street spaces. This illustration should also include regulatory parking such as; Resident Parking.
-

TRANSPORTATION INFRASTRUCTURE CHANGES

- The propose relocation of St. Thomas More Road needs to be supported by a full traffic analysis showing proposed and existing traffic volumes for all of the proposed options.
- The proponent proposes to enter the Brighton Campus via Lake Street. There are currently 3 entrances via Lake Street. The community has expressed concern about vehicles using these locations. The proponent should clearly indentify what location are going to be used by whom, as well as, submitting a proposed traffic analysis.
- BTD would like to see the proponent tighten up St. Thomas More Road, Fr. Herlihy Drive and Commonwealth Avenue Intersection.
- The proponent should clarify any right of way issues that are associated with the relocation of St. Thomas More Road.
- There is currently an entrance to the Brighton Campus form Foster Street. What will the overall use of the entrance be?

MBTA Boston College Green Line Station

- The proponent should include a detail design and analysis of the proposed center platform alternative on Commonwealth Avenue. This design and analysis is critical to the traffic management of the intersections of St. Thomas More Road/Commonwealth Avenue, Lake Street/Commonwealth Ave, as well as, the surrounding Community.

PEDESTRIAN/BIKE PATHS

- The proponent should show in detail how the continuous pedestrian corridor is going to tie all the campuses together.
- The proponent is currently showing a pedestrian bridge at the proposed intersection of St. Thomas Moore Road and Commonwealth Avenue. What was the thought process as to who would use it and will it be handicapped accessible?
- Will bicycle paths and/or lanes be a part of this continuous corridor between campuses?
- BTD would like to see a bicycle lane installed on Beacon Street between Chestnut HILL Avenue and St. Thomas More Road.

BTD looks forward in working with Boston College and the BRA in developing a traffic management plan that will help minimize traffic impacts and improve transportation conditions in the area.

In conclusion I have attached BTD's standard Scope of Work. BTD looks forward in working with Boston College to identify specific components of the Scope of Work that will need to be done. BTD looks forward in working with Harvard University in expediting the submittal of a Draft Project Impact Report (DPIR) and Preliminary Adequacy Determination (PAD).

Sincerely,

William H. Conroy IV,
Senior Planner

- Cc: Vineet Gupta, Director of Policy and Planning
- John DeBenedictis, Director of Engineering

BOSTON TRANSPORTATION DEPARTMENT
TRANSPORTATION ACCESS PLAN GUIDELINES

And

SCOPE OF WORK

Boston is a dense city, with high levels of vehicular congestion, pedestrian traffic, and parking demand. New development of all types increases travel demand, and will have transportation impacts that require analysis, review, and mitigation. Through the City of Boston's Article 80 development review process, the Boston Transportation Department (BTD) works with development team (the "project proponent") to ensure that they thoroughly evaluate the transportation impacts associated with the proposed project, propose and analyze ways to mitigate these transportation impacts, and implement appropriate mitigation measures.

The project proponent is responsible for assessing and mitigating the short-term and long-term impacts of the proposed project. Submitting the following documentation to BTD:

1. Transportation Access Plan. The Transportation Access Plan shall fully describe all transportation-related issues surrounding the proposed project. It should include the following principal components:
 - Description of Existing Transportation Conditions. A summary of existing traffic, public transit, pedestrian, bicycle, and parking conditions in the study area.
 - Evaluation of the Proposed Project's Long-Term Transportation Impacts. A detailed description of the proposed project and a detailed analysis of the project's long-term impacts on traffic, public transit, pedestrian, bicycle, and parking conditions.
 - Mitigation of the Project's Long-Term Transportation Impacts. Identification of appropriate measures to mitigate project impacts, including physical and operational improvements, travel demand management (TDM), and long-term project impact monitoring.
 - Description of the Project's Short-Term Construction Impacts and Proposed Mitigation. General overview of the project's construction impacts, construction schedule and phasing, and measures to mitigate the short-term impacts. This is a summary of the more detailed Construction Management Plan (CMP) to be submitted to BTD under separate cover.

The Access Plan typically comprises the transportation component(s) of the proposed project's various environment filings, such as the Draft Project Impact Report (DPIR) or the Final Project Impact Report (FPIR); in special cases, the Access Plan may be a separate document. In any case, the Access Plan should adhere to the guidelines and scope of work set forth below. The analysis and reporting guidelines below are designed to be general enough that they will apply to most or all major development projects; they are also designed to be specific enough to ensure adequate information and equitable review of all development projects. These guidelines shall be followed as closely as possible. If the project proponent believes that certain provisions are not applicable to the development in question, the proponent shall obtain BTD's explicit approval to forego those provisions.

2. Construction Management Plan. The Construction Management Plan (CMP) shall include a detailed proposal for the proposed project's construction: schedule, phasing, and occupancy of the public right-of-way, access and delivery requirements, transportation impacts, and mitigation. The proponent shall submit the CMP to BTM, under separate cover from the Access Plan. The project's general contractor typically prepares the CMP. Guidelines for preparation of the CMP are available from BTM. The CMP shall be completed prior to the issuance of a Building Permit from the City of Boston's Inspectional Services Department (ISD).
3. Transportation Access Plan Agreement. The Transportation Access Plan Agreement (TAPA) is a formal legal agreement between the project developer and BTM. The TAPA formalizes the findings of the Access Plan, the mitigation commitments, elements of access and physical design, and any other responsibilities of the developer and BTM. Since the TAPA must incorporate the results of the technical analysis, physical design, and assessment of mitigation requirements, it must be executed after these processes have been completed. However, the TAPA must be executed prior to approval of the project's design through the City of Boston's Public Improvements Commissioner (PIC). An electronic copy of the basic TAPA form is available from BTM. It is the proponent's responsibility to complete the TAPA so that it reflects the specific findings and commitments for the project, and to get BTM review and approval of the document.

STUDY AREA

The Access Plan shall consist of a thorough analysis of the proposed project's transportation impacts throughout the relevant study area. The study area shall comprise the public right-of-way and important transportation elements of the area described by the following list of intersections:

- a. Commonwealth Avenue @ Lake Street/St. Thomas More Road
- b. Commonwealth Avenue @ Foster Street
- c. Commonwealth Avenue @ Chestnut Hill Ave.
- d. Commonwealth Avenue @ Old Colony
- e. Commonwealth Avenue @ South Street
- f. Commonwealth Avenue @ Brighton Campus Driveway
- g. Proposed St. Thomas Road @ Commonwealth Avenue
- h. Beacon Street @ St. Thomas Moore Road/Chestnut Hill Driveway
- i. St. Thomas Moore Road @ Chestnut Hill Driveway
- j. Father Herilhy Way @ St. Thomas Moore Road
- k. Beacon Street @ College Road/Hammond Street
- l. Beacon Street @ Chestnut Hill Avenue
- m. Beacon Street @ Reservoir Avenue
- n. Lake Street @ Washington Street
- o. Lake Street/Kenrick Street/Glenmont Road
- p. Foster Street @ Rogers Park Avenue
- q. Foster Street Brighton Campus Drive
- r. Foster Street @ Washington Street
- s. Washington Street/ Chestnut Hill Avenue/Market Street

The proponent shall review all relevant project proposals and planning studies that would affect the study area, and incorporate these into the transportation analysis, as appropriate.

DEFINITION OF TASKS

Task 1. Description of Existing Transportation Conditions

The Existing Conditions component shall summarize the current status of the transportation system within the study area. It shall focus on the issues listed below, and shall identify any existing problems or deficiencies in the transportation system. The Existing Conditions analysis will form the basis for projecting future conditions, and enable comprehensive assessment of the proposed project's transportation impacts.

- 1.1 Project Site Conditions. Describe general conditions in the vicinity of the project site, including:
 - Existing land use, including existing site square footage, building square footage, number of employees or residents, zoning provisions, and other applicable information
 - Physical condition of the site, existing access and egress
 - Major streets and intersections in the vicinity of the site
 - On-street regulationsInclude a survey of existing conditions.
- 1.2 Traffic. The Access Plan shall include traffic volume counts at the study area intersections for weekday morning and evening peak periods under existing conditions. These shall be classification counts in areas with high volumes of heavy vehicles. The morning and evening peak volumes represent a minimum for traffic impact analysis. Depending upon the nature of the proposed project or local conditions, BTD may require traffic analysis for additional conditions, such as the Saturday afternoon peak.

Existing capacity analyses shall be performed to determine level of service at all study area intersections. Analyses shall reflect realistic peak period characteristics, including pedestrian volumes, requirements for pedestrian phases, curb operations (bus stops, pick-up / drop-off), usable lanes, grade, and percentage of heavy vehicles. Appropriate traffic models will be discussed below.

- 1.3 Parking. The Access Plan shall summarize the parking supply within ¼ mile of the project site. The parking inventory shall focus on publicly available spaces, but shall also include private resident or employee spaces as well, if the information is available. The parking inventory shall include:
 - a. Location (block face for on-street spaces, facility for off-street spaces). Include a graphic representation of the parking supply locations with respect to the project.
 - b. Type of Space
 - On-street (metered, resident parking, unregulated, etc.)
 - Off-street (surface lot or garage, user type: resident, employee, commercially-available, customer, etc.)
 - c. Parking Fees, by Type of Space
 - d. Percentage Utilization During Parking Peak (assume 12 noon)

This inventory can be supplemented with data from published sources such as the BTD's 1987 Downtown Parking Inventory Study, updated as necessary with survey data.

If there is currently parking associated with the project site, the Access Plan shall summarize the parking use and management. The description of existing on-site parking use shall include: number of spaces; occupation of spaces by user type, hour of peak occupancy, turnover rate, parking fees, and any high-occupancy vehicle spaces.

1.4 Transit. The Access Plan shall describe the study area's mass transit system:

a. Transit Supply

- Massachusetts Bay Transportation Authority (MBTA) services, proximity to site
 - Service (mode of transit, line, closest station stop)
 - Service characteristics (frequency during peak periods, geographic connections)
 - Physical characteristics (station conditions, rolling stock)
 - Private transit services (summarize characteristics above)
 - Other transit and high-occupancy vehicle (HOV) services

b. System Utilization

- Capacity by line during peak periods
- Current ridership and percentage capacity utilization by line during peak periods

1.5 Pedestrians. The Access Plan shall include a description of pedestrian conditions on sidewalks and intersections adjacent to the site, including major pedestrian routes and desire lines in and around the site, volumes of pedestrians on these routes, and the conditions of these corridors, including any deficiencies or barriers.

Pedestrian volumes shall be counted and pedestrian level of service shall be calculated at the following intersection crossings and sidewalk locations:

- a. Commonwealth Avenue @ Lake Street/St. Thomas More Road
- b. Commonwealth Avenue @ Foster Street
- c. Commonwealth Avenue @ Chestnut Hill Ave.
- d. Commonwealth Avenue @ Old Colony
- e. Commonwealth Avenue @ South Street
- f. Commonwealth Avenue @ Brighton Campus Driveway
- g. Proposed St. Thomas Road @ Commonwealth Avenue
- h. Beacon Street @ St. Thomas Moore Road/Chestnut Hill Driveway
- i. St. Thomas Moore Road @ Chestnut Hill Driveway
- j. Father Herilhy Way @ St. Thomas Moore Road
- k. Beacon Street @ College Road/Hammond Street
- l. Beacon Street @ Chestnut Hill Avenue
- m. Beacon Street @ Reservoir Avenue
- n. Lake Street @ Washington Street
- o. Lake Street/Kenrick Street/Glenmont Road
- p. Foster Street @ Rogers Park Avenue
- q. Foster Street Brighton Campus Drive
- r. Foster Street @ Washington Street
- s. Washington Street/ Chestnut Hill Avenue/Market Street

Describe pedestrian accommodation at signalized intersections in the study area (i.e. exclusive vs. concurrent, crossing time provided).

- 1.6 Bicycles. The Access Plan shall describe existing bicycle usage, primary bicycle routes, Accommodation of bicycles in the public right-of-way, and the current supply and location of any existing bicycle racks on or adjacent to the project site. On a day with good weather (record date and weather conditions), survey bicycle rack utilization by location. Document storage of bicycles in locations without bicycle racks. Include bicycle volume counts at the following intersections and bike routes:

- a. Commonwealth Avenue @ Lake Street/St. Thomas More Road
- b. Commonwealth Avenue @ Foster Street
- c. Commonwealth Avenue @ Chestnut Hill Ave.
- d. Commonwealth Avenue @ Old Colony
- e. Commonwealth Avenue @ South Street
- f. Commonwealth Avenue @ Brighton Campus Driveway
- g. Proposed St. Thomas Road @ Commonwealth Avenue
- h. Beacon Street @ St. Thomas Moore Road/Chestnut Hill Driveway
- i. St. Thomas Moore Road @ Chestnut Hill Driveway
- j. Father Herilhy Way @ St. Thomas Moore Road
- k. Beacon Street @ College Road/Hammond Street
- l. Beacon Street @ Chestnut Hill Avenue
- m. Beacon Street @ Reservoir Avenue
- n. Lake Street @ Washington Street
- o. Lake Street/Kenrick Street/Glenmont Road
- p. Foster Street @ Rogers Park Avenue
- q. Foster Street Brighton Campus Drive
- r. Foster Street @ Washington Street
- s. Washington Street/ Chestnut Hill Avenue/Market Street

- 1.7 Off-Street Loading Guidelines – Harvard University needs to adhere to BTD's 'Off-Street Loading Guidelines', a copy of which is attached for reference. The guidelines can also be accessed from the City of Boston website at http://www.cityofboston.gov/transportation/off_street.asp. Adherence to the 'Off-Street Loading Guidelines' will ensure safe and efficient loading access, minimize adverse impacts on traffic-flow and pedestrian safety, and provide consistent guidelines

Task 2. Evaluation of Proposed Project's Long-Term Transportation Impacts

The central component of the Access Plan is the evaluation of the proposed project's long-term transportation impacts. The Access Plan must evaluate these impacts in detail, for all the transportation modes and aspects that will be affected, including traffic, parking, public transit, pedestrians, bicycles, and service and loading. These impacts must be compared to the appropriate baseline condition, the Future No-Build Condition. The following are the principal issues, modes, and conditions that must be analyzed.

- 2.1 Project Description. The Access Plan shall include a summary of the key project characteristics that are relevant to the project's transportation impacts. These include:
- Project name and street address
 - Study area, including critical intersections
 - Anticipated construction start and completion dates
 - Relevant zoning regulations with respect to use, parking and other characteristics
 - Required permits, variances, and licenses
 - Site area
 - Project's gross square footage and floor-area ratio (FAR)
 - Gross square footage by use
 - Other relevant variables (e.g. number of dwelling units, number of hotel rooms, number of employees)
 - Number of parking spaces, specified by use type
 - Number of loading bays, dimensions of bays, design loading vehicle

- 2.2 Trip Generation Analysis. The Access Plan shall include a clear and detailed trip generation analysis for the proposed uses of the site. This analysis shall include:

- a. Person-Trip Generation. The Access Plan shall summarize the proposed project's person-trip generation, for daily, AM peak, and PM peak trips. For certain uses, person-trips shall also be calculated for other time periods, such as Saturday afternoon peak hour (e.g. cultural or entertainment use in an area with significant weekend congestion).

The person-trip calculations shall be based on appropriate trip generation rates, typically the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 6th Edition*. The ITE manual includes comprehensive vehicle-trip generation rates based on surveys in suburban locations throughout the United States. Because Boston benefits from an excellent public transit system and pedestrian access, ITE vehicle-trip generation rates are not directly applicable to resulting vehicle trips. ITE rates shall be used to generate total person-trips by correcting for vehicle occupancy rate (VOR). Appendix xx includes a compilation of the most common ITE trip generation rates and corresponding VOR. The proponent shall use these trip generation rates whenever possible. Where necessary, these trip generation rates may be supplemented by survey data or information from other sources (subject to BTM requirement and/or approval). The person-trip generation analysis shall be summarized in a clear table, in the body of the Access Plan, including all of the following information:

- Land use type
- Square footage, by land use type
- Vehicle-occupancy rate (VOR) assumption, by land use type (for translation of vehicle-trip rates to person-trip rates)
- Daily person-trip generation (by land use and overall)
 - Daily person-trip generation rate (per 1,000 square feet, or per unit)
 - Resulting daily person-trip ends
- AM peak hour person-trip generation (by land use and overall)
 - AM peak hour person-trip generation rate
 - AM peak hour person-trips, entering

- AM peak hour person-trips, exiting
 - PM Peak Hour person-trip generation (by land use and overall)
 - PM peak hour person-trip generation rate
 - PM peak hour person-trips, entering
 - PM peak hour person-trips, exiting
 - Source for trip generation rates
- b. Mode Split and Vehicle Occupancy Rate. Person-trips shall be apportioned among the various principal modes (automobile, public transit, walking, bicycling) using an appropriate mode split. The mode split shall be presented as percentages of automobile, public transit, and walk / bicycle travel. Working with BTM, the Central Transportation Planning Staff (CTPS) has compiled appropriate mode split assumptions for various sections of Boston, according to trip type. Zone 10 should be used to determine these mode splits, along with VOR for automobile trips, are included in Appendix xx. The mode split calculation shall be based upon these assumptions. If the proponent wishes to adjust these mode splits based upon specific project characteristics, the adjustment must be supported by accepted evidence and by appropriate mitigation commitments (e.g. enhanced travel demand management to justify a higher public transit mode share). BTM must approve any adjustments to the mode split and VOR assumptions in Appendix xx. The Access Plan shall include a clear, easily understood table that summarizes the assumptions and the resulting trips by land use type, by trip purpose, and by mode.
- c. Trip Distribution. The trip distribution shall identify the directional split (i.e. north, south, west) of person-trips and vehicle-trips for the specific location and trip types of the proposed project. Detailed trip distribution information for trips to and from all areas of Boston is included in Appendix xx. The trip distribution is allocated by individual mode, and should be applied to the resulting trip totals by mode. The Access Plan shall use this information for trip distribution assumptions, unless BTM recommends or approves other trip distribution assumptions.
- d. Trip Assignment. The distributed trips shall be assigned to the appropriate means of accessing the project: highway routes, surface streets, surface intersections, sidewalks, crosswalks, site access / egress points, and public transit lines. If the project expects to rely upon an off-site parking supply, trips shall be assigned appropriately to these locations. Drop-off, pick-up, and valet trips shall also be assigned appropriately, i.e. both entering and exiting the site access, and entering or exiting an off-site parking area.

Attached appendices include the base assumptions that the project proponent shall use for trip generation rates, mode splits, trip distribution, and vehicle occupancy rate for specified areas of Boston. The proponent may believe that other assumptions should be used due to specific circumstances, such as proximity to public transit (not relevant for downtown zones) or exceptional travel demand management commitments. Where such special circumstances warrant, the proponent may propose alternative assumptions, which are subject to explicit BTM approval.

- 2.3 Future No-Build Condition. The analysis of the proposed project's transportation impacts must be based on a comparison with an appropriate baseline condition. The proposed project's impacts would be felt fully during some future "horizon year" when the

project is expected to be complete, occupied, and operating. The effects of the proposed project (under the "Future Build Condition") are most appropriately demonstrated in comparison to projected transportation conditions during the horizon year without the effects of the proposed project.

- The horizon year shall be five years in the future, unless specific circumstances require that a different time frame be used.
- The Future No-Build Condition shall be based on the Existing Conditions assessment, with the addition of development and infrastructure projects that have been proposed and are expected to be complete and operational by the horizon year (per BTD and BRA instructions).
- The Future No-Build Condition traffic, transit, and pedestrian volumes shall also include a background growth rate of 1 – 1 ½ % per year (depending upon local conditions) added to existing traffic volume counts, transit ridership, and pedestrian counts, unless otherwise specified by BTD.

2.4 Future Build Condition. The central component of the Access Plan is the assessment of the proposed project's long-term impacts. This shall include evaluations of the project's effects on all transportation modes and aspects, throughout the study area.

a. Traffic Impacts.

- i) Traffic Volumes. The traffic analysis shall include diagrams of turning movement volumes generated by the proposed project at all study area intersections, and total turning movement volumes for the Future Build Condition. Therefore, the Access Plan shall include turning movement volume diagrams for AM peak volumes, PM peak volumes, and any other required period, of each of the following:
 - a) Existing Conditions (based on current traffic counts)
 - b) Future No-Build Conditions (Existing Conditions, plus appropriate future changes and growth factor)
 - c) Project-Generated Traffic Volumes (based on trip generation)
 - d) Future Build Conditions (Future No-Build Conditions, plus Project-Generated Traffic Volumes)
 - e) Future Build Conditions with Mitigation (if the proponent plans to undertake any roadway or signalization changes in order to mitigate traffic impacts of the proposed project)
- ii) Traffic Capacity Analysis Software. The Access Plan shall include traffic capacity analyses for Existing Conditions, Future No-Build Conditions, and Future Build Conditions. The capacity analysis shall be performed using an approved and appropriate capacity analysis software program.
 - For intersections that are widely spaced and will operate in isolation, the proponent shall use software based upon the *Highway Capacity Manual* (HCS), 1997 edition.
 - For closely-spaced intersections with long queues that create interaction between intersections, the proponent shall use a computer model, such as Transyt-7F (version 8) or Synchro, that can accurately model these effects. In such cases, the proponent shall model all of the intersections that would interact.

The computer model output shall be attached to the Access Plan as an appendix.

- iii) **Traffic Capacity Analysis Results Summary.** The Access Plan shall include a tabular summary of the traffic capacity analysis, for all conditions (Existing, No-Build, Build) for each intersection as a whole and for each approach of every intersection. The summary shall include the volume-to-capacity ratio (v/c), level of service (LOS), delay, and estimated queue lengths for each study intersection, and for each approach of every intersection. The summary table shall also highlight changes to intersection and individual approach LOS that result from site-generated traffic.
 - iv) **Traffic Counts.** The proponent shall submit, under separate cover, turning movement count summary sheets for each intersection in the study area.
- b. **Parking Impacts.** The Access Plan shall include an analysis of projected parking demand and proposed parking supply.
- i) **Parking Demand Analysis.** The Access Plan shall include an analysis of total parking demand in the horizon year, broken down by land use and user type (e.g. office employee vs. visitor, hotel employee vs. guest, retail employee vs. patron). The parking demand analysis shall include
 - Daily vehicle-trip generation by land use and user type (consistent with mode split and VOR)
 - Parking turnover by land use and user type (cite source)
 - Parking demand peaks by land use and user type
 - Overall parking demand and peak parking demand, based on shared parking among all land uses and user types included in the proposed projectd
 - ii) **Proposed Parking Supply.** The Access Plan shall include a summary of the project's proposed off-street parking supply. Parking supply, and parking costs, plays a central role in determining mode split and vehicular traffic impact. In general, parking shall be limited to minimum supply that is appropriate to the neighborhood, the project's transit access, and the project's mode split. Appendix xx includes a map of parking ratio guidelines by land use and area of the city. The project's parking ratio shall remain within these guidelines. If the parking supply exceeds these guidelines, the proponent must justify the excess parking based on circumstances specific to the project. Higher parking ratios may increase transportation impacts, and necessitate enhanced mitigation measures. The information below shall be summarized in a clear table.
 - Total Spaces
 - Existing
 - Future No-Build (if applicable)
 - Future Build Parking Conditions
 - Parking Allocation
 - Space allocation among various land uses
 - Parking ratios: spaces per thousand square feet or per unit, by land use
 - Specially-designated parking spaces, e.g. vanpools, livery vehicles, rental cars, car-sharing

- Treatment of existing parking spaces, including displacement of existing parking spaces and how the parking demand for these spaces would be met in the Future Build Condition
 - Comparison of Parking Supply and Demand
 - Projected shortfall or surplus of parking spaces, by land use
 - Proposed management of shortfall or surplus
 - Provide a plan of all parking facilities, including layout, access, and size of spaces.
- iii) Off-Site Parking Supply. Describe any anticipated utilization of off-site parking supply (as described in the Existing Conditions section, amended to reflect Future No-Build Conditions) required to satisfy project-generated parking demand.
- On-Street Parking Supply
 - Off-Street Parking Supply
 - Number and type of spaces required (i.e. publicly-available, employee, residential)
 - Resulting parking utilization at 12 noon on a weekday (additional parking survey times may be required, depending upon the nature of the project)
- iv) Proposed Parking Management Plan
- Description of Proposed Parking Operations
 - Access control
 - Valet operations
 - Pass or payment medium
 - Management of operations to prevent illegal parking, violation of 5-minute idling law
 - Parking Fees
 - Management of Specially-Designated Parking Spaces (e.g. vanpool, carpools, rental cars, car-sharing)
 - Location
 - Parking fees
 - Accommodation of increased supply if demand warrants
- c. Transit Impacts. Describe the anticipated impacts of the project on the mass transit system, based on the information about Existing Conditions and the projected transit person-trips (based on trip generation – trip distribution – mode split calculations). Future transit conditions shall be based on transit supply and capacity that is expected to be available in the horizon year; if there is some doubt, the proponent shall consult with BTM and/or the MBTA. The proponent may use generally available MBTA ridership data as a basis for this analysis. The Access Plan shall include the following information:
- i) Transit Trip Distribution
- Distribution of project-generated transit trips by zone
 - Distribution of project-generated transit trips by transit line / route
- ii) System Utilization
- Existing Conditions: Capacity and utilization by line

- No-Build Conditions: Capacity and utilization by line
 - Build Conditions: Capacity and utilization by line
- d. Pedestrian Impacts. Describe future pedestrian conditions in the study area:
- Pedestrian access to and from the project, pedestrian circulation routes
 - Pedestrian accommodation in the project's public spaces (e.g. sidewalk, adjacent intersections, plaza spaces, benches, etc.)
 - Pedestrian level of service (LOS) at all surveyed crosswalks, sidewalks and other locations
 - Existing Conditions
 - Future No-Build Conditions
 - Future Build Conditions
- NOTE: The traffic capacity analyses must also assume appropriate accommodation of pedestrians in all signalization assumptions. The pedestrian impacts analysis shall describe the assumptions regarding accommodation of pedestrians in the traffic analysis, i.e. pedestrian walk rate and percentage of cycles in which pedestrian phase is called (verify with BTM).
- e. Bicycles. Describe bicycle access to, from, and within the project site. Describe bicycle storage and other amenities (e.g. shower and changing facilities) to be provided. BTM will provide guidelines on bicycle storage requirements based on project type and size.
- f. Loading and Service. The project must accommodate loading and service facilities in an off-street location. The loading and service plan shall not rely upon loading facilities and truck back-up maneuvers in the public right-of-way. Describe service and loading requirements:
- Number of loading bays
 - Services to be provided (e.g. garbage compactor, garbage collection, restaurant service, move-in / move-out, etc.)
 - Level of loading and service activity (number of trucks per day or per week)
 - Loading and service schedule, schedule restrictions (proponent shall prohibit or strictly limit loading and service activities during peak periods)
 - Design vehicle(s)
 - Required truck turning movements (show design vehicle turning movements on site plan)
 - Major loading and service vehicle routes for site access and egress
 - Access for emergency vehicles

- 2.5 Site Plan. Provide an engineered site plan showing Build Conditions (contrast with existing conditions):
- Public right-of-way layout
 - Roadways
 - Sidewalks
 - Vehicular access and circulation
 - Service and loading

- Parking
- Bicycle storage
- Proposed on-street regulations

Task 3. Mitigation of the Project's Long-Term Transportation Impacts

Major development projects offer benefits, but they also consume public services and create impacts on public resources. Chief among these impacts is a development's effect on the transportation system. The project proponent is required to quantify and analyze these impacts through the Access Plan. It is then the responsibility of the project proponent, working with BTM, to develop strategies for reducing and mitigating these impacts. These strategies will typically include travel demand management (TDM) measures and improvements to Boston's transportation system.

These transportation system improvements and mitigation measures have associated costs. The proponent should view these costs as an integral component of the overall project cost, necessary to enable the transportation system to accommodate the project's impacts. The mitigation measures benefit the users of the transportation system, in particular the new users associated with the proposed project. Project proponents shall allocate appropriate funding for the mitigation. The mitigation measures associated with a development project will be specified in the project's Transportation Access Plan Agreement (TAPA) between the proponent and BTM.

- 3.1 Travel Demand Management (TDM). Travel demand management comprises a variety of strategies designed to reduce single-occupancy vehicle (SOV) travel and encourage "alternate modes" of transportation (public transit, walking, bicycling). TDM programs are critical due to the disproportionate impacts of SOV travel on congestion, parking demand, air quality, and quality of life. TDM programs are especially important for projects that generate higher trip volumes, create concentrated peaks of demand, and create more impacts related to roadway congestion, parking demand, and vehicle emissions. TDM programs are required even when proponent uses the default analysis assumptions for mode split and VOR, since these default assumptions reflect long-standing TDM efforts and Transportation Management Association programs.

Appropriate TDM measures and requirements will vary depending upon the type of development, the neighborhood, the impact analysis assumptions, and other circumstances. For example, many of the measures below would not apply to a residential development. In the case of commercial office development, some (but not all) of the measures below would be the responsibility of the tenants, rather than the proponent. The proponent will be required to implement those TDM measures that are within its control, and should at least encourage and facilitate such measures. However, if the proponent seeks to base its impact analysis on aggressive assumptions (e.g. a high transit mode share), the proponent must require appropriate TDM measures in its lease agreements with tenants.

In the TAPA, the proponent will be required to implement the following TDM measures (as appropriate to the specific project):

- a. Transportation Coordinator. Designate a full-time, on-site employee as the development's transportation coordinator. The transportation coordinator shall

oversee all transportation issues. This includes managing vehicular operations, service and loading, parking, and TDM programs. In addition, the transportation coordinator will be responsible for the monitoring program and will serve as the contact and liaison for BTM and the Transportation Management Association (TMA)

- b. Ridesharing / Carpooling. Facilitate ridesharing through geographic matching, parking fee discounts, and preferential parking for carpools / vanpools. May be accomplished through membership in a TMA, participation in CARAVAN for Commuters, and/or use of computerized ridesharing software.
- c. Guaranteed Ride Home Program. Offer a "guaranteed ride home" in order to remove an obstacle to transit use and ridesharing
- d. Transit Pass Programs. Encourage employees to use transit through the following measures:
 - Offer on-site transit pass sales or participate in the MBTA Corporate T-Pass Program
 - Offer federal "Commuter Choice" programs, including pre-tax deductions for transit passes and subsidized transit passes
- e. Information and Promotion of Travel Alternatives
 - Provide employees and visitors with public transit system maps and other system information
 - Provide an annual (or more frequent) newsletter or bulletin summarizing transit, ridesharing, bicycling, alternative work schedules, and other travel options
 - Sponsor an annual (or more frequent) "Transportation Day" at which employees may obtain information on travel alternatives and register to participate in ridesharing programs
 - Provide information on travel alternatives for employees and visitors via the Internet
 - Provide information on travel alternatives to new employees
- f. Transportation Management Association (TMA) Membership. Investigate joining a Transportation Management Association. Encourage tenants to join the TMA as well. If no TMA is established in the project area, investigate starting a new TMA or becoming affiliated with an existing TMA. A TMA can provide many of these TDM measures, including ridematching, guaranteed ride home, and transit information and promotional materials.
- g. Bicycle Facilities and Promotion
 - Provide secure bicycle storage (number of spaces will be specified depending upon size of development and type of land use)
 - Provide additional publicly-accessible bicycle storage (number of spaces will be specified)
 - Provide shower and changing facilities for bicycle commuters
 - Promote bicycles as an alternative to SOV travel, provide promotional material on bicycle commuting and bicycle safety, and provide incentives for bicycle use

h. Parking Management

- Charge market-rate parking fees
- Offer preferential parking to carpools and vanpools
- Offer reduced parking rates to carpools and vanpools
- Offer parking "cash-out" option
- Offer garage space for car rentals
- Offer parking space for car-sharing
- Offer parking space, charging facilities for electric vehicles
- Offer parking / layover space for livery vehicles (hotel development)
- Enforce a 5-minute limit on vehicle idling for all users of the Development, in accordance with Massachusetts state law

i. Trip Reduction Strategies. To the degree possible, the Developer shall implement the following strategies for its own on-site employees. The Developer shall also encourage tenants to implement these strategies as well.

- Telecommuting. Reduce overall trip demand by enabling employees to telecommute.
- Flexible Work Schedules. Reduce peak hour and overall trip demand by enabling employees to telecommute, work a compressed workweek, or work hours that enable off-peak commuting.
- Local Hiring. Recruit and hire employees from the local area. Such local employees can more easily use alternatives to SOV travel, including walking, bicycling, and transit.

j. Transportation Monitoring and Annual Reporting. Monitor transportation conditions, conduct employee transportation surveys, and provide BTM with an annual report on findings. This information will be useful to BTM in identifying and addressing issues with travel and access, including transit service, pedestrian and bicycle access, parking, and traffic. This information will enable BTM to pursue improved access for the project, and provide benefits to the proponent. BTM will provide employee survey forms and transportation monitoring forms to ensure uniformity of data.

3.2 Transportation System Improvements. In order to meet Boston's mobility needs as its population, density, and land development increase, Boston's transportation system requires improvements. These improvements offset the transportation impacts of new development. In addition, these improvements can make the traveling experience easier in the vicinity of the project, which accrues to the benefit of the proponent and the development's users.

- a. Geometric Changes and Improvements to the Public Right-of-Way. The proponent may be required to make geometric changes and improvements to roadways, sidewalks, and other elements in the vicinity of the proposed project. These changes and improvements may be necessary in order to enable new circulation patterns resulting from the project and mitigate impacts of new vehicle or pedestrian trips. Changes and improvements shall be designed by the proponent's consultant in consultation with BTM. The project proponent will be required to directly fund and implement all changes and improvements to the public right-of-way, and to obtain any required permits. The proponent shall obtain the approval of the City of Boston's Public Improvements Commission (PIC) for any changes to the public right-of-way. These improvements shall be made with input from BTM, per specifications provided

by BTB, by a contractor approved by BTB, and subject to final BTB inspection and approval.

- b. Traffic Signal Improvements. BTB operates most of the traffic signals in Boston. Improvements to traffic signals in the vicinity of the proposed project may be necessary to manage the increased travel demands placed on the intersection. Improving the operations of these signals can reduce congestion and improve conditions for pedestrians, bicycles, transit vehicles, and general traffic. Typical traffic signal improvements that BTB may require include:

- i) Traffic signal equipment
 - Signal controller
 - Signal heads and pedestrian heads
 - Signal poles and mast arms
- ii) Traffic monitoring equipment
 - System detectors
 - Video monitoring cameras
- iii) Traffic signal communications equipment
 - Communications conduit (4" PVC)
 - Signal interconnect cable

The project proponent will be required to directly fund and implement all traffic signal improvements, and to obtain any required permits. These improvements shall be made with input from BTB, per specifications provided by BTB, by a contractor approved by BTB, and subject to final BTB inspection and approval.

- c. Public Transit System Improvements. New development can add significantly to public transit demand and have other impacts on the transit system. In order to manage this demand and mitigate the impacts, the proponent may be required to make or contribute to transit system improvements. These improvements shall be determined in consultation with BTB and the MBTA. Improvements may include:
- Physical improvements to MBTA system stations and stops
 - Water transportation
 - Dock and/or landside infrastructure improvements
 - Operating subsidy for water transportation services
 - Supplemental transit services. Public transit is the most desirable means of achieving transit access, and the proponent shall make every effort to facilitate transit access to the proposed project via public services. However, there may be some situations in which private supplemental transit services, such as shuttle buses, are necessary.
 - Overall transit demand in the area is too low to justify public transit service, but the proposed project requires transit access
 - The proposed project generates a concentration of trips to and from certain locations, such that a shuttle is feasible and useful in reducing auto trips (e.g. a hotel with airport and/or convention shuttles)

Task 4. Description of the Project's Short-Term Construction Impacts and Proposed Mitigation

The Access Plan shall include an overview of construction period transportation impacts and proposed short-term mitigation. This shall be a summary of the more detailed Construction Management Plan (CMP) that must be submitted to BTB under separate cover. The

construction management summary in the Access Plan shall provide an appropriate level of information regarding the analysis and proposed management of the impacts of the project during the construction period, including:

- The need for full or partial street closures, street occupancy, sidewalk closures, and/or sidewalk occupancy during construction
- Frequency and schedule for truck movements and construction materials deliveries, including designated and prohibited delivery times
- Designated truck routes
- Plans for maintaining pedestrian and vehicle access during each phase of construction
- Parking provisions for construction workers
- Mode of transportation for construction workers, initiatives for reducing driving and parking demands
- Coordination with other construction projects in the area
- Distribution of information regarding construction conditions and impact mitigation to abutters