



CONSERVATION LAW FOUNDATION

July 23, 2010

Secretary Ian Bowles
Executive Office of Energy and Environmental Affairs
MEPA Office, Attn. Holly Johnson, MEPA Analyst
EEA #13886
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Bowles:

The Conservation Law Foundation ("CLF") welcomes the opportunity to comment on the Final Environmental Impact Report ("FEIR") for the Green Line Extension Project ("Project"). CLF continues strongly to support the Project. We appreciate the efforts of the Executive Office of Energy and Environmental Affairs ("EEA") and the Massachusetts Department of Transportation ("MassDOT") to move the Project forward through environmental review towards construction and completion. These comments recommend a quick and efficient process for conclusion of the MEPA review, identify areas of analysis that MassDOT must complete, and reiterate that the Project, as proposed, does not comply with the requirements of the Massachusetts State Implementation Plan ("SIP").

I. Efficient Completion of Environmental Review

Since the environmental review of the Project requires additional analysis as described below, EEA should find that the FEIR is inadequate at this time and require MassDOT to file a brief supplemental final environmental impact report in accordance with 301 C.M.R. 11.08(8)(c). A supplemental FEIR of limited scope that addresses the issues set forth below is necessary to ensure MassDOT's compliance with the Secretary's Draft Environmental Impact Report Certificate ("DEIR Certificate").

II. The FEIR Does Not Satisfy all DEIR Certificate Requirements

As set forth in CLF's previous comments, MassDOT is legally obligated to address fully the scope of the Secretary's certificates. See Allen v. Boston Redevelopment Authority, 450 Mass. 242 (2007). Section 62A of the Massachusetts Environmental Policy Act ("MEPA"), M.G.L., c. 30, §§ 61, 62-62H, states that "[t]he secretary shall determine the form, content, level of detail and alternatives required for the [environmental impact] report." The Supreme Judicial Court, in Allen v. Boston Redevelopment Authority, held that, where the Secretary defines the appropriate scope of requirements for inclusion in an environmental impact report and the

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proponent fails to meet those requirements, there is no rational basis for certification of compliance with MEPA and its regulations. Here, limited additional MEPA review is necessary since the FEIR fails to meet the following requirements of the DEIR Certificate:

A. Failure to Satisfy DEIR Certificate Requirement Concerning Air Quality Modeling Narrative

The DEIR Certificate requires that the FEIR include “a narrative discussion clarifying the air quality modeling assumptions, challenges associated with the inherent evolution of modeling programs and input data, and how the air quality modeling results were conducted in a manner that sufficiently demonstrated consistency with the SIP.” DEIR Certificate at 24. The Secretary included this requirement in direct response to CLF’s comments. DEIR Certificate at 15. CLF’s comments concerned and specifically questioned the methodology MassDOT applied in its comparison of air quality modeling results on pages 5-101 to 5-103 of the Draft Environmental Impact Report/Environmental Assessment for the Project (“DEIR/EA”). CLF’s Comment Letter (dated January 8, 2010), FEIR, Volume 2, Appendix A, at 355 to 357.

The air quality modeling at issue (the “Comparison Analysis”) compared air quality modeling results for the proposed Green Line Extension (to College Avenue with a Union Square spur) in combination with other current SIP transit projects (improvements to the Fairmount Line and one thousand additional parking spaces serving commuter transit facilities) to the original package of SIP transit projects (Green Line extension to Ball Square, restoration of the Arborway, and construction of the Red-Blue Line connector). DEIR/EA at 5-103. CLF’s DEIR comments identified the fact that, while the emissions model and modeling assumptions were updated for the current package of SIP transit projects, as proposed, MassDOT failed to remodel the original package of projects with the new, updated emissions model and modeling assumptions; thereby making a valid comparison impossible. CLF’s Comment Letter (dated January 8, 2010), FEIR, Volume 2, Appendix A, at 356 to 357. As a result, no comparison between the emissions reductions associated with the original package of transit commitments and those associated with the total revised package (including the Green Line extension to College Avenue) was presented. Regardless of these errors in the Comparison Analysis, MassDOT now has failed to explain in the FEIR the methodology employed for this comparison analysis, as is required by the DEIR Certificate.

Although MassDOT dedicates a full chapter in the FEIR to air quality, nowhere in the four and one-half page discussion does the Department even attempt to clarify the methodology applied to the Comparison Analysis or explain how the air quality modeling was conducted in a manner that sufficiently demonstrated consistency with the SIP. FEIR, Chapter 3. Under the subheading “Consistency with the SIP,” the FEIR states that the Comparison Analysis was conducted by the Central Transportation Planning Staff (“CTPS”) in 2009 at MassDOT’s request. FEIR 3-5. MassDOT then concludes without explanation that the results of this air quality analysis demonstrated that the air quality benefits of the currently-proposed Green Line Extension, in combination with the Fairmount Line improvements and additional parking serving commuter transit facilities, are greater than those of the original package of transit projects plus ten percent. *Id.* Instead of providing an explanation of its methodology and the air quality

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modeling results, as required by the DEIR Certificate, MassDOT suggests that the Massachusetts Department of Environmental Protection (“DEP”) has reviewed the Comparison Analysis and concluded that it is sufficient. *Id.* However, DEP’s comment letter, cited by MassDOT in the FEIR, does not even address the Comparison Analysis, let alone provide the explanation required by the DEIR Certificate. FEIR, Volume 2, Appendix A, at 61.

The FEIR states that the “greatest challenge to air quality modeling is ensuring consistent results when the statewide traffic and the mobile source emission factor models are updated,” but it does not explain how MassDOT tried to ensure consistency of results in connection with the Comparison Analysis. FEIR at 3-3. Without this explanation, however, the narrative cannot be considered responsive to the requirement of the DEIR Certificate. MassDOT therefore must provide a supplemental narrative discussion that clearly addresses how the air quality modeling results were conducted in a manner that sufficiently demonstrated consistency with the SIP. Such a narrative should specifically explain how CTPS conducted a “fair comparison of air quality benefits associated with the package of approved SIP projects.” DEIR/EA at 5-102.

B. Failure to Satisfy DEIR Certificate Requirement Concerning the Public Involvement Plan

The Project planning process has been characterized by extensive, sustained, and beneficial citizen involvement. CLF was therefore pleased to see that the DEIR Certificate requires the development of a continued public involvement plan (“PIP”) beyond the conclusion of the environmental review process and that MassDOT intends to continue to encourage public participation. The PIP proposed in the FEIR contains many positive elements; to ensure DEIR Certificate compliance, however, the PIP must be structured in a manner that will achieve the goal of continuing to provide a mechanism for meaningful public participation.

The DEIR Certificate states that “[i]n order for the project to reach its maximum potential, MassDOT must continue to, and in some ways enhance or expand, project design and coordination efforts in a collaborative manner with State and city agencies, citizens, local businesses, and other stakeholders during all aspects of the project—planning, design and construction.” DEIR Certificate at 3. To this end, the DEIR Certificate requires that the FEIR present a PIP “to facilitate robust community participation beyond the conclusion of the MEPA process.” *Id.* The PIP is required to clearly outline “how a broad range of participants (...) will continue to provide meaningful community involvement throughout the duration of the entire project, including detailed design, engineering, construction phases.” DEIR Certificate at 25.

MassDOT’s PIP, as presented in the FEIR, explicitly limits its plan to continue and enhance public outreach strategies to the design review phase. FEIR at 6-9. For the construction phase, MassDOT states that it will “shift to providing frequent and accurate public information on construction progress, schedule, traffic and pedestrian detours, and other pertinent issues.” *Id.* This approach is inconsistent with the DEIR’s requirement to put forth a PIP that continues, and in some ways enhances or expands, public involvement for “all aspects of the project—planning, design and construction.” DEIR Certificate at 3. MassDOT should therefore be required to include a revised PIP in a supplemental FEIR that addresses this issue by extending public participation to all remaining phases of the Project.

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The DEIR Certificate also identifies the types of representatives the PIP should involve: “i.e., representatives of regional planning agencies, local government, business interests, community groups, representatives of EJ areas and the disabled community, abutters, and bicyclist and pedestrian groups.” DEIR Certificate at 25. The main vehicles for involvement of the PIP proposed in the FEIR are the Design Working Group and the Green Line Extension Workshops. FEIR at 6-10 to 6-11. Since the workshops in the PIP as proposed in the FEIR are limited to gathering input on land use and facility design issues only, and are open to the public in general without any attention to who participates, the burden to ensure involvement from the broad range of participants defined in the DEIR Certificate appears to fall on the Design Working Group.

MassDOT’s stated goal for the composition of the Design Working Group is to have “representation from all of the neighborhoods adjacent to Green Line Extension facilities.” FEIR 6-10. The twenty five members of the Design Working Group were announced in June of 2010 and appear to meet that goal. Since the members are not identified by their interests, expertise or organization, however, it is difficult to ascertain whether, in addition to MassDOT’s neighborhood representation goal, the DEIR Certificate’s broad participation requirements were met. Specifically, it appears that the Design Working Group as designed and constituted does not have representatives from all the required categories. MassDOT should therefore be required to broaden its range of participants in the Design Working Group and to better identify how the members include all categories required in the DEIR Certificate or include an additional broader advisory group in its PIP.

In addition, CLF has an overarching concern that the PIP, as proposed in the FEIR, fails to provide for the “meaningful community involvement” required by the DEIR Certificate. DEIR Certificate at 25. The Design Working Group, as established, only has a limited advisory role, i.e., “the planning of public design workshops” and otherwise largely exists to distribute MassDOT’s and Massachusetts Bay Transportation Authority’s (“MBTA”) information to the neighborhoods abutting the Project’s stations and facilities. FEIR 6-10. The Green Line Extension Workshops are set up to “gather opinions and ideas on facility issues” and to present and submit facility designs for public review. The PIP, however, does not describe how MassDOT or the MBTA will take the public’s input received at these workshops into consideration in their decision-making. MassDOT should therefore be required to either improve its PIP to address these issues and to provide meaningful public involvement or elaborate in its description of the PIP to demonstrate how this important DEIR Certificate requirement is met.

C. Other Outstanding EENF Certificate Requirements

In its DEIR comment letter, CLF cited additional requirements of the EENF Certificate that were not sufficiently addressed. FEIR, Volume 2, Appendix A, at 355. These requirements included, but were not limited to, those related to stormwater, air quality, and funding sources.¹

¹ While MassDOT has still not released a detailed description of funding sources for the Project, as required by the EENF Certificate, CLF has been able to obtain copies of cost estimates from MassDOT in response to a Public Records Law request.

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Unfortunately, the Secretary's DEIR Certificate did not require any further review in the FEIR of these areas. Nevertheless, all of these issues should be addressed before the environmental review process can be completed, as required by *Allen v. Boston Redevelopment Authority*, and CLF hereby incorporates all the issues raised in its DEIR comment letter into its comments on the FEIR.

III. Limited Extension to College Avenue by December 31, 2014 Violates SIP

To comply with the SIP, MassDOT must construct an extension of the Green Line "from Lechmere Station to Medford Hillside" by December 31, 2014. 310 C.M.R. 7.36(2)(j)1. In its DEIR comment letter (dated January 8, 2010), CLF emphasized that the Green Line Extension Project, as proposed, does not comply with the SIP, since Medford Hillside's well-documented historical boundaries do not include the location of the proposed terminus at the intersection of College Avenue and Boston Avenue. FEIR, Volume 2, Appendix A, at 362 to 363. Similar comments were made by many other commenters, including, but not limited to, Senator Jehlen and Representative Sciortino. Volume 2, Appendix A, at 39-42 and 47-51.

In response to these comments, MassDOT refers to a memorandum it requested from CTPS. FEIR, Volume 1, at 4-4 and, e.g., FEIR, Volume 2, Appendix A, at 363. This CTPS memorandum ("CTPS Memorandum") purports to demonstrate that the College Avenue terminus would adequately serve the walk market area for the Medford Hillside but does not address the underlying SIP compliance issue raised by the commenters. FEIR, Appendix C. The SIP requires that the Green Line be extended "to Medford Hillside" (emphasis added). It does not require that the terminus of the Green Line Extension, or any other new station for that matter, be somewhere within walking distance of the Medford Hillside. To the extent the CTPS Memorandum is intended to respond to the comments made by CLF and others, it completely misses the mark.

In addition, the CTPS Memorandum, regardless of its purpose, makes unfounded assumptions. It purports to define the Medford Hillside neighborhood as an area that includes the intersection of College Avenue and Boston Avenue. FEIR, Appendix C, at 1, 3 to 4. This definition apparently was based on "an examination of local maps and businesses that identified themselves with the Medford Hillside neighborhood." FEIR, Appendix C, at 1. In response to a June 16, 2010 request from CLF seeking this underlying information, MassDOT provided another memorandum from CTPS dated July 6, 2010 ("July 2010 CTPS Memorandum"), attached as Attachment No. 1 to these comments. The July 2010 CTPS Memorandum apparently was written in response to CLF's request and includes information regarding the methodology and data sources that were used to produce the geographic boundaries of the Medford Hillside neighborhood for purposes of the CTPS Memorandum included in the FEIR. See id.

The July 2010 CTPS Memorandum reveals that in its determination of the Medford Hillside neighborhood boundaries for purposes of the FEIR Appendix C, CTPS completely ignored the extensive research on the subject matter conducted by Medford resident John Elliott, which was previously provided to MassDOT as well as attached to both Mr. Elliott's and CLF's DEIR comments. FEIR, Volume 2, Appendix A, at 1002 and 367, respectively. Mr. Elliott's

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research on the subject matter is significantly more extensive and thorough. His research included historical, modern, and internet maps, as well as, historical references, photographs, excerpts from books and newspapers, including articles, obituaries, and classifieds. *Id.* Other than maps, no such documents were included in CTPS's analysis. Attachment No. 1. While CTPS considered nine maps, four of which were just updated versions of each other, Mr. Elliott included twenty maps, historical and current, in his analysis. FEIR, Volume 2, Appendix A, at 1002 *et seq.* Mr. Elliott, like CTPS, included business names and associations in his analysis, but did not limit his analysis to a current internet search, as CTPS did. *Id.* Mr. Elliott, who more extensively researched this question, concludes that the intersection of College Avenue and Boston Avenue, the location MassDOT proposes as a terminus for the Green Line Extension, does not lie in the Medford Hillside neighborhood, which is the opposite conclusion CTPS draws. *See* FEIR, Volume 2, Appendix A, at 977.

CTPS identified twenty-two businesses that either have the word "Hillside" in their name or somehow a website associates them with the term "Hillside." Attachment No. 1 at 5. Interestingly enough, none of the businesses CTPS found used the term "Medford Hillside" in their name. *Id.* Moreover, out of the twenty-two businesses CTPS included in its analysis, only four are identified as south of Winthrop Street, none of which support the conclusion that the Medford Hillside neighborhood extends to the intersection of College Avenue and Boston Avenue, where MassDOT proposes to locate the terminus of the Green Line Extension. Attachment No. 1 at 5. One of the four businesses CTPS includes in this list is the American Radio and Research Corporation ("AMRAD") radio tower, although CTPS could not identify its exact location. *Id.* AMRAD's broadcasting activities came to a halt in 1925. *See* Light on the hill: A history of Tufts College, 1852-1952, Chapter 11.5, at <http://hdl.handle.net/10427/14802>, last visited on July 22, 2010.

The one "business" the July 2010 CTPS Memorandum references that is south of College Avenue and Boston Avenue is the Hillside House, which is not even located in Medford. Its address is 32 Dearborn Road in Somerville. *See* Tufts University Student Affairs Website at <http://uss.tufts.edu/studentaffairs/commuting.asp>, last visited on July 22, 2010. The Hillside House is a center for undergraduate commuter life at Tufts University. *Id.* The name of the Hillside House was selected by nomination and a vote of Tufts commuter students. *See* A Guide to the Off Hill Council records, 1963-1990 at <http://hdl.handle.net/10427/48340>, last visited on July 22, 2010. Since college students typically do not have a strong or long-standing connection to the area surrounding their campus, the "Hillside" reference in the name of the center is most reasonably explained as a reference to College Hill rather than the Medford Hillside neighborhood.

Likewise, none of the maps reviewed by CTPS support the conclusion that the intersection of College Avenue and Boston Avenue is in the Medford Hillside neighborhood. Rather, they simply support that Medford Hillside is a unique neighborhood. CTPS's analysis focused on whether the label "Medford Hillside" was placed on the map, and if so, where. While CTPS identified some maps that placed the label between Winthrop Street and College Avenue, none of these maps show that the Medford Hillside neighborhood extends to the intersection of College Avenue and Boston Avenue. One of the maps CTPS cites as having a label placed

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between Winthrop Street and College Avenue, the 1891 Atlas of Massachusetts by George Walker Publishing, on close examination reveals that it is actually not a neighborhood label but identifies the previously existing Medford Hillside train station, since it says “Medford Hillside Sta.” See Attachment 1 at 11 and Attachment No. 2 (better photocopy of same map from Mr. Elliott’s research). The Medford Hillside station was located near the intersection of Winthrop Street and Boston Avenue, thereby directly contradicting CTPS’s overall conclusion.

Thus, CTPS bases its expansive definition of the Medford Hillside neighborhood on a limited search and incorrect assumptions while ignoring existing research on the subject matter—without providing any rational basis for its conclusion. If correctly interpreted, CTPS’s research only confirms that the intersection of College Avenue and Boston Avenue does not lie in the Medford Hillside neighborhood. Moreover, the City of Medford itself defines the Medford Hillside neighborhood as congruent with Census Tract 3394, which does not include the location of the College Avenue station. See City of Medford 5-Year Strategic Plan 2010-2015 at 19, Attachment 3.

Using its own geographic definition, the CTPS Memorandum concludes that “the Medford Hillside neighborhood is well served by the College Avenue Station.” FEIR, Appendix C, at 2. To reach this conclusion, CTPS assumed one mile and three-quarter mile catchment areas. Id. However, if one takes the analysis and conclusion of the CTPS Memorandum and applies it to other stations to be located on the Green Line Extension, many could arguably be eliminated. The neighborhoods around the Ball Square station, for example, could also be served by the College Avenue and Lowell Street stations since they are within a one mile catchment area of either or both of the other stations. See DEIR, Volume 2, Figure 3.3-1. Likewise, a station at Mystic Valley/Route 16 combined with the Ball Square Station and the Davis Square Red Line Station would, pursuant to this reasoning, obviate the need for a College Avenue Station. See id.

It is worth noting that in its explanation of the travel demand modeling methodology used for the DEIR, CTPS states that one mile from a station represents the furthest distance a person is willing to walk to access transit. It does not state that the majority or even a significant portion of riders would walk that far. DEIR, Appendix D, at 2. As we understand, the one mile catchment area assumption stems from an onboard survey of commuter rail riders CTPS conducted in the late 1990s to ascertain how far people would walk to a commuter—not light—rail station. The same survey determined that the catchment area for buses and rapid transit stations was much smaller: half and a three-quarter mile respectively.² Furthermore, MassDOT in the DEIR states that “a ½-mile radius of each proposed station” “represents the maximum distance riders are willing to walk.” DEIR, Executive Summary at 47. See, also, DEIR, Volume 1, at 4-3 (describing half-mile radius as “typical distance riders are willing to walk to a station”), DEIR, Volume 1, at 5-171 (describing areas within half-mile of a proposed station as “generally considered easy walking distance”), and DEIR, Volume 1, at 5-177 (describing half-mile radius of each proposed station as the “maximum distance riders are willing to walk”). Thus, it appears that CTPS’s assumption regarding catchment area size is incorrect as well.

² CLF is not aware whether the study included light rail.

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Regardless of the assumptions and conclusions set forth in the CTPS Memorandum, there can be no doubt that a Mystic Valley/Route 16 terminus would better ensure that all of the Medford Hillside is within the catchment area of the new Green Line stations. Compared with terminating the line at College Avenue, the Route 16 terminus would produce an estimated additional reduction in VMT over the Baseline Alternative of more than ten percent. It also would provide fair and equitable access to transit—and thus to increased economic and educational opportunities—to five additional state-defined environmental justice communities (two in Somerville, two in Medford, and one in Arlington). At the same time, a terminus at Mystic Valley/Route 16, unlike the proposed one at College Avenue, would fulfill the SIP requirement to extend the Green Line to the Medford Hillside. MassDOT should therefore choose an alternative in the supplemental FEIR that includes the Mystic Valley/Route 16 station.

IV. Community Path Should be Incorporated into Construction of the Project

The extension of the Somerville Community Path (“Community Path”) is a critical transportation project directly related to the extension of the Green Line to Medford and Somerville. This missing link will provide broader and faster pedestrian and bicycle access to future Green Line stops. The DEIR Certificate discusses the Community Path but does not require any additional review in the FEIR.

CLF appreciates MassDOT's commitment to complete all planning, design, and engineering work, including the identification of necessary property acquisitions, for the Community Path as part of the Green Line Extension Project.³ However, because retrofitting the path after construction of the Green Line Extension would inevitably be more expensive and disruptive to future Green Line and commuter rail passengers, CLF recommends that MassDOT publicly commit to funding construction of at least the overlapping parts of the Community Path with the Green Line Extension and encourages the Department to cooperate with the City of Somerville and other local stakeholders to this end.

The City of Somerville's proposed TIGER II application provides an unusual opportunity to obtain funding for the whole Community Path, and to bring additional federal funding into Massachusetts, but time is of the essence. Therefore, CLF believes that it is important for MassDOT to assist the City of Somerville in any way possible. Such assistance should include, but not be limited to, engineering assistance, funding for the required local match, and construction of at least the overlapping parts of the Community Path with the Green Line Extension.

The Community Path is exactly the kind of multi-modal project that would help MassDOT achieve the goals and requirements of its GreenDOT policy, as well as the state's Healthy Transportation Compact and the Global Warming Solutions Act. The GreenDOT policy specifically calls for promotion of the healthy transportation modes of walking, bicycling, and public transit. MassDOT Policy Directive P-10-002 (dated June 2, 2010). The Community Path

³ To the extent that MassDOT only intends to work on planning, design, and engineering for the Lowell Street to Inner Belt Road section of the community path, see FEIR, Volume 1, at 2-49, CLF recommends that MassDOT extend its focus to the complete length of the Community Path to Lechmere.

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would provide an ideal combination of these three healthy transportation modes. The Healthy Transportation Compact, among other goals, requires the development of a healthy transportation framework that increases access to healthy transportation alternatives that reduce greenhouse gas emissions, improves access to services for persons with mobility limitations and increases opportunities for physical activities. M.G.L. c. 6C, § 33. The Community Path would be a significant contribution towards the creation of such a healthy transportation framework. Likewise, the Community Path would help the Commonwealth meet its statewide greenhouse gas emissions limits under the Global Warming Solutions Act. M.G.L. c. 21N, § 3. It would therefore be a missed opportunity for the Commonwealth not to invest in the Community Path at this time.

V. Conclusion

CLF continues to strongly support the Green Line Extension Project. We look forward to the issuance of the Secretary's FEIR Certificate. Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in dark ink, appearing to read "Rafael Mares", is written over a light blue horizontal line.

Rafael Mares
Staff Attorney

Attachment 1

MEMORANDUM

TO: Green Line Extension Project Files **July 06, 2010**

FROM: Scott Peterson

RE: Medford Hillside Neighborhood Included in the College Avenue Walk
Market Area - Methodology and Data Sources

BACKGROUND

This memo contains information about the methodology and data sources that were used to produce the geographic boundaries for Medford Hillside that were used in the memo titled "Medford Hillside Neighborhood included in the College Avenue Walk market Area" dated April 6th, 2010. The rationale for writing the April 6th memo was to answer the question:

Does the model methodology being used by CTPS at the Green Line Extension terminus of College Ave serve the Medford Hillside populations?

This memo was not intended to support or argue against any particular terminus location, but simply to explain the modeling assumptions used by CTPS as they pertain to the projected coverage of the walk market area around a College Ave station, including the relationship between the project walk market area and the Medford Hillside neighborhood.

METHODOLOGY**Transportation Analysis Zones**

The TAZ is the basic unit of geography that any transportation model uses to estimate demand. The CTPS regional travel demand model area contains 2,727 TAZs. Medford contains 29 TAZs (#550-578), shown in Appendix A. In order to make the analysis of the demand and user benefits easier, the Federal Transit Administration (FTA) requested CTPS to aggregate the TAZs into neighborhoods/districts, which help to tell a story about particular projects being advanced (in this case, the Green Line Extension). The TAZs were thus aggregated to build the various neighborhood/district definitions that have been and continue to be used in the various Green Line Extension studies. As part of this effort, the City of Medford was broken into five generalized neighborhoods using TAZs, one of which was associated with the Medford Hillside neighborhood.

Neighborhoods

For the purposes of this analysis, 'neighborhood' is defined as a geographically localized community within a larger city, town, or suburb. A community usually shares common geographic and socio-economic characteristics and can refer to an area as small as a few blocks or as large as several square miles. CTPS developed neighborhood definitions using TAZs in order to interpret demand forecasts and user benefits for the proposed project. This was done for the Green Line Extension DEIR, FEIR, and continues with the New Starts application. CTPS staff examined three data sources: businesses that currently associate themselves with the Medford Hillside neighborhood, maps of the area, and topography in order to define the neighborhood boundaries.

Business Affiliation

CTPS conducted several internet searches for businesses that have *Medford Hillside* or *Hillside* in their name and/or have associated themselves with the Medford Hillside neighborhood. An association was based on whether the website being mined for information listed the business as serving Medford Hillside. In this methodology, we use the terms *Medford Hillside* and *Hillside* interchangeably. This assumption was based on the fact that the City of Medford calls Medford Hillside, just 'Hillside' in their Five-year Strategic Plan 2005-2015 ver. 2.0. The results of these searches are shown in Appendix B. Most businesses that associate themselves with Medford Hillside are located along Boston Ave., near the intersection with Winthrop St. There appear to be more businesses north of Winthrop St. than south, but CTPS did identify several that were located between Winthrop St. and College Ave. along Boston Ave.

Maps of the Area

Several different types of maps were examined. Scanned examples of these maps are shown in Appendix C. The maps were used to determine if Medford Hillside was identified as a unique neighborhood, and if so, where the label was placed geographically. The first set of maps consisted of United States Geological Topographic Survey (USGS-TS) maps, which included surveys that were printed in 1903, 1946, 1949, and 1985. In all of the USGS maps, Medford Hillside was shown as a unique neighborhood, except for the 1903 version. When Medford Hillside was identified, the label was always placed between Winthrop St. and College Ave. An examination of the 2007 American Map-Metro Boston Street Atlas also identifies Medford Hillside as a unique neighborhood, locating the label just north of College Ave. The 1891 Atlas of Massachusetts, by George Walker Publishing, places the label for Medford Hillside between Winthrop St. and College Ave. There were also several maps that labeled Medford Hillside North of Winthrop St., these included the web based 2010 Navteq maps by Microsoft and the National Map Viewer being used by USGS in May of 2010. The label placement shows Winthrop St. to be the southern and eastern extent in about half of the maps examined, while the other half went down to College Ave.

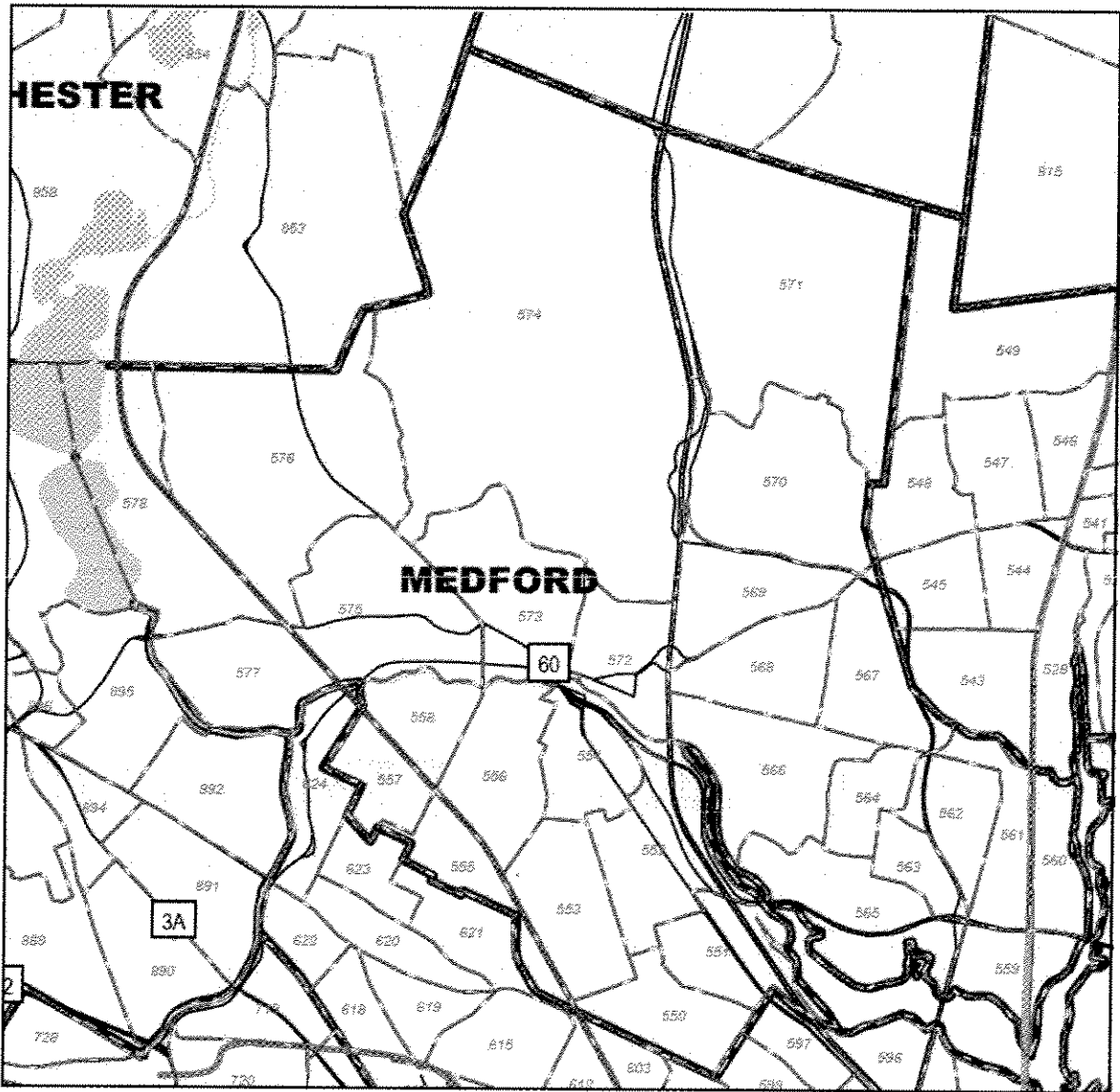
Topography

Medford Hillside is defined in the Medford Historical Register Vol. XX 1917, and refers to the neighborhood that lies on the northwest slope of Walnut Hill. Walnut Hill later became known as College Hill, after Tufts University located parts of its campus on top of the hill. Walnut Hill is located to the west of Boston Ave., generally between Winthrop St. and College Ave. and is shown in Appendix D. As the community and neighborhood evolved, more residents and businesses on the northern and eastern slope appear to have associated themselves with the Medford Hillside neighborhood, with most of these being located on Boston Ave., near Winthrop St. Based on the topography and the fact that College Hill extends down to College Ave., it seems reasonable to say Medford Hillside could refer to any business or residence located on the northwest, north, or northeast slope of College Hill.

Conclusion

Three sources were examined to help locate the boundary of Medford Hillside within the CTPS TAZ system. They are business affiliation, maps, and topography. There is no one definitive source saying where the boundaries of Medford Hillside are, but the majority appears to agree where the northern and western boundaries for Medford Hillside are located. The southern and eastern boundaries have been harder to differentiate. The western boundary is generally acknowledged to be the Somerville City Line and the northern boundary is generally accepted to be the Mystic River / Route 16. There are a few references that Medford Hillside extends north of the river, but for simplicity the river is the best boundary based on our TAZs. Most references place the southern and eastern extent between Winthrop St. and College Ave. TAZs 557 and 558 are without a doubt in Medford Hillside. Given that TAZs 555 and 556 reside between Winthrop St and College Ave. and given all three data sources showed a basis for having a boundary extend south of Winthrop St., CTPS decided to include TAZs 555 and 556 in the Medford Hillside definition.

APPENDIX A
Transportation Analysis Zones in Medford



APPENDIX B

Business Affiliations

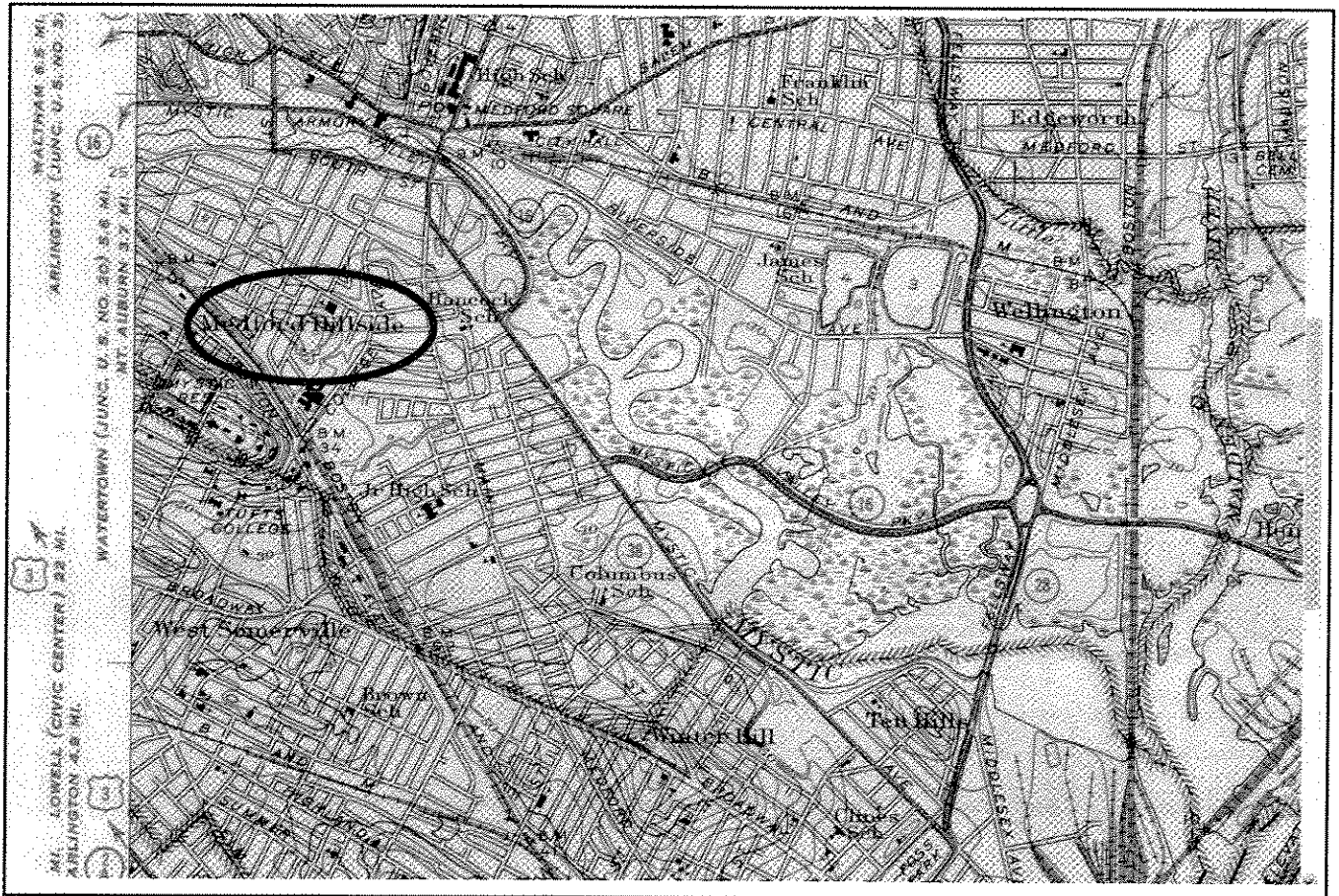
Business/ Structure	Address		Source	Importance
* Hillside Apartments	440 Boston Ave	Medford, MA	Google websearch	Name has Hillside in it.
* Hillside House	32 Dearborn Rd	Medford, MA	Google websearch	Name has Hillside in it.
* Pasquale Brothers Autobody	364 Boston Ave	Medford, MA	City Squares website	Associated with Hillside
24 Hrs A Locksmith	2151 Mystic Ave	Medford, MA	City Squares website	Associated with Hillside
Abbas Place	241 Boston Ave	Medford, MA	City Squares website	Associated with Hillside
* AMRAD Radio tower	College Hill, South of Winthrop St	Medford, MA	Historical Ref. Location = North Hall	Associated with Hillside
CleverGreen Cleaners	152 North St	Medford, MA	City Squares website	Associated with Hillside
Danish Pastry House	330 Boston Ave	Medford, MA	City Squares website	Associated with Hillside
Health Care Source	196 Boston Ave	Medford, MA	City Squares website	Associated with Hillside
Hillside Dry Cleaners	334 Boston Ave	Medford, MA	Google websearch	Name has Hillside in it.
Hillside School	Winthrop St/Emery St	Medford, MA	Historical Ref.	Name has Hillside in it.
Hillside True Value	325 Boston Ave	Medford, MA	Google websearch	Name has Hillside in it.
Hillside Wine and Spirits	323 Boston Ave	Medford, MA	Google websearch	Name has Hillside in it.
Integrated Health Services	300 Winthrop St	Medford, MA	City Squares website	Associated with Hillside
N.C. Electrical	184 Winthrop St	Medford, MA	City Squares website	Associated with Hillside
Oliver Deli	38 Riverside Ave	Medford, MA	GOBY websearch	Associated with Hillside
Rice Robert G PC	196 Boston Ave	Medford, MA	City Squares website	Associated with Hillside
Roi Solutions	196 Boston Ave	Medford, MA	City Squares website	Associated with Hillside
Sleep Health Center	200 Boston Ave	Medford, MA	City Squares website	Associated with Hillside
Tasty Gourmet	321 Boston Ave	Medford, MA	GOBY websearch	Associated with Hillside
Tufts Variety Store	285 Boston Ave	Medford, MA	City Squares website	Associated with Hillside
Ullas Flowers and Gifts	328 Boston, Ave	Medford, MA	City Squares website	Associated with Hillside

This was based on a sampling of businesses from web based searches conducted in the spring of 2010

* Locations south of Winthrop St

APPENDIX C Reference Map

1943 USGS 7.5 Minute Series Topographic Map,
printed in 1946 - Boston North, MA Quadrangle

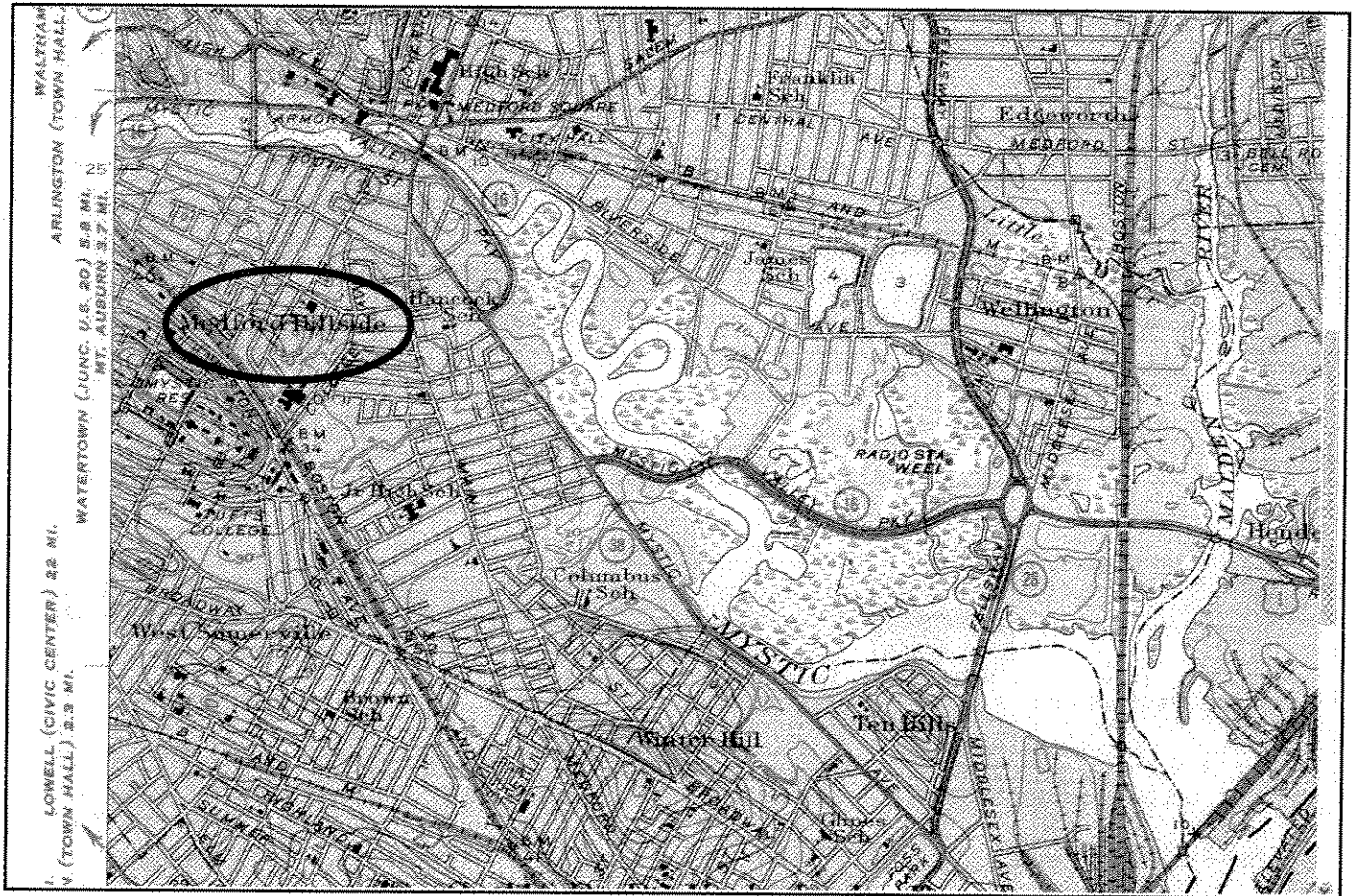


July 6, 2010

APPENDIX C

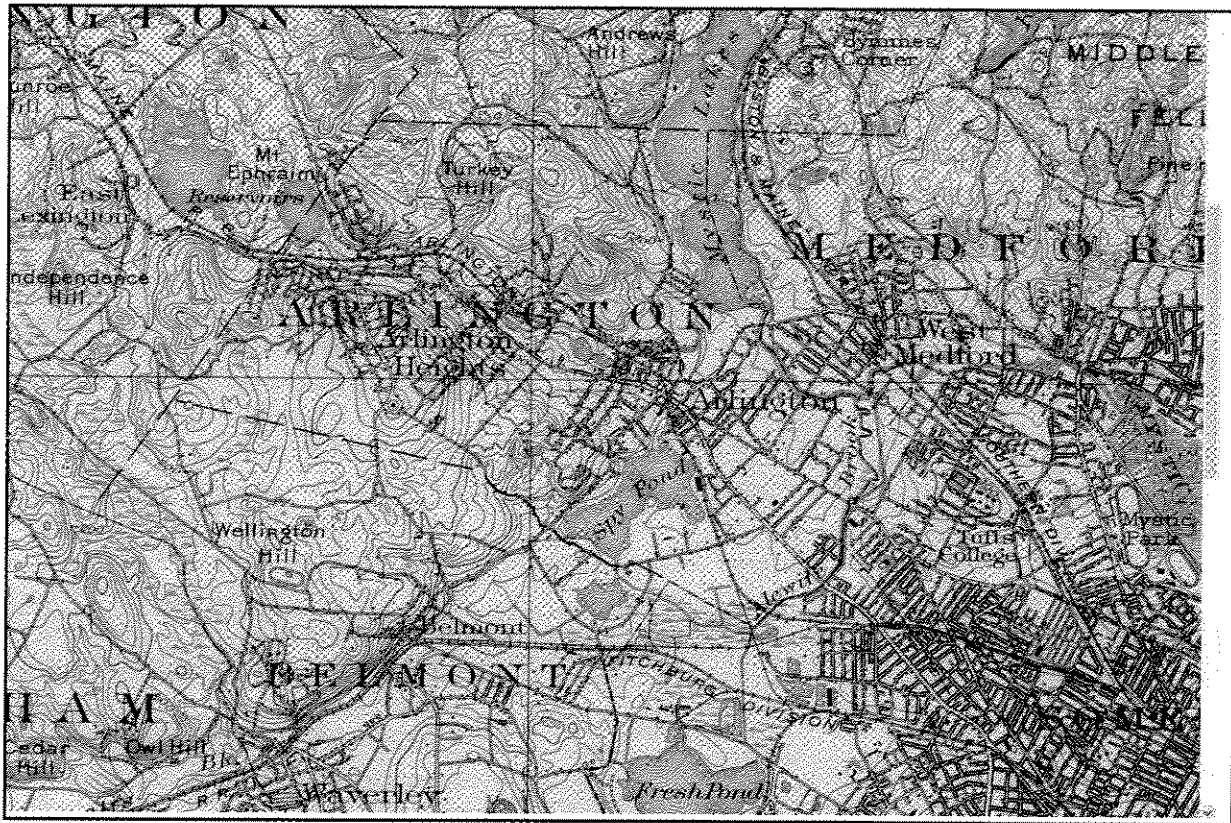
Reference Map

**1949 USGS 7.5 Minute Series Topographic Map,
printed in 1950 - Boston North, MA Quadrangle**



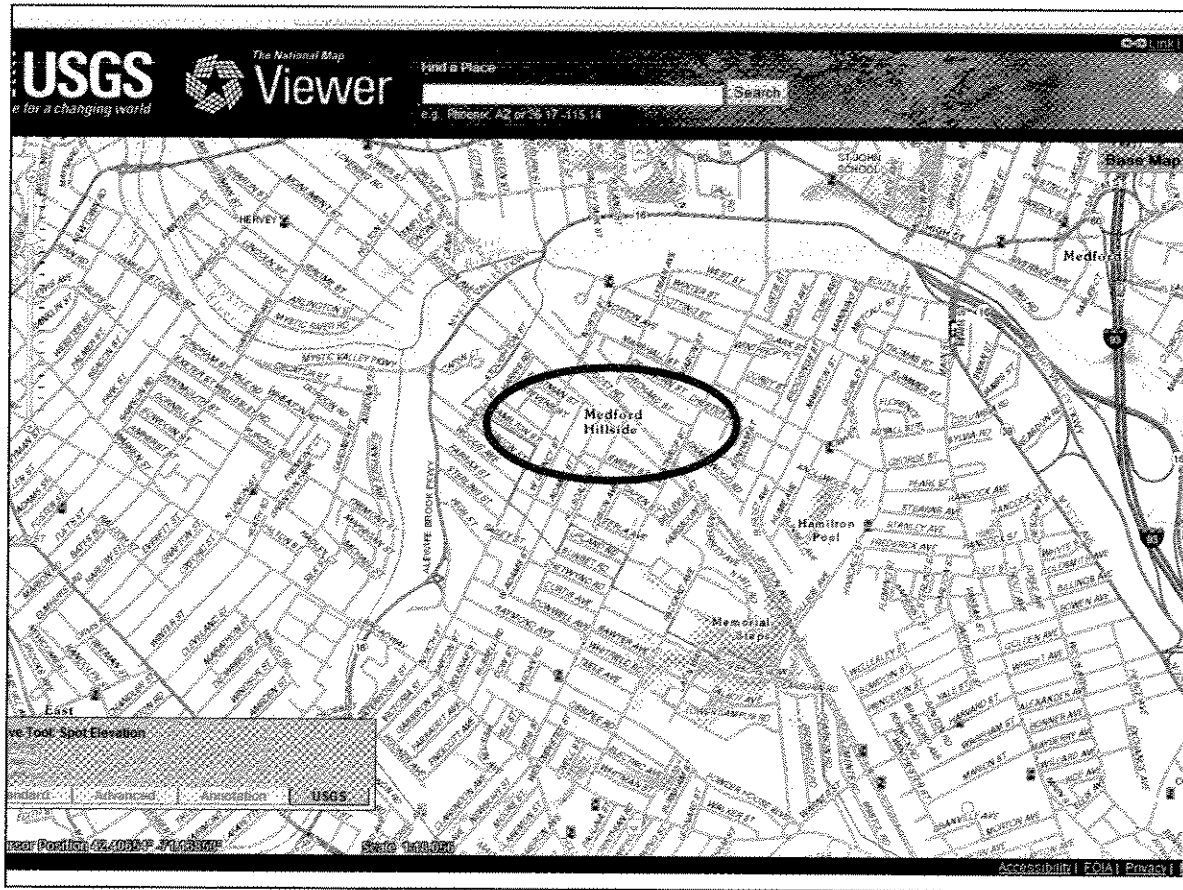
APPENDIX C Reference Map

1903 USGS 7.5 Minute Series Topographic Map,
printed in 1942 - Boston North, MA Quadrangle



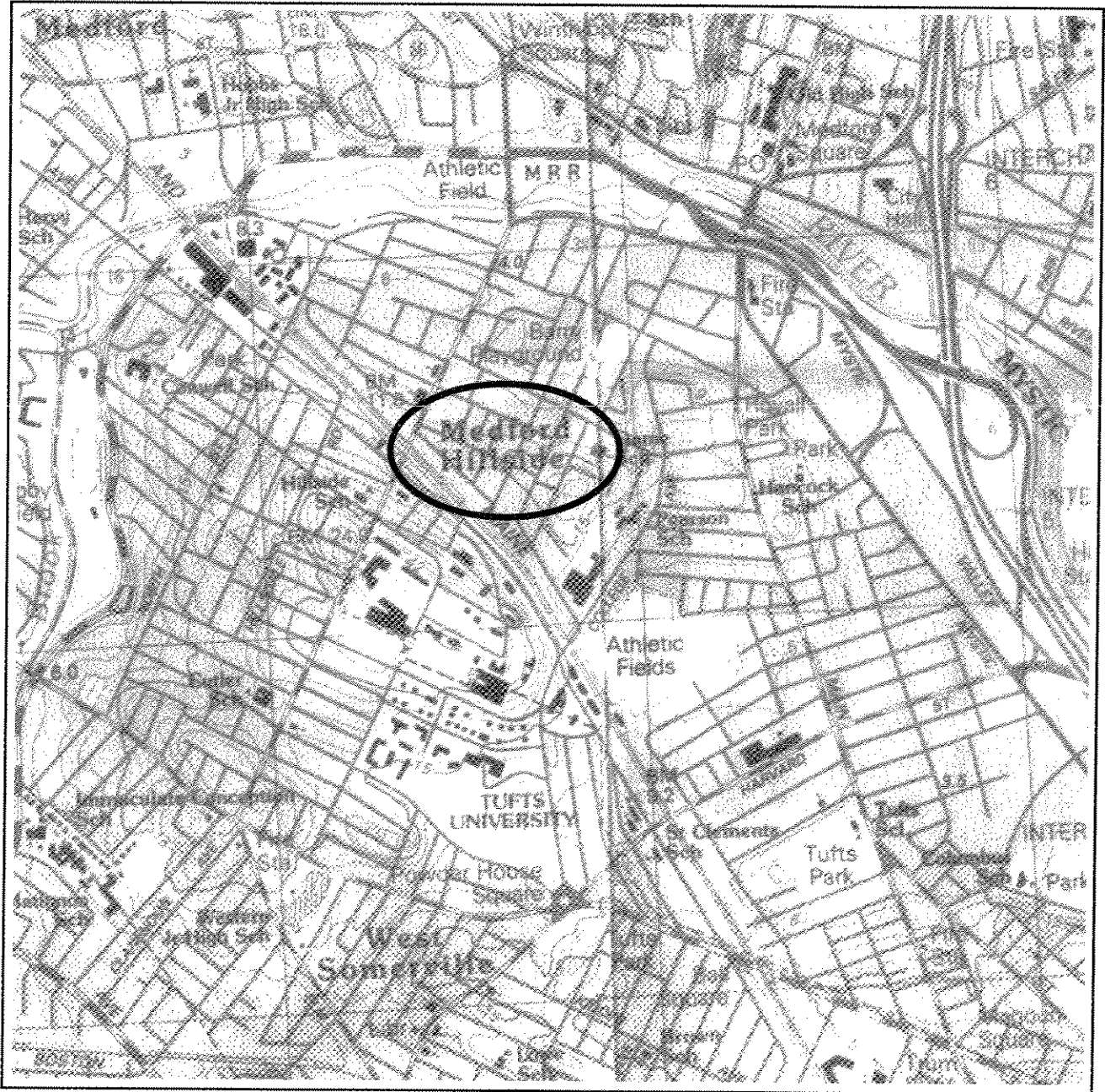
APPENDIX C Reference Map

2010 USGS website “National Map Viewer”



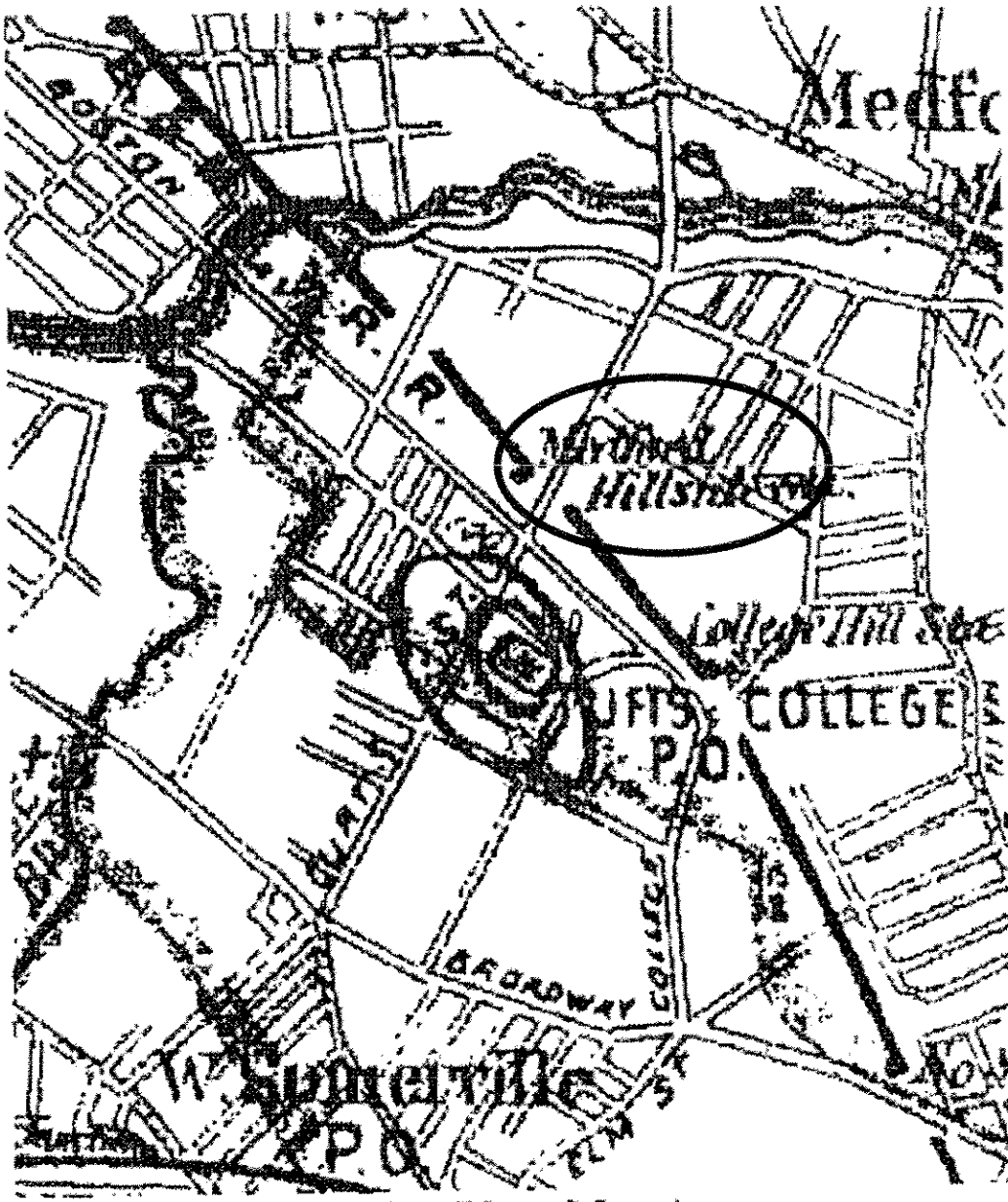
APPENDIX C Reference Map

1979 USGS 7.5 Minute Series Topographic Map,
printed in 1985 - Boston North, MA Quadrangle



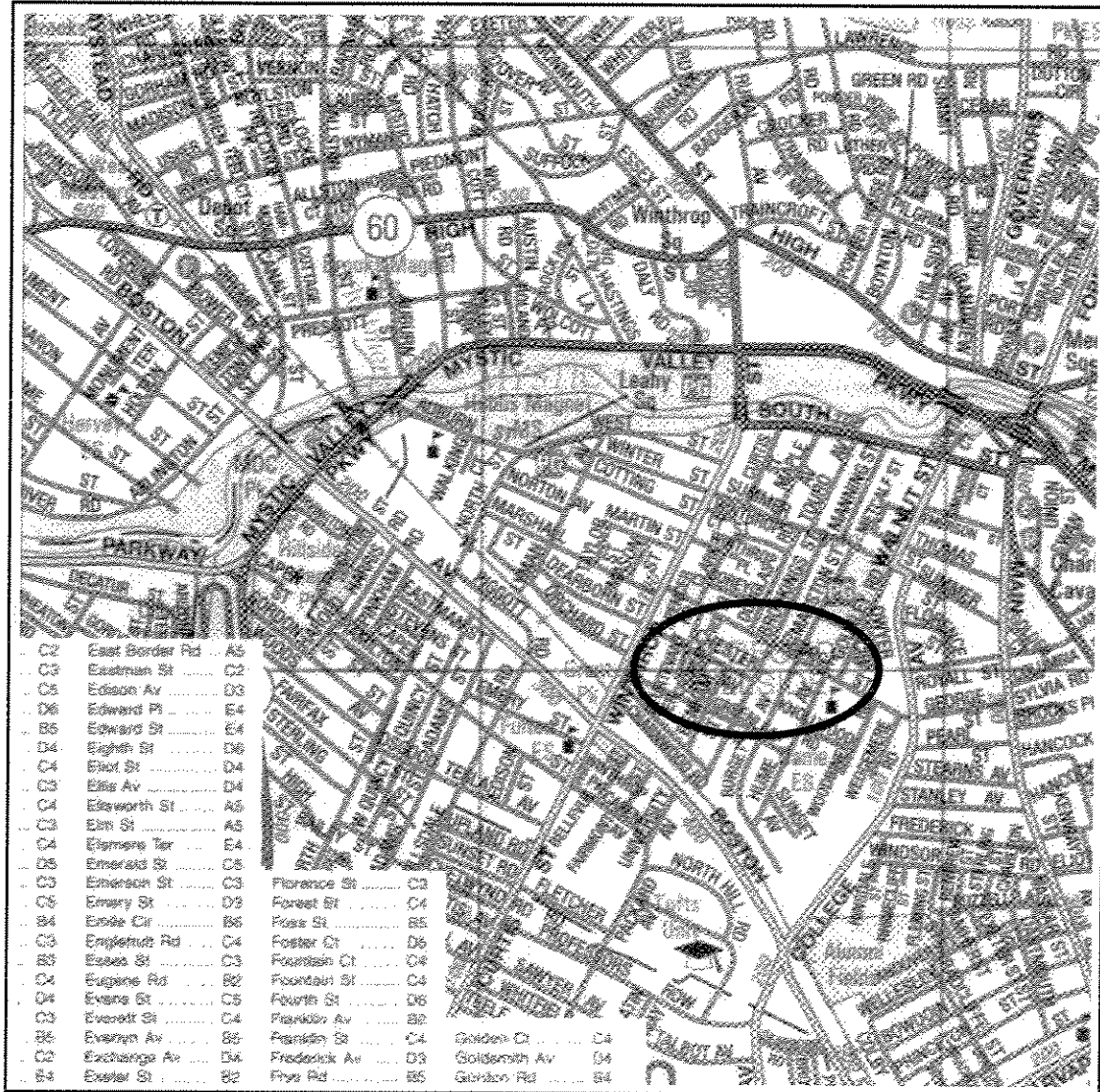
APPENDIX C
Reference Map

Atlas of Massachusetts, Plate #4,
Geo. H. Walker and Co. Pub. 1891



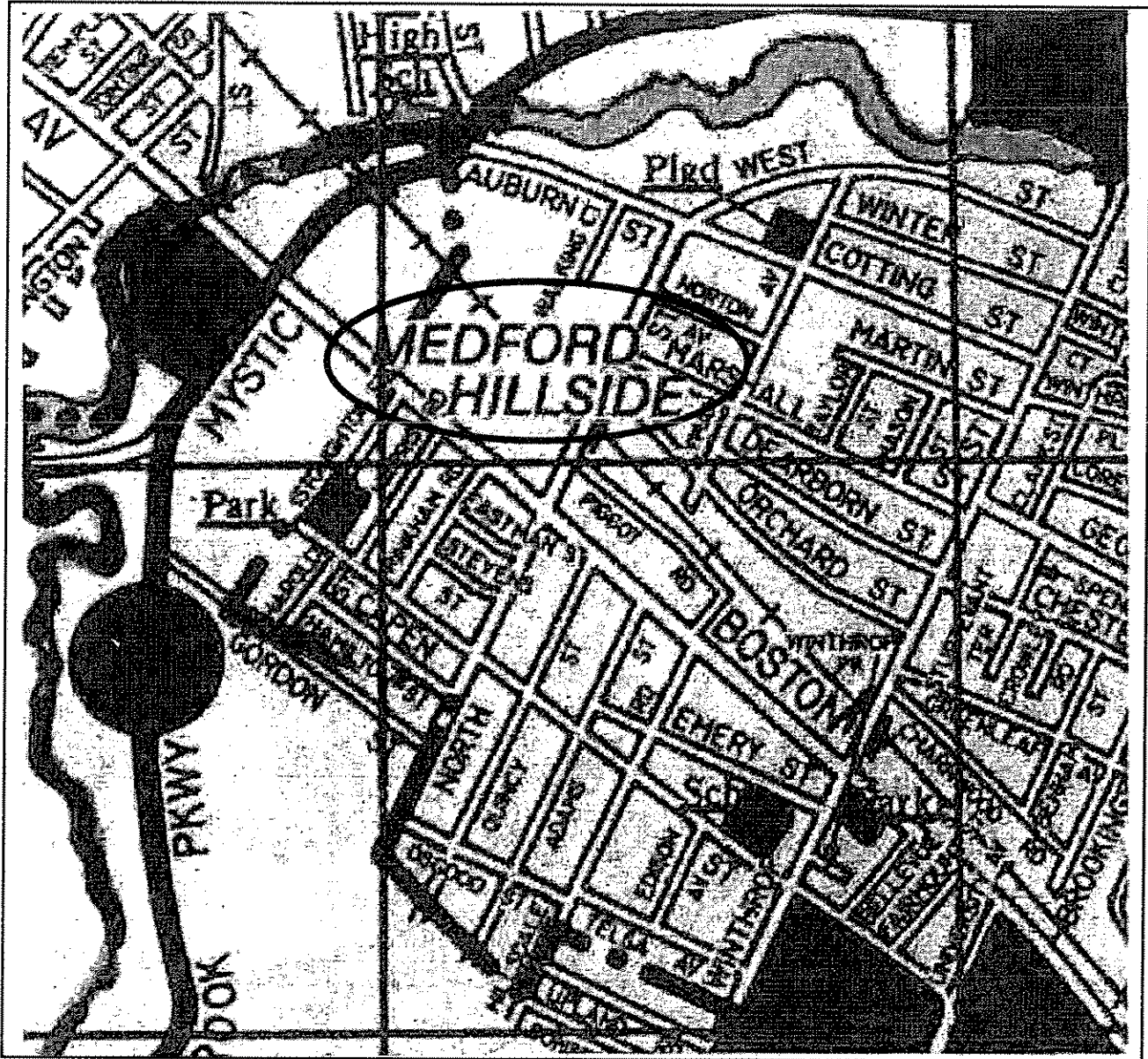
APPENDIX C Reference Map

2007 American Map
Metro Boston Eastern Massachusetts, page 146



APPENDIX C
Reference Map

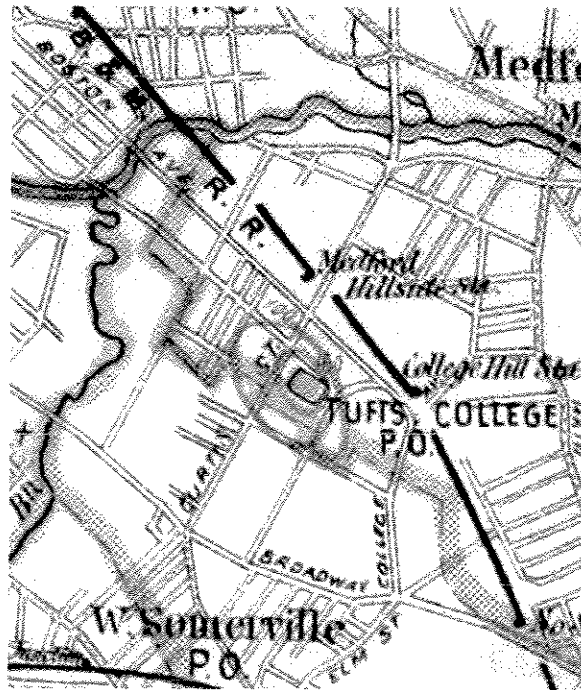
1997 Universal Atlas of Metropolitan Boston
and Eastern Massachusetts, page 140



**1979 USGS 7.5 Minute Series Topographic Map,
printed in 1985 - Boston North, MA Quadrangle**

Attachment 2

Historical Maps from the Medford Public Library Map Collection



Atlas Plate No. 4.

Atlas of Massachusetts

O. W. Walker, C.E.

Geo. H. Walker & Co., Publisher, 1891

(showing Medford Hillside Station at Winthrop Street and Boston Avenue
and College Hill Station at College Avenue and Boston Avenue)

Attachment 3



5 Year Strategic Plan

This document includes Narrative Responses to specific questions that grantees of the Community Development Block Grant, HOME Investment Partnership, Housing Opportunities for People with AIDS and Emergency Shelter Grants Programs must respond to in order to be compliant with the Consolidated Planning Regulations.

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West Medford – Tract 3393

West Medford is one of the most densely populated neighborhoods in the city. Over 45% of the housing units are renter occupied and 62% of the housing units were built in 1939 or earlier. The area is home to 30% of the City's African American residents and the neighborhood itself is 34.44% African American. The area also has a small Hispanic population, 4.2% of residents. The tract contains a 59% low/moderate income area, Block Group #1. This area is bounded by High Street to the north, Mystic Valley Parkway to the south, Mystic Street to the east, and Playstead Road to the west. The West Medford Community Center, serving predominantly minority and low income clients, is also located in this area. In 2008 the City completed a \$1.4 million community center facility as a joint venture between the City (using HUD funds) and the West Medford Community Center Board (using private funds). The City supports programs operated by the West Medford Community Center on an annual basis, through its public service funding.

Hillside – Tract 3394

Hillside is an older, concentrated residential area with 65% of the housing stock built pre 1939. The tract contains two areas of low and moderate income population concentrations. The first area, Block Group #1, is defined by Mystic Valley Parkway to the north and west, Winthrop Street to the east, and Marshall Street to the south. This area has a 55.2% low and moderate income population. The second area, at 52% low and moderate income, is bounded by Marshall Street to the north, Winthrop Street to the east, and Boston Ave. to the south and west. The population is predominantly White (85.76%), with 3.67% being African American, 3.13% Hispanic and 4.07% Asian/Pacific Islander. The area is home to a large transient population because of its proximity of Tufts University, which has a major impact on this modest densely populated neighborhood. Over 58% of the housing units are renter occupied. Plans to extend the Massachusetts Bay Transportation Authority (MBTA) Green Line light rail public transit service to this area are currently in the design phase and will have a major impact on the physical and economic environment when implemented.

Central Medford – Tract 3395

Central Medford is also a concentrated neighborhood, which contains two quite dissimilar populations. The southwestern section of the tract is home to Tufts University, a privately owned educational institution with many student-occupied apartments. The remainder of the tract, in contrast, is an older multi-family residential area. The low and moderate income area, (58%), block group 6, includes Tufts University. This area is defined by Boston Avenue to the north, Medford/Somerville line to the south, Harvard Street to the east and Winthrop Street to the west. The population of this tract is 82% White, with an African American population of 4%, a Hispanic population of 3.98%, and an Asian/Pacific Islander population of 7%.