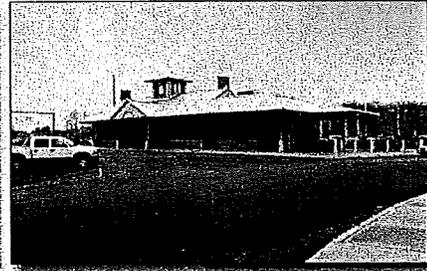
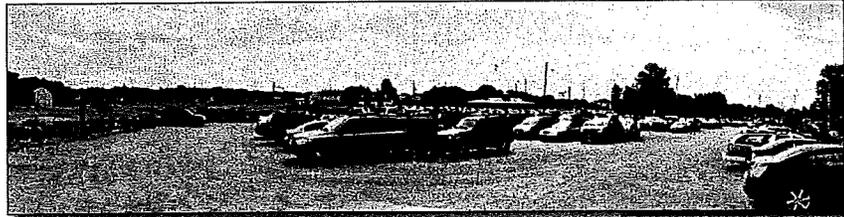


Making Smart Growth Work

FINAL REPORT
Mansfield Train Station Area Redevelopment Study



Prepared for:
TOWN OF MANSFIELD

Prepared by:
The Cecil Group
Environmental Partners
Bonz and Company
Walker Parking Consultants

July 2005

MAKING SMART GROWTH WORK

THE MANSFIELD TRAIN STATION AREA REDEVELOPMENT STUDY

A REPORT, GUIDE, AND RESOURCE

Prepared for the Town of Mansfield

Prepared by The Cecil Group Inc.

with Bonz & Company,

Walker Parking Consultants,

and Environmental Partners Group

July, 2006

PREFACE

This study started out as a task to prepare a plan to make a tired, polluted, former industrial site, the Hatheway Patterson property, productive once again. The solution turned out to be more elegant and complex than originally believed.

First, to explain why it is elegant - the solution discovered was to simply move the redevelopment project to a more suitable site that happened to abut the property on the south. This is the site adjacent to the MBTA Train Station and the subject of this study. Here the access is better, the land is cleaner and more visible, and is under used but held by landowners who are very interested in redevelopment. Increasing the allowed density to create a truly Smart Growth, transit-oriented project, as the terms are defined in Massachusetts and most of the rest of the country, could provide a wide range of benefits.

Now, why it is complex - this solution is complex because there are at least three private land owners, at least three state agencies, and the Town that all must come to agreement to achieve the redevelopment as planned. Prior to those agreements, the Town must make some critical choices about the future land use plan and how that coincides with local zoning and fiscal restraints. In concert with that plan, certain infrastructure improvements must be coordinated with redevelopment to ensure that the project can be carried out with minimal impact on the neighborhood and the Town as a whole.

The results of the first study were carried forward into this study where a more detailed analysis was completed and a very workable concept was developed, with action steps to complete the project. This study recommends specific programmatic elements, capital improvements, phasing, and financing programs to attain the positive outcomes originally desired through the first study.

Readers are encouraged to familiarize themselves with both this document and the previous report, *Hatheway Patterson Reuse Study*, to gain a full appreciation of the opportunity presented to the Town of Mansfield. Based on the experience of other communities within Massachusetts and elsewhere in the region, the proposed redevelopment plan provides a path to a reachable and worthwhile goal. However, to make it successful, the Town must embrace the ideas and commit itself to completing the plan. This plan with the attachments may then be used as a resource guide during the process.

Our team very much appreciates the opportunity to have assisted in this effort.

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Mansfield Transit Area Rezoning Proposal

Every community is faced with choices. Choices are made regarding the delivery of public services, community development, finances, and governance. These choices are made after careful study and are based on considerations such as the limits of community resources, the opportunities, and the risks.

This Mansfield Transit Area Rezoning project presents choices for a Transit Oriented Development initiative next to the Mansfield train station. It proposes important choices with significant implications. However, it is also a unique opportunity.

Originally the study was proposed to determine the best choice for rezoning that would restore the land surrounding the Train Station using the state's Transit Oriented Development and Smart Growth programs as the springboards to advance the redevelopment of this underutilized former industrial land. However, as the project unfolded, the nature and scope of issues surrounding potential development at the site required an expansion of what the Town must consider to include environmental resources, neighborhood stability, downtown revitalization, regional transit, road infrastructure, and financing. The extensive public involvement process helped visualize and discover these broader issues and opportunities and everyone's participation has been greatly appreciated.

In response, a package of programs and actions has been prepared as a solution. The Town now has before it choices that could determine a better future for this site, the surrounding neighborhood, downtown businesses, and the Town as a whole.

Project Concept

The project is a combination of public facility and infrastructure improvements; roads, intersections, parks, better access and beautification, combined with private, mixed-use development that fits the "smart growth," transit-oriented development plans that have been successful in many other communities.

The concept is to build a project that works with the current investment in the public transit (MBTA) system, gets additional cars off the roads, and allows the Town to build the improvements that residents have been asking after for years. With the correct mix of uses, there is also a potential for special uses such as an activity or recreational center, a day care center, and some specialty retail.

To accomplish these changes, the Town has to make a choice on whether to change the zoning to allow some additional development, over and above what is possible now. This means probably no change in allowed uses, but an opportunity to build more of what is already allowed. The overall direction in this plan is driven by the principles of Transit Oriented Development summarized next.

Transit Oriented Development Principles

Transit Oriented Development (TOD) is a planning approach that focuses a mix of land uses close to a transportation node. The mix of uses includes residential, commercial, light industrial, recreational and civic uses, which create jobs and fiscal benefits for the Town. Development is compactly designed within a ¼-mile reach to the transit station, resulting in a highly walkable community. The concept minimizes traffic congestion and maximizes pedestrian safety. The strategy creates vibrant neighborhoods with attractive, integrated public open spaces and a variety of housing types. With efficient and thoughtful design that is based on the surrounding scale and existing character, the developments foster a distinctive sense of place for the community. Sustainable site planning and design ensure energy conservation and the preservation of valuable natural resources nearby. Centered on the transit node, jobs and services are easily accessible through a variety of transportation modes. Importantly, development projects that meet TOD criteria are eligible for state funding.

Summary of the Rezoning and Public Improvements Proposal

A series of studies was completed to better understand the property and the potential for a project that would support community goals. The appendices include discussions on the different elements of the previous analyses. The current concept for rezoning to allow improvement of the open industrial land and parking lot surrounding the train station includes:

- Rezoning a portion of the I-3 Industrial district over the area west of the Train Station where the land is currently cleared and there is the commuter parking lot, to allow increases in the amount of mixed-use development, while specific improvements to public facilities occur at the same time. The project is outlined as the TOD Development Concept (see below).
- Public improvements including:
 - Chauncy Street/Route 106 reconstruction from the western entrance to the train station parking area out to Route 140 for either four lanes with one or no sidewalks, or, reconstruction for three lanes with the center lane used as a peak hour lane westbound in the evening and eastbound during the morning (Layout plans for Rt. 106 are included in Appendix IX);
 - Expanded public park that replaces the existing parking beside the train station,
 - Improvements at intersections of Chauncy and North Main Streets,
 - A new signalized intersections into the commuter parking lot,
 - A separate access for the Highland and Draper Avenue neighborhood,
 - Better pedestrian access along Route 106, North Main Street, and the residential streets, including a new Route 106 overpass at the train station; and,
 - A possible new relief road from the western parking lot north to County Street through the Hatheway Patterson property.

These improvements are predicated on the proposed improvements to the “boat section” of Chauncy Street under the crossing rail lines that are presently funded with federal money.

- One of the key public improvements in the first phase is replacement of the surface parking lot on the west side of the Train Station to better manage commuter and resident parking. This parking lot would be accessed from the new intersection on Chauncy Street. The plan includes the purchase of the land necessary to build the new lot. Because the Town and state already own a good portion of the land, the purchase of additional land could be part of a negotiated deal with the private landowners to allow the development of their portions of the plan.
- In the long term, it is possible that additional funds may be obtained and the parking garage could be constructed. The new surface parking lot would be the area used to build the garage. As proposed, the Town would own the area of the surface lot and so be able to build as needed.
- The Town and state would share the costs of improvements to the public infrastructure, and private development would finance the marketable elements of the project. Below is a summary of the development concept and the public financing plan.

Summary of the TOD Development Concept

The TOD Development Concept advanced by the consultant team includes elements of the layout and program of the proposals from landowners while addressing issues of circulation, market feasibility, and phasing. The strategy incorporates parking improvements and coordinates the development with current and future road and sidewalk improvements. It is important to note that the plan advanced by the consultant team may not be the actual plan proposed under the new zoning, but is illustrative of what could be created under the amended regulations.

The plan composed by The Cecil Group team has two phases. The phases are proposed to advance the project within the near-term and allow the Town to obtain the necessary funding to build the structured parking facility that will support the project uses, commuter parking, downtown business parking, and could even be designed for some growth.

The illustrations and descriptions on the next pages are designed to show that the concept is indeed workable. However, it is important to note that the actual outcome under a rezoning may be somewhat different than what is shown here. This is because, as the idea evolves into an actual project, the more detailed designs may require modifications. This is one reason why the zoning should be flexible to allow changes.

Phase 1 Elements:

- Two surface parking lots west of the RR right-of-way and north of Rte. 106/Chauncy Street;
- 34,000 square feet of retail dispersed between two parallel buildings that flank opposite sides of the main internal street;
- 20,000 square feet of office space that is integrated into the above retail development;
- 6,000 square-foot day care facility also contiguous with the initial retail development;
- 102 units of housing buffering the existing neighborhoods from the proposed Phase 2 retail development. The housing is divided into approximately eight, two-story multi-family residences with parking underneath;
- Eight acres of public open space located on the upland area between the wetlands and the CSX rail corridor; and,
- An enhanced village green area outside the train station.
- Optional construction is a commuter-parking platform on the south side of Rte. 106/Chauncy St.

Phase 1 Description - The total building area for the Phase 1 plan is 182,400 square feet with a total of 260 parking spaces dedicated for the retail, office, day care, and residential components. The combination of the south parking platform and two surface lots provides 1257 parking spaces. It is assumed that some residential parking will be accommodated by garage and on-street spaces. Given that 977 of these spaces could be set aside for commuter uses, the surface lots and platform can allocate another 260 spaces for the surrounding mixed-use development. Without the parking platform on the south side, the commuter parking is not increased from the existing count, just replaced in kind. Otherwise, the additional spaces created by the new construction could be reallocated between commuters and the other uses. In the latter case, shared parking should be included to ensure parking can support the program of uses.



Illustration of Phase 1

Phase 2 Elements:

- A 325,600 square-foot, four-story structured parking facility that replaces the Phase 1 surface lot opposite the train station along the west side of the right-of-way.
- 20,000 square feet of retail on the first level of this parking structure.
- 46,000 additional square feet of retail within a centrally located, main-street style complex.
- A 72,000 square-foot, two-story recreational facility that replaces the northern surface lot, which is no longer needed with the parking structure. The facility contains its own requisite parking.
- Up to 190 additional housing units are proposed. Actual numbers would be determined by zoning, but could be altered depending on how much space is devoted to other uses.

Phase 2 Description - The entire building area for Phase 2 is 463,600 square feet. Added to the Phase 1 building area, the development totals 646,000 square feet. Overflow parking

for the recreational facility will be supplied by off-hours shared parking in the parking structure. The total amount of parking for Phase 1 and 2 is 1630 spaces. The plan easily provides enough parking for the 977 commuter spaces, in addition to the 590 spaces needed by the Phase 1 and 2 housing and retail development.

The layout of the plan knits existing roadways near the Cleveland Twist Drill property to available rights-of-way near the Foundry LLC parcels, spanning the existing surface parking. Access to the development opens at the intersection of Highland Avenue and Rte. 106/Chauncy Street. From this point, two parallel roads will lead east into the site. The first road flanks Rte. 106/Chauncy Street, toward the parking areas. The second right turn off Highland leads toward the mixed-use residential portion and on to the open space. The integrity of the existing residential neighborhood will be maintained through the treed residential buffer. Since the only access to the residential development bypasses the existing neighborhood, the plan minimizes traffic congestion and maximizes pedestrian safety.

The height of parking structures and retail development near the right-of-way can be used to create pedestrian bridges over the rail line to the train station. The village green improvements could include a new pedestrian and bicycle connection over Rte. 106/Chauncy Street leading to the top of Old Colony Road. An additional connection has also been considered north to County Street to allow northbound traffic to skirt the key intersections and relieve congestion created by the additional turning movements. In this way, the development fosters additional connections between the neighborhoods to the west, the train station, and the Downtown.



Illustration of Phase 2

Implications of the Proposed Rezoning and Redevelopment

The I-3 Industrial zone is the most liberal district in Mansfield. It allows almost all land uses from residential to heavy industrial. The proposed zoning does not add to this list with new allowed uses. In fact, the bylaw encourages the uses that support the TOD concept; a mix of uses that is predominantly residential with an active commercial component as discussed in the next section, *Mix of Uses*.

The allowed height of buildings in the district is 45 feet, and no change is proposed to this standard. However, the proposed zoning is different in the allowed density of those permitted uses. By allowing more density, the project can include the right mix and number of buildings to make it financially feasible. The site capacity analysis is included in Appendix VI. The table, Site Development Calculations, presents the various densities that are possible. Up to 300 housing units are possible through the upper zoning options. The densities also allow the project to generate enough taxes to support the road and other infrastructure improvements needed for this area, through a District Increment Financing plan as discussed below with the summary financials shown in Appendix V.

In addition, the rezoning allows a two-step approval process as described in the section, Review and Approval. The outline of the proposed zoning is included in Appendix III.

Mix of Uses

The Town is able to generally state what the land uses can be used for under local zoning. At this time the existing I-3 zoning allows a broad range of uses: residential, commercial and industrial. The problem is that most of the possible uses are not competitive in this market; Cabot Park holds a large amount of office space, new retail shopping centers and the downtown capture the retail side, and industrial is not strong except for warehouse and storage which uses a lot of land area but does not significantly increase land value.

The consultant team reviewed the real estate market trying to determine a reasonable mix of uses that would become a viable development project at the train station and help fund those public improvements the Town is seeking. The proposed zoning does not significantly change the mix of uses, it only allows more of what is marketable and typical of most TOD projects; about 80% residential, 10% commercial, and 10% open space. Coordinated public infrastructure improvements occurring at the same time. A suggested list of uses to consider in the rezoning is included in the Appendix III. Again, ideas generated for the list came from the public input in the public workshops and meetings summarized in Appendix II.

Review and Approval

The project starts with a rezoning by Town Meeting. Two-thirds of Town Meeting must vote to approve any change in zoning. This is followed by negotiations and agreements with the private developers and the state to allow the development to start.

The Town handles the design of the public projects in coordination with the developers and state, and the private developers design the private side of the development. When the developer(s) have a Master Plan, which shows what they want to build, they will be asked to bring this before the Planning Board, get an initial approval and then proceed in designing the detailed plans. After that design is advanced, the developer will return to the Planning Board, Public Works, Health, and any other local permit authority, gets the final approval. When ready to pull the building permits, the Town will synchronize the public construction projects so they are built in a coordinated fashion.

Summary of the Public Financing Plan

The means to pay for the public improvements and impacts of the project could come from the state funds being offered for TOD development near train stations, a "District Improvement Financing" program (chapter 40Q of the state laws), and use of the state's chapter 40R and 40S, smart growth and school fund regulations. See Appendix IV for an example of a recent 40R bylaw approved in the Town of Plymouth.

State funds could be obtained from up to two of the following sources. This is because no other state discretionary funds are available when a community adopts a 40R project, only Town funds, such as tax funds from a DIF, may be added to the project:

- TOD program funds from the state, with up to \$2 million in grants for each project being made available for “smart growth” projects that include Transit Oriented Development. These funds were considered a key opportunity to enable this project. However, several other funding mechanisms could achieve the public goals for improvements to the congestion and environmental improvements.
- The District Improvement Financing, or DIF, funds are obtained from the new private development under a special tax program specified by chapter 40Q of the state laws. Basically, because there will be an increase in taxes from new development, part or all of that new increase in taxes can be used to directly fund public infrastructure projects. The private developers and owners do not pay more taxes than they would normally pay. But the increase in taxes that results from their development can be used to fund the bonds used to construct improvements to roads, sewers, parks, and other public facilities. The Town must guarantee the funds for the bonds. However, an agreement can be created to connect the construction of the improvements with the construction of the private development projects – essentially a “performance” guarantee.
- The Chapter 40R Smart Growth Zoning and Housing Production regulations (760 CMR 59) and Chapter 40S Smart Growth School Cost Reimbursement provide a means for the Town to receive state incentive payments for Smart Growth, high-density projects such as this one. The payments would be made for rezoning the property, for building the units, and for ongoing reimbursements for schooling of children from the rezoned area based on a formula that first discounts funds from other sources (taxes, auto excise, and Chapter 70). These funds are distributed on the cherry sheets each year after submission of the required documentation. In addition, under the enabling legislation, the Town is given favored status for discretionary state funds.

The reason for consideration of the chapter 40R/S program is to cover the costs of school children that could be housed within the new units. The following section reviews the potential impact of on local schools.

School Age Children and School Funding

The impact of school-age children was a frequently raised issue during the study because of the proposal to include housing units in the project. The number of school-age children was calculated based on the Town demographic and school department information. The consultant team found census statistics that show 1.86 children per household as an average in Mansfield. Although townhouses and multifamily units presumably have less, this could be used to suggest the maximum number of school-age children that might live in the development where there are sufficient numbers of bedrooms.

The financial analysis was completed on the basis of 1- and 2-bedroom units in this project, but we can assume that 10% of the units could be 3-bedroom units. So, with a maximum number of total units at 300, we could have thirty 3-bedroom units, and those

units hold the average number of children, that means about 60 school-age children. Since 11% of the units have to be affordable, with "local preference" for who moves in, meaning that families already living in Mansfield will move in, this is a conservative estimation for the maximum number. We may expect other children, but fewer per unit, in the 2-bedroom units.

In addition, this study has not distributed the children by ages and grades. A distribution of ages means that not all the children will be in the same grade and the costs of education are not the same for different age groups. Regardless of the number of children, the state program described above, chapter 40R/S, could provide a key to financial mitigation.

Funding of Additional Schooling Costs

The financial analysis shows the project ranging in total value from \$50 million to over \$100 million depending on the number of units. The estimated taxes on the low end are almost \$600,000 per year and could be over \$1.2 million per year, which is enough to pay for a bond issue for public projects and leave additional money for the General Fund and School Department. With a portion of these tax funds used to pay the infrastructure improvements, this leaves about \$300,000 at the low end and up to \$900,000 of estimated unencumbered tax dollars that could be available for other community expenses.

The remainder of the difference could be funded with the state's 40R/40S program. A recent example of the 40R/40S program in Plymouth is summarized below.

Examples from Other Communities

Communities that identified themselves as acting on this type of rezoning for TOD, include Acton, Amesbury, Amherst, Barnstable, Brockton, Dennis, Haverhill, Lincoln, Newburyport, North Andover, Pittsfield, Plymouth, Scituate, and Westwood. Towns that have adopted 40R regulations include Plymouth, Norwood, North Reading and Dartmouth.

Plymouth Town Meeting recently passed the 40R zoning that will allow the redevelopment of the Cordage Park area. This is a former mill site at the end of the MBTA rail line. The project includes about 600 units of housing, plus a mix of commercial uses and open space. A comprehensive set of bylaws and design guidelines have been approved that will guide the redevelopment and permit the state reimbursements to the town. A copy of these adopted standards is included in Appendix IV.

District Increment Financing Examples

Massachusetts' District Increment Financing (DIF) is elsewhere called "tax increment financing" and has been used across the country since the 1960's. This concept is attached to redevelopment areas, where infrastructure improvements are needed to advance the new development that will in turn provide the tax increases to support the public bonds. As it was only recently adopted as a concept in this state, to date it has only been used by Worcester and Quincy. However, a key example of a DIF for a project of the size and scope of the Mansfield TOD is the town of Tiverton, Rhode Island, for a project with 290 residential units and recreational projects that needed road and sewer improvements. The

road and sewer were paid for under the tax increment. This project is currently into the final phase of construction with the tax increment being generated as proposed.

Implementation

The completion of these projects requires a coordinated effort between the state and Town, and agreements with the landowners or developers that create a partnership. However, the first step is to define the Town's goals and intent and to institutionalize the program.

Initial Town Actions

There are a series of steps that will position the Town to negotiate and clarify the direction for all further actions, to ensure the partnerships and decisions clearly follow the planned goal.

- **Adopt a Policy Directive** – The chief elected officials, the Selectmen, should lead the effort by establishing Town policy to act according to the remainder of the steps. This will ensure that further actions and discussions can be advanced with the non-town entities such as the state, federal agencies, and developers. The policy should state the ultimate objective, generally defined through the vision, and commit the Town to taking the series of steps that could achieve that vision.
- **Designate an Implementation Team** – Success requires a team of individuals committed to completion of the redevelopment plans, such as concluding contracts, agreements, and negotiations. In most successful redevelopment projects there are actually two phases. One is the planning phase where an appropriate plan for redevelopment is concluded. This requires consensus building and adoption of a program that can be implemented. This study recommends how to advance that first phase. The other phase is the implementation and it requires a team to assist it. This team must become familiar with selection processes and legal agreements that are unique to a complex redevelopment project. This team must also be prepared to respond to changes in direction that will occur in a complex redevelopment project.
- **Approach the State** – The Selectmen or their representatives should then approach the state agencies that can advance the project; Office of Commonwealth Development, Executive Office of Transportation, Mass Highway, the MBTA, and the Department of Housing and Community Development, to establish joint interests in the outcomes for the program. In addition, agencies such as the Massachusetts Technology Collaborative and Mass Development could be examined as to whether to add their support to certain elements. Armed with the plan and program for action, the agenda for the meetings is to explore the state mechanisms that would allow the plan to proceed, determine where the state programs require specific actions on the part of the Town, determine the potential value in a partnership, and determine the level of support of the agency towards the proposed partnership.

- **Prepare a Memorandum of Understanding** – Before further commitments should be made, a Memorandum of Understanding (MOU) should be drafted and committed to with the state agencies. This MOU will define the processes within which the programs may be acted upon, the roles of each of the parties, and the ultimate goal and purpose for the redevelopment and public improvements. The MOU may be crafted to be very specific in the roles and actions, include provisions for transfer of MBTA land at the lowest cost, changes in the plans and partnerships, define contingencies in the event of significant changes in status of the participants or plans, and specify how a development partner will be brought in to achieve the plan.
- **Coordinate with the State Legislature** – Similarly, the state legislative body should be approached to ensure that they are familiar with the plan of redevelopment and with their potential roles in ushering through supporting legislation. This supporting legislation will be necessary for certain legal agreements and land transfers that will be needed to accomplish the plan. At the same time, certain federal programs such as infrastructure (Federal Highway) and economic development could be explored with the assistance of the area’s federal legislators.
- **Prepare the “Toolkit”** – The suggested “toolkit” for implementing the redevelopment project is discussed in the next section of this report. These decisions include funding mechanisms, zoning regulations, and capital program decisions. Many of these require Town Meeting action and should be scheduled for the Warrant as soon as possible. Other actions only require the filing of an application, such as the grant programs. However, to make the strongest application, the initial steps of setting a policy direction for the Town should be completed to support the program requests. One of the first actions is to obtain the design funding necessary to improve Route 106/Chauncy Street, and the other infrastructure improvements that will be needed to improve access.

Adopting the Program

The next steps, some of which can be initiated concurrent with the initial actions, is for the Town to complete the legislative and administrative actions that fall under its powers, thereby creating the “toolkit” from which the subsequent projects can be built.

- **Rezoning** - The I-3 Industrial Zone must be rezoned in the area(s) proposed for the redevelopment plan to be accomplished. A two-step process is outlined that starts with the creation of a master plan that defines the components and design principles applied to the proposal, followed by a detailed project review using performance standards and prescriptive standards that guide the designer and allow the Town to review the details of the project proposal. Form-based zoning is a very acceptable means to accomplish the goals of the project and the Town in this project, but more traditional zoning is also appropriate. The outline of a zoning proposal is included in Appendix III.

- **40R Zoning** - The zoning could include the standards of Chapter 40R/40S to obtain the funding from that program. The funding is in the form of an initial payment based on the number of units approved in the rezoning, followed by payments of \$3,000 for each unit included in a building permit. If less than 200 units the maximum initial payment would be \$200,000, and if over 200 units the payment would be \$350,000. Consequently, if the project has over 200 units the total state payments would be over \$950,000, obtained from \$350,000 for rezoning plus \$600,000+ for building permits.

The 40S funding is for the additional costs of schooling children in the project, after comparing the school costs with other jurisdictions and discounting other tax funds received from the project. A yearly accounting for the children and other accrued taxes is necessary to receive the funds. The funds are then designated on the “cherry sheet” each year.

This rezoning requires approval by the state (DHCD) prior to submission for Town Meeting vote. The zoning bylaw also includes the design guidelines that are applied through the Site Plan Review process. This process would be slightly different from the outline provided for the first non-40R rezoning option, which includes a Special Permit rather than Site Plan Review for the second step. The 40R standard is to clearly define the criteria for the zoning and approval prior to adoption so that the state can be assured the project proceeds and the Town can have control over the character of the development. An example of a 40R rezoning is included in Appendix IV.

- **Capital Program** - The capital program is the list of projects that are required to support the proposed development. The projects were previously listed and include:
 - Chauncy Street/Route 106 reconstruction from the western entrance to the train station parking area out to Route 140 for either four lanes with one or no sidewalks, or, reconstruction for three lanes with the center lane used as a peak hour lane westbound in the evening and eastbound during the morning;
 - Expanded public park that replaces the existing parking beside the train station,
 - Improvements at intersections of Chauncy and North Main Streets,
 - A new signalized intersections into the commuter parking lot,
 - A separate access for the Highland and Draper Avenue neighborhood,
 - Better pedestrian access along Route 106, North Main Street, and the residential streets, including a new Route 106 overpass at the train station; and,
 - A possible new relief road from the western parking lot north to County Street through the Hatheway-Patterson property.

The essential program elements are those that advance the access improvements, which currently hamper site development. The steps to advance these projects involve:

- Designing concepts for the infrastructure improvements – The designs could be funded through chapter 90 highway funds, line items in the Town budget, CDBG or planning funds. The concept plans are lower cost design efforts that allow public and technical review and discussion.
- Making decisions on acceptable designs – The means for public consensus building are well established in the Town and can be advanced with the work done under this study.
- Preparing cost estimates; and,
- Approving the projects by Town Meeting vote and a General Election on a bond issue.

The list of key projects and the probable costs associated with them are included in the appendices. The adopted projects could in turn be funded with the state TOD funds and a District Increment Financing (the state law is found at chapter 40Q) program.

Advancing the Projects

The next series of steps are needed to ensure the future construction is coordinated between public and private, state and local, and other interests.

- **Agreements** - To accomplish the projects, agreements must be established between the Town and the state, and the Town and the landowners or developers. The agreements between the Town and the state would:
 - Obtain easements or land for the purpose of completing the TOD Plan
 - Permit state funds to be obtained for the TOD program
 - Permit state funds to be obtained for the 40R/40S programs.

The agreements between the Town and the landowners or developers would establish the basis for:

- Easements or land for the purpose of completing the TOD Plan
 - Permit state funds to be obtained for the TOD program
 - Permit state funds to be obtained for the 40R/40S programs.
- **Master Developer** - An option for the Town is to consider a Master Developer who would be in charge of the whole project, including the completion of the infrastructure improvements, and construction of the new public and commuter parking and private development. This would best be facilitated with the creation of a Redevelopment Area that includes all of the properties under the proposed project. state law gives many powers to the Town under the Urban Redevelopment Act (chapter 121B of state law; a discussion of this option was included in the first Hatheway Patterson site study), including the ability to designate a master developer.

Background on the Mansfield Train Station Site

Project Area

The site of the proposed redevelopment encompasses five parcels near the station. Owned alternately by the Town, the MBTA, and local developers, the parcels are clustered against Rte. 106/Chauncy Street, Highland Avenue, and the rail corridor. The properties total approximately sixteen acres. Zoned as Industrial I3, this mixed-used industrial district allows uses such as storage, light manufacturing, commercial options, and specific residential typologies. Select additional uses and particular housing types require special permits. The properties are bordered to the west and the north by the Rumsford River, adjacent wetlands, and residential neighborhoods with detached, single-family homes.

A sixth parcel, the town-owned Hatheway-Patterson property, is located farther north of the station and holds eight acres of developable land and a larger area of the neighborhood wetland complex. Another portion of the Hatheway-Patterson property is located across the railroad tracks. Because of its separation by the railroad right-of-way and has been programmed separately for industrial development, this parcel is only considered as a potential means of secondary access for the TOD project.

Analyses of the property were completed from the standpoint of zoning and mathematical calculations as a Site Capacity Analysis (see Appendix VI.), and as an exercise in design to determine the physical plan that could accommodate construction and work within the unique restrictions of the site (see Appendix I).

Previous Analysis

The basis for this TOD initiative began with the potential redevelopment of the Hatheway-Patterson property, located north of the train station along County Road. This prior reuse option proposed industrial or flexible space along County Road and mixed use residential and business on the upland area above the Rumsford River, located along the CSX rail branch. An Issues and Opportunities illustration is included on the next page.

The Hatheway-Patterson redevelopment option was complicated by several factors. Access to the mixed-use residential portion above the river would proceed through the adjacent pre-existing neighborhood and depend on an extension of Howe Street, with potential adverse impacts on that community and their roadway infrastructure. Necessary environmental cleanup of the parcels and the local restriction on a 25-foot buffer around the wetland, and the state restriction on a 200-foot area around the stream would also present obstacles for successful development. Given these access and environmental issues, the Town broached the idea of transferring the development further south toward the train station. With the option of state funding support through the new TOD program, this alternative became even more viable.

For this next phase of the study, the concept was carried forward to determine the viability of a TOD program for development at the train station. Readers are advised to review the previous study for the in-depth analysis of the market, the land and the development options, and why the choice was made to focus on the train station area.

Project Viability

The TOD option is a "Smart Growth" development project that addresses the train station as a transportation node. A mix of uses in a compact system promotes both fiscal and environmental sustainability. These concepts are supported by the state's Smart Growth Principles, which is a key subject for many state funding and grant programs.

Bonz & Company's market study for the area gives viability to the mixed-use residential program. Findings indicate that there is a healthy local residential market in Mansfield, with strong absorption. Median sale prices have increased at a 15.7% annual rate from 1994 to 2004. The findings also show that small-scale retail could be supported with sufficient residential units. Note that recent sales information on housing has indicated that top end housing remains an opportunity and construction of middle-income housing has been very limited. The original market analysis is included in the Hatheway-Patterson study. The updated market analyses are included here in Appendix VII.

Alternatively, industrial development is less viable. There is over 800,000 square feet of industrial space in Mansfield and the vacancy rate of extant industrial space has increased by 18% from 2001 to 2004.

In addition to these market considerations, centering the development on the train station presents multiple community benefits. The TOD option provides the potential for consolidated, parking structures, which would fulfill commuter parking needs as well as destination parking for downtown. Structured parking opens land for additional mixed-use development.

This development could create an attractive, open-air retail, office, and housing neighborhood with jobs, services, and venues that enhance the Town. By transferring the development toward the train station, the Hatheway-Patterson property can be used as public open space. Massachusetts TOD funding could finance the parking and any bicycle and pedestrian improvements, up to \$2 million, provided the development meets the TOD criteria.

Private Development Proposals

Two of the parcels in this TOD effort are privately owned. The Cleveland Twist Drill parcel totals just over six acres spanning from Rte. 106/Chauncy Street, along Draper Avenue to Howe Street. A development plan for this and the adjacent property, advanced by Joseph Ditchman/Colliers International, proposes a large-scale mixed-use development. Designed by Waterfield Design Group, this proposal addresses the entire set of parcels, in addition to Ditchman's Cleveland Twist Drill land. The Ditchman plan includes 50,000 square feet of retail, 110,000 square feet of office, 1279-space parking garage, 365 units of housing, and 456 additional residential parking spaces.

The Clemmey/Foundry LLC site also advanced an independent development proposal by Bergmeyer Associates in the form of rezoning. Development ideas raised by Foundry LLC

have included an 85,000 square feet indoor recreational facility, office, multi-family housing, and a commuter parking garage.

Parking Analysis

A very important concept to the use of the land is the provision for parking for both the new development and the commuter rail parking. A separate parking analysis was completed by Walker Parking Consultants on the demand for commuter rail, the potential expansion for parking and the cost of construction and management of a parking structure. The concept was to take 800 to 900 of the existing surface spaces for parking, add additional spaces for Town and downtown parking needs, and place the spaces within a parking garage that would open up land for alternative development. The findings noted that a 1200-space parking garage would result in a total cost of approximately \$26,000,000, from which the projected revenues would not completely cover the costs of bonding the construction. (See Appendix VIII.)

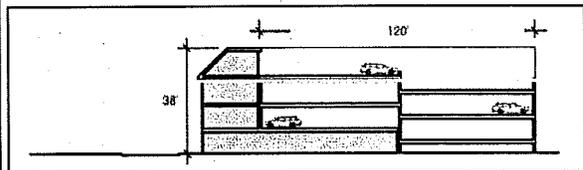
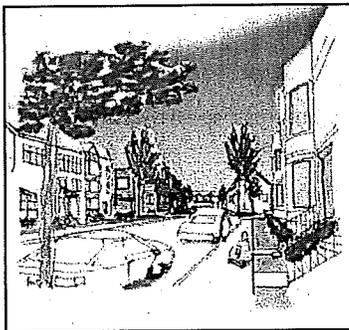
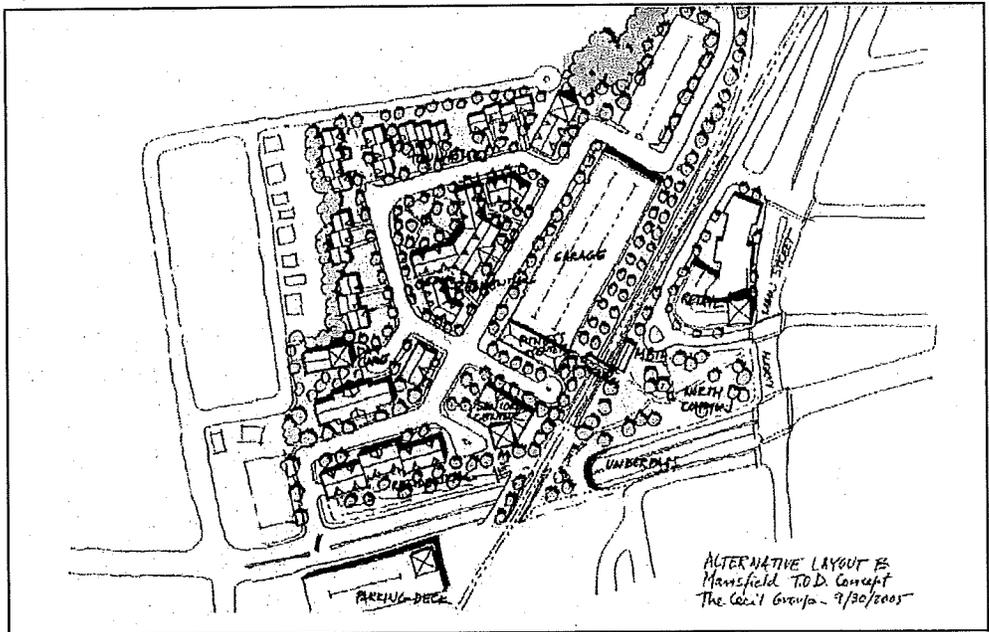
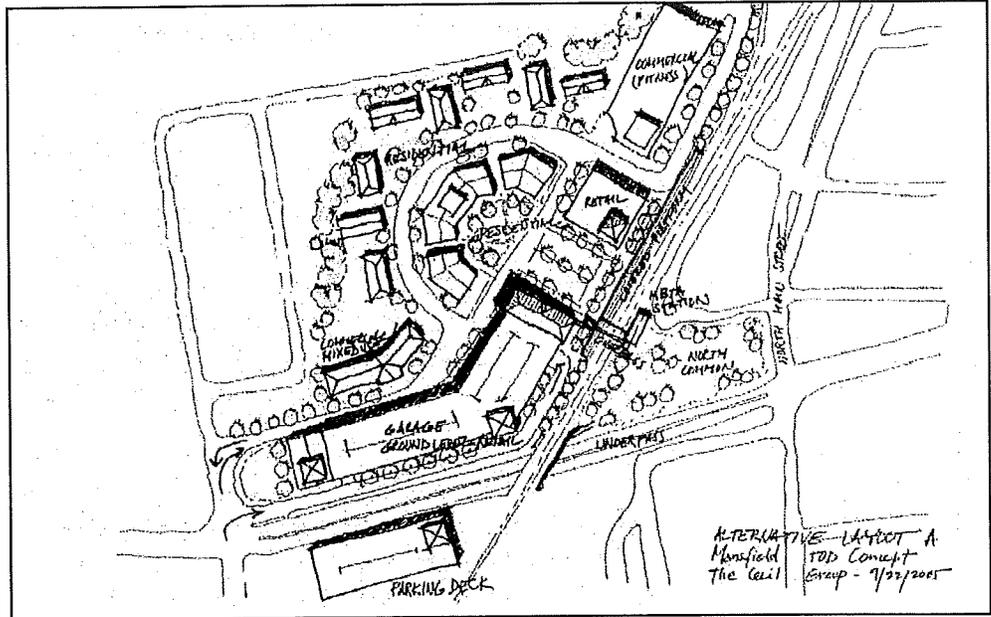
Listening and Other Public Sessions

Public input was very important in determining the correct considerations while developing a redevelopment concept. Some of the input and recommendations from the public are included in Appendix II.

There were two forms of public involvement. One was face-to-face interviews with people who were identified by others or self-identified as being interested and involved in the future of the site. These were termed "listening sessions" and took place at Town Hall or at the individual's place of work or home. The other form of interaction was the public working sessions, which were open meetings to obtain input, including one meeting that was a "hands on" physical planning exercise to elicit ideas through graphic imagery.

These meeting were found to be very successful in bringing forth a wide range of ideas and getting many more people aware and involved in the process than would normally have happened solely with only open public meetings.

Appendix I. Development Studies



Appendix II. Public Workshops and Listening Sessions

A. Listening Sessions

Listening Sessions were held on two dates, August 3 and 10, 2005, at the Mansfield Town Hall either one-on-one or small groups, with a few phone conferences. The sessions were organized to elicit information from various members and representatives of committees, boards, Town bodies relevant the TOD development; i.e. Planning Board, Board of Selectmen, Conservation Commission, Downtown Design Standards Committee, Industrial Development Commission, H-P Redevelopment Steering Committee, Zoning Board of Appeals, Housing Authority, Town Engineering, and several area small business owners. There were a total of 23 interviewed in 30-40 minute sessions.

Brief summary includes primary issues and opportunities that were addressed and envisioned in these sessions. An issue is an area of concern regarding a current or prospective condition in the Town that is, or would be related to the train station and any associated development. Opportunities are either solutions to current or anticipated issues or feasible ideas for desired uses and improvements.

ISSUES

Traffic and Transportation Network

- Traffic impacts must be mitigated
- Traffic is the main concern.
- Traffic is the number one issue.
- Traffic will increase with the development, regardless of good planning
- Development creates traffic.
- Traffic may increase substantially as a result of the development – problem for residential neighborhood.
- Traffic on School Street will back up into downtown as a result of the mall development.
- Bad traffic on Rt. 106
- Bad traffic on West Street due to the Eric Center corporate park.
- Too much truck traffic on Oakland Street.
- Traffic jams at intersection of Main, Oakland, and Pratt Streets.
- Commuter train creates traffic jam in the area for 15-20 minutes.
- Bad traffic at the Rte. 140 and Copeland Street intersection.
- Bad traffic at the Rte. 140 and Copeland St. intersection -- the worst.
- Bad traffic leaving the station.
- Bad traffic around the station at rush hour.
- Many people make an illegal left turn -- cars speed down residential street – poor police enforcement.
- Widening Rt. 106 would only increase car travel, impact area safety, and degrade the community.
- The walkway under the train bridge on Rt. 106 is poorly maintained. It is icy in the winter and not consistently safe for widespread access.

Access

- Road access is a huge issue.

- Poor access.
- Back access from the station is generally a good idea, but he is worried about safety and community integrity.
- Back of lot is impossible to exit.
- Make it easier to cross the train tracks out of the station.
- Police detail must be able to get out.

Parking

- No parking garage – only exacerbate traffic problems.
- The parking garage will not be used because it will only increase the commuting time given the search for a space.
- Not enough capacity at the parking lot – fills up very early.
- Parking at the station is fully filled very early.
- Satellite parking is inconvenient and underutilized.

Fiscal

- No families – kids would further stretch the school system.
- Residential development brings kids, which impact the school system.
- Impacts on schools and other Town resources.
- Business in downtown will not increase with more commuters.
- Maintain and protect businesses on North Main Street.
- Small businesses – where do they go?
- Do not draw people away from growing businesses, commercial uses should be complementary.
- Office not so viable.
- Funding for all the projects

Housing

- No 40B
- No 40B unless developer can be trusted
- No Depot type housing.
- 1-2 bedrooms are poor moneymakers.
- Currently a weak rental housing market
- Housing exacerbates traffic: 300 units of housing could result in the influx of 600 more cars.
- \$200,000 is too high to be considered affordable.

Community

- Neighborhood impacts
- Lack of activity for young people can cause social issues.
- Vandalism may continue to be a problem in the train station.
- Potential for lack of safety from inadequate visibility in the project area.
- Safety

Uses

- The development should not just be for commuters.
- A solely commuter project is too narrow-minded.
- No Big Box retail, quickie marts. Pizza, and hairdressers
- No gas stations.

Environment

- Must implement a 75' buffer between development and any existing rental uses, unless the development is itself residential.
- Wetlands regulations require specific setbacks.

Design

- No big ugly garage like at the Quincy Adams station.
- This is a high profile location for the Town and demands good design.

Open Space

- Not enough demand for open space near the train station.

OPPORTUNITIES

Traffic and Transportation Network

Traffic

- Expanding Rt. 106 might help.
- Widen Rt. 106 (would involve a lot of property takings), because the problem is the connection with Rt. 140.
- Improve Route 106.
- Consider three lanes at the western portion of Rte. 106.
- Double lane on Rte. 106 out to Rt. 140 and create a signalized intersection.
- Traffic mitigation and better access to services and transportation.
- Protected left turn from Main Street onto Rt. 106
- Create a left turn onto Main St from Rt 106
- Coordinate improvements with those for Rt. 106 (at the 25% design stage).
- Create a cross-over to downtown
- Make Main Street 2-way and eliminate on-street parking on the road segment that bumps out
- Create gateway from train station to the southwest, near the downtown
- Create bridges and pathways over the right-of-way and through to Main Street from train station.
- Create connections and ties to downtown
- Connect downtown to the train station.
- Enhance pedestrian and bicycle safety on adjacent roads.
- Need better pedestrian connections
- Bus is good idea.

Parking

- Parking garage is a reality.
- Parking garage would help downtown and a proper development
- Parking garage could be good for commuters and downtown destinations.
- Locate the parking garage just south of Rte. 106 in the town lot, to connect the station, Rte. 106 and downtown.
- Parking on the southern portions of the property would be helpful to downtown businesses.
- Parking is a low-cost option.
- Expand official parking.
- Curb illegal parking.
- More parking.
- Additional parking for locals
- Use the fire station for parking.
- Satellite parking with shuttles to the station must be cost-effective.
- Limit parking at the station to encourage satellite parking.
- Satellite parking would alleviate traffic pressure.
- Satellite parking with a commuter shuttle may be viable, if it is cost-effective, convenient, and easy.
- Install meters to prevent commuters from using downtown parking.
- Slightly increase parking fee?

Access

- Include back way access point to help Mansfield residents.
- Back access would be a good idea. Alleviate the traffic pressure.
- Provide vehicular access on west.
- Separate/secondary designated access for commuters.
- Establish multiple access points to improve access to the overall area.
- Improve access to Main Street

Housing

- Mansfield needs housing because it already has a big corporate park and retail center.
- Affordable housing for young and old residents.
- Stay on top of 40B compliance requirements.
- Affordable rental units can all be counted toward 40B quota.
- Housing attractive to commuters.
- Some housing would be good.
- Commuter apartments – 2-3 bedrooms.
- 1-2 bedroom rental housing with a needed affordable component
- 25% affordability requirement at 80% AMI is fine for an affordable housing criteria
- Build duplexes.
- Condos have worked well
- Residential development as an aspect of the project because it creates a market for businesses.

- Condos and townhouses would be good – be close to the train – people would use the train instead of the car.

Uses

- Allow mixed use.
- Mixed-use development that is related to the train station.
- Everyday uses and services a good idea.
- Commercial uses are most viable near the train station.
- Bakery, coffee shop, meals-on-the-go, dry cleaners, and other everyday shops and services.
- Daycare center, Video store, Cleaners, Food, or other small businesses related to daily life.
- Include day care, bakery, and special dell.
- Restaurant, day care, drycleaners, internet connection.
- Potential uses include Trader Joe's or Whole Foods, shops that are easy and quick, yet quality.
- Not so much destination uses, but instead convenient stops in commuter lifestyle.
- Village districts with little stores.
- More restaurants.
- Good sit-down restaurant.
- Get variance for parking uses underneath residential.
- Events such as balloon festival.
- Self-storage – Clemmey's idea.
- Golf would be a good use.

Design

- Want a good-looking development.
- Create aesthetics/design guidelines
- Need design guidelines to insure a quality development.
- Create an inviting and accessible destination space at the end of the corridor.
- Could be a jewel.
- Sizable landscaping with trees.
- Keep it simple and condensed.
- Open up the common, make the station more visible.
- Fix the underpass
- Universal Accessibility
- Smart Growth opportunity.
- Blend the garage into the surrounding buildings.
- Residential and pedestrian scale

Open Space and Recreation

- Bike path access and a footbridge.
- Improve North Common Green
- Include a corner playground, arcade, bocce ball court.
- Pedestrian way across the tracks.

- Create park and open space for the residential community near Howe Street and Highland Ave. Use the lower portion of the Hatheway-Patterson site.
- Create open space and activity areas.
- Try to find ways to extend bike path.
- Create active corridors with bikeways and play areas.
- Small open space – depending on level of cleanup.

Fiscal

- Build up the amount of small businesses for the Town.
- Golden Triangle will drain the downtown – need a magnet in Downtown Mansfield.
- Possibly use Chapter 90 funding to secure improvements to the west side of Rt. 106.
- Project has the potential to rejuvenate downtown.
- Use a TDR.

Community

- Maintain the safe, clean, good community environment.
- Promote safe housing – apartments and condos -- for young professionals.
- Controlled growth.
- Use the project to help pass the Community Preservation Act.

Environment

- Site cleanup operation in the north could be used to detain storm water.

Comments and Information

- Traffic peaks on Rt. 106 and Rt. 140 3 times per day: morning, noon, evening.
- TOD is a great idea
- TIF Committee wants Biotech, etc.
- Money and jobs are not important to Mansfield.
- The train station is much improved and looks good.
- Portsmouth and Salem made good design choices in their mall developments.
- The development is a great idea.
- Project examples: Market Common; Roslin Corridor, Virginia
- Think Mashpee Commons.
- Retail v. Downtown Golden Triangle
- Mansfield has become a regional train station because of its ease of access off the highway and because Taunton, Norton, Foxborough do not have stations.

B. Results of the January 30, 2006 Public Workshop

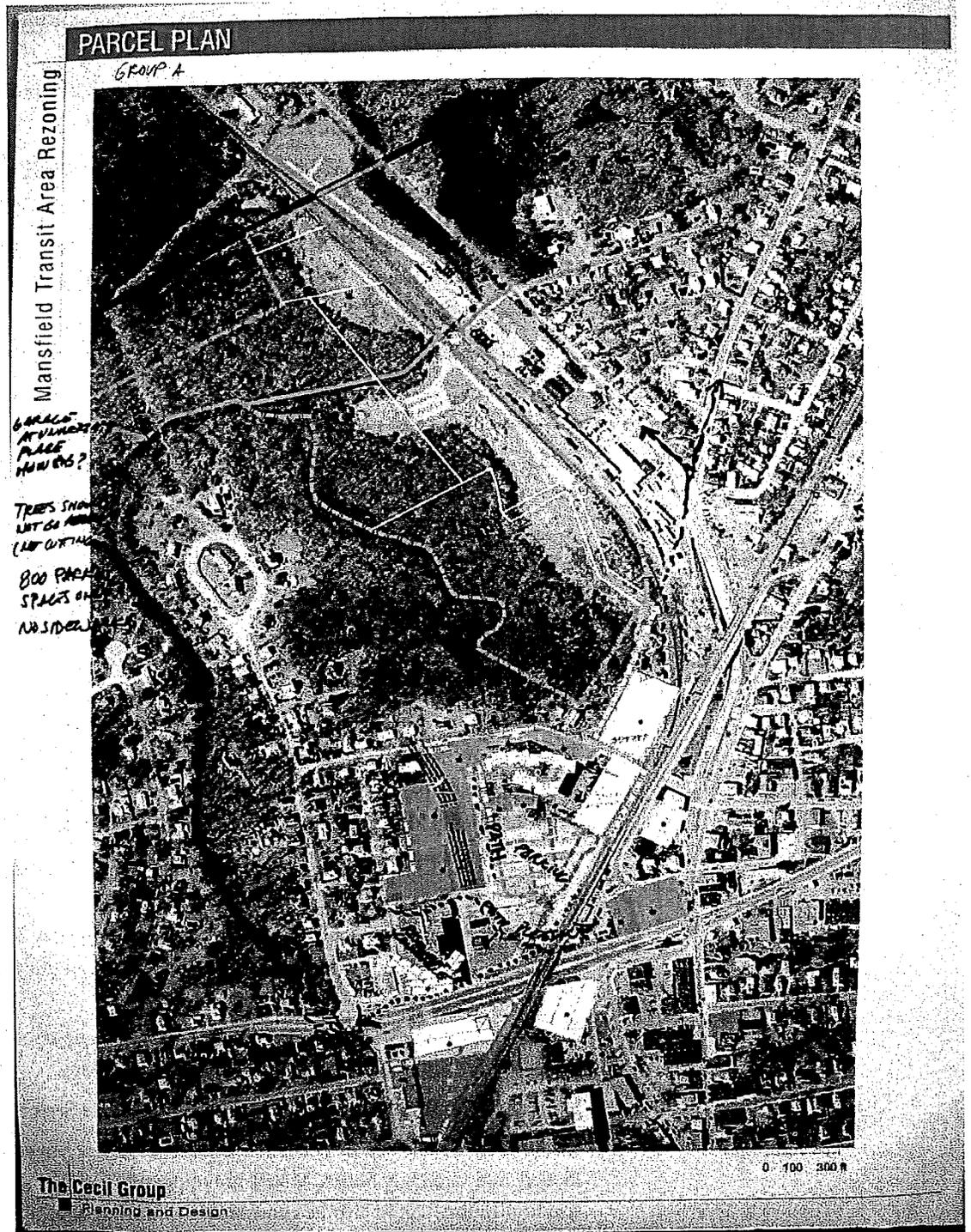
Approximately 30 residents, officials and members of the Mansfield's business community attended a public workshop to discuss, and brainstorm ideas for the redevelopment of parcels currently used for commuter parking in the vicinity of the Mansfield MBTA station. The meeting took place at Mansfield Town Hall on January 30, 2006.

In order to facilitate sharing and communication of ideas, meeting participants were distributed in three groups gathered around separate tables (identified as Group A, B or C). Each group had a similar agenda, which included a review of planning issues and needs with a special emphasis on access and traffic issues, and a visioning exercise. As a result, each group came up with a conceptual layout and land use diagram representing their shared vision for the future of the site.

The three groups reconvened together at the end of the meeting to share findings and opinions.

The results of the group discussions are summarized on the following pages.

Group A Concept Diagram



Group A

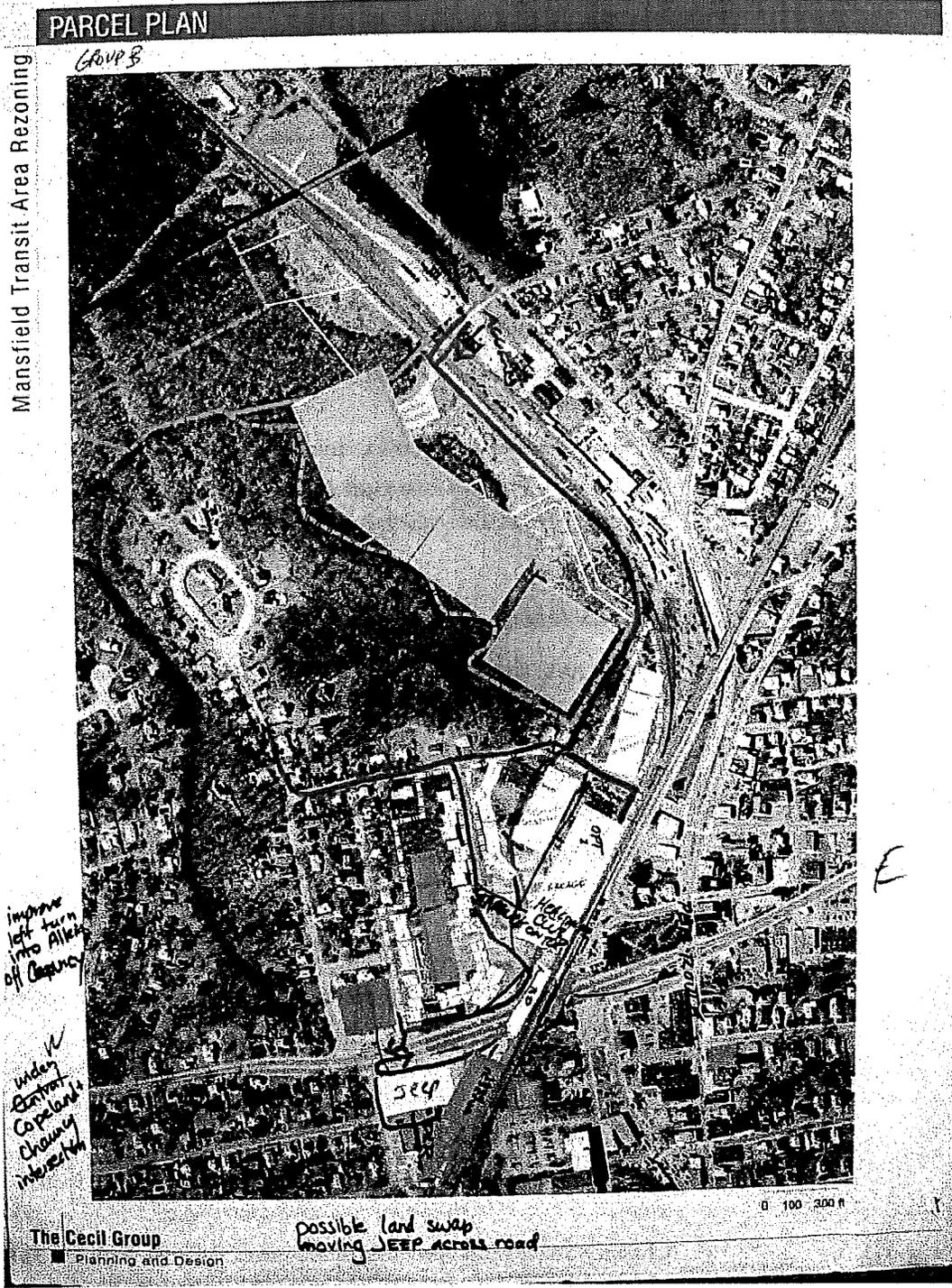
Key issues and needs:

- There should be a 50-foot buffer zone between the existing residential properties and future new development.
- New development in the site area should not exceed 215 residential units.
- Some commercial uses would be beneficial.
- Exit from the neighborhood via Highland Street is blocked whenever trains arrive in the afternoon.
- Chauncy Street cannot support more traffic. Widening the road may be a solution.
- Traffic exiting the parking area needs to be timed differently when trains arrive; need for a traffic signal that is programmed accordingly.
- The pedestrian underpass connecting both sides of the tracks needs to be made more inviting.
- Handicapped access needs to be tied to the bridge improvements.
- Car access into the [Highland Avenue] neighborhood should not be allowed from new development areas.
- A pedestrian right-of-way should be maintained through vegetated/landscaped buffer areas parallel to Draper Avenue from Howe Street to Chauncy Street and the train station.

Vision for the future:

- The existing ledge and vegetation between Draper Avenue and River Street should be preserved, and pathways allowing pedestrian movement between the train station and the Highland Avenue neighborhood should be retained.
- A vegetation buffer between the existing residential properties and new development should be provided, extending along Howe Street as well.
- There should be no large garage on the site, only parking at grade (not to exceed 800 cars).
- Smaller garages could be developed at peripheral locations, including the Hatheway Patterson site (north of Howe Street), and south of Chauncy Street on both sides of the tracks.
- A small garage north of Howe Street should have a secondary exit to North Main Street or County Street via the Hatheway Patterson site.
- Some townhouses could be developed south of Howe Street (approximately 24).
- Commercial uses could be located at the end of Howe Street, and at the corner of Draper and Chauncy Street. Mixed-use opportunities (such as apartments or condominiums) could also be considered at this location.
- There should be no cutting of mature trees.

Group B Concept Diagram



Group B

Key issues and needs:

- Pedestrian access from Highland Avenue to the train station needs to be preserved and enhanced (now a “grim” walk).
- A point of vehicular conflict currently exists at the intersection of Allen Street and Highland Avenue (should be resolved).
- Chauncy Street intersections, including Perkins Avenue, Central Street and Copeland Drive need to be improved.
- Traffic coming from Highland onto Chauncy Street splits almost evenly between east and west.
- Need more parking on the east side of the tracks.
- The existing Town lots along North Main Street are located too far to the south of the study area.
- How can we extend the retail district up along North Main Street?
- There is a pedestrian access route to the train station from North Main and Rumford Avenue along the rail overpass.

Vision for the future:

- A green space should be created between the existing Highland Avenue neighborhood and the new development.
- River Street would be a connector between Howe Street, Highland Avenue, and ultimately Chauncy Street. River Street would be double loaded with new residential uses including townhouses and apartments/condominiums.
- A new garage would replace the existing parking area along the tracks, separating residential areas from the rail line. Commercial/office buildings could be located alongside the garage.
- A new road overpass could be built parallel (or attached) to the rail bridge to provide direct exit from the garage to eastbound Chauncy Street through the Winthrop Street intersection.
- A possible land swap would relocate the Jeep dealership to the southern side of Chauncy Street, and allow converting the current Jeep parcel into a park/open space that would mark entrance to the neighborhood.
- Land would be reserved south of Chauncy Street and along the rail tracks and overpass for pedestrian connections and open space.
- Chauncy Street would be widened between Highland Avenue and Copeland Drive.
- The Hatheway Patterson site would become open space.

Group C

Key issues and needs:

- Highland Avenue, Draper Avenue and Howe Street should not be used for access to the train station.
- The redesign of the Highland Avenue/Chauncy Street intersection should include a major traffic light.
- The Hatheway Patterson site should be used as a secondary access road when trains arrive in the evening.

Vision for the future:

- A [large] parking garage over the rail tracks would solve the issue of providing access to and from both sides of the tracks. It could be an automated (robotic) garage, also including retail space at the ground level.
- The parking area currently located south of Chauncy Street would no longer be needed for parking and could be developed as a park.
- Up to 300 residential units could be provided on the development area, with a small retail component (not a retail destination).
- A larger building (possibly mixed use) could be developed on the portion of the site that enjoys best visibility from Chauncy Street.
- The Hatheway Patterson site could be used as open space. A driving range could represent a good option for reuse of the site.
- Commercial uses (offices) could provide the transition between the station redevelopment area and the Hatheway Patterson site.
- Desirable commercial uses would include a day care center, coffee sandwich shops, dry cleaners and a bakery.
- Bright lighting would contribute to enhance pedestrian areas.

Appendix III. Zoning Recommendations

Outline of Zoning Proposal

Basic Elements:

- Allowed uses are mix of residential and commercial
- Approved master plan for development required
- Residential densities set at a maximum
- Developer agreements required
- Public amenities required

Basic Design Standards:

- Building forms defined
- Streets designed for proposed use
- Pedestrian amenities added
- Environmental features protected
- Usable/active open space provided
- Density added based on master plan

Performance Standards:

- Total number of allowed vehicle trips defined with penalties and incentives
- Density and use based on quality of design
- Dimensional relief based on quality of design

Suggested Standards:

- Minimum 15 acres of area
- Master plan and agreements needed
- Land use distribution:
 - 90% residential
 - 10% civic and commercial
 - Usable open space in and adjacent to site
 - Phase I – Surface Parking for 550 cars
 - Phase II - Separate garage for 1,200 cars
- Total of 200 residential units with potential of 80 more based on master plan approval
- Total of 3 acres of land set aside for parking garage
- Public amenities and pedestrian access

Bylaw Procedures:

- Special Permit Overlay that only applies to the area bounded south and west of the railroad tracks
- Two phase review; Master Plan and Site Plan
- Standards for review cover basic special permit findings, TOD standards, design guidelines and connection of project to infrastructure improvements
- Design Guidelines created separately from bylaw as regulations and applied by SPGA

B. Resources

Additional information and ideas in the form of model bylaws for Transit Oriented Development and Traditional Neighborhood Development are provided at:

http://www.mass.gov/envir/smart_growth_toolkit/bylaws/TOD-Bylaw.pdf

http://www.mass.gov/envir/smart_growth_toolkit/bylaws/TND-Bylaw.pdf

C. Proposed List of Nonresidential/Commercial Uses

1. Accessory use on the same lot with and customarily incidental to any permitted uses (including clubhouses and recreational amenities for the residential community).
2. Antique shop.
3. Any use of the same general character as any of the uses herein listed.
4. Bakery, confectionery or doughnut shop.
5. Bank or other financial institution, excluding drive-thru windows.
6. Loan agencies.
7. Barber or beauty shop.
8. Book stationary.
9. Bookstore.
10. Café.
11. Candy store.
12. Commercial recreation (under 1,500 square feet).
13. Community facility.
14. Computer trade/repairs (under 1,500 square feet).
15. Convenience or liquor store.
16. Copy centers and job printing operating on a retail sales level.
17. Dancing academy.
18. Day care center.
19. Deli/sandwich shop.
20. Dental services.
21. Drugstore.
22. Electronics/communications (under 1,500 square feet).
23. Flower shop.
24. Framing, pictures.
25. Gift shop.
26. Grocery store (under 35,000 square feet).
27. Health club.

28. Hobby/Toy/Games store.
29. Ice cream parlor.
30. Indoor recreational facilities such as roller-skating, skate board park, indoor playgrounds.
31. Jewelry store.
32. Laundry, dry cleaning establishment operating on a retail sales level.
33. Martial arts school, gymnastics.
34. Medical office.
35. Municipal office/services.
36. Public parking structure.
37. Music/performance school.
38. Newspaper/magazine stand.
39. Nursery school or similar nonresidential use for more than six (6) children.
40. Office, administrative, business professional.
41. Office, design professional.
42. Office, headquarters.
43. Office, medical.
44. Outpatient medical building.
45. Package store (under 1,500 square feet).
46. Personal clothing, accessories store.
47. Pet shop/supplies.
48. Professional business (lawyer, accountant, insurance agency).
49. Pushcart sales.
50. Real estate sales office.
51. Record/tape/CDs.
52. Restaurants (excluding drive-thru windows).
53. Retail store (under 25,000 square feet).
54. Sewing/craft store.
55. Shoe store/repair.
56. Sporting goods business.
57. Specialty retail store.
58. Tailor or dressmaking shop.
59. Video and sound equipment (under 1,500 square feet).
60. Video store.

Appendix IV. Chapter 40R: Example of Implementation from Plymouth

Design Guidelines: Examples

The Cecil Group assembled the following list of design guidelines as interesting examples that fulfill different purposes. One of the key points emphasized by this list is that “design guidelines” is a general term used for a wide variety of tools that, in fact, are highly varied in terms of their purposes. In creating and using design guidelines, the purposes to which they are put must be clearly understood. Once the purposes of guidelines have been well defined, then the components can be appropriately assembled.

We have provided some observations about each of these guidelines for your information. Copies of all of these are available, however following is the example from Plymouth Cordage Park that shows a range of ideas that are relevant to the Mansfield TOD project.

Façade and Building Improvement Reviews

- Draft Ayer Center Design Guidelines – Prepared by The Cecil Group, these guidelines were created as a resource to be used by the Town in crafting a program of façade improvements. They were deliberately created in a flexible format to invite review and revision by those who will become involved in implementing the guidelines over time.
- Beverly Farms Master Plan: Façade Recommendations (excerpts) – Simple recommendations were prepared on a building-by-building basis as a resource for an advocacy committee from a civic-oriented non-profit organization (The Beverly Farms Improvement Society). The suggestions were used in a simple grant and advocacy effort that has resulted in dramatic improvements in their town center.

Historic Districts Guidelines

- Boston’s Beacon Hill District Standards - Beacon Hill has a reputation as one of the most constrained – and simultaneously successful – examples of historic district preservation through design review. These standards are those used to guide decisions.
- Hingham’s Historic District Guidelines – This is an example of a very extensive and informative approach to guiding design; it is well-tailored to the special architecture and heritage of its community, and is unusual because of its length, detail and complexity.
- Freeport Maine Design Review Ordinance – Freeport has significantly channeled design decisions in its central areas; this ordinance is an interesting insight into how design controls have been implemented in a location that is well known by many visitors.

Urban Renewal Plan/Municipal Zoning

- Charlestown Navy Yard Guidelines - Boston has guided development through several special mechanisms, including the role of the Boston Redevelopment Authority. The purposes and relationships of guidelines and other design review tools is sometimes included directly into zoning standards, as shown in this example.

Assembly Square in Somerville: From Planning to Zoning

This series of guidelines traces common threads among linked mechanisms that are applied to a special target district, including the complex public purposes and design requirements that were tailored to Assembly Square's redevelopment. The first guidelines were part of a general master plan. The detailed guidelines applied and expanded these principles through zoning mechanisms.

- [Master Plan Guidelines for New Development](#)
- [Zoning Guidelines \(Special Permit\)](#)
- [Zoning Guidelines \(Planned Unit Development Standards\)](#)

Performance Standards: New Methods to Guide Development

- [Aquidneck Island West Side Master Plan: Appendix on Performance Standards](#) – This is an excellent survey and discussion of the potential use of performance standards as an approach to achieving high quality planning and design at a municipal level. The menu of ideas was prepared by The Cecil Group for a regional planning commission in Rhode Island, but has broad applicability in Massachusetts.

Signage Guidelines and Standards

- [Freeport, Maine Signage Ordinance](#) – For all of those that have passed through Freeport and wondered at the discipline and design quality of a commercialized town center, this ordinance holds some clues as to how it is achieved.

Design Guidelines in Subdivision Standards

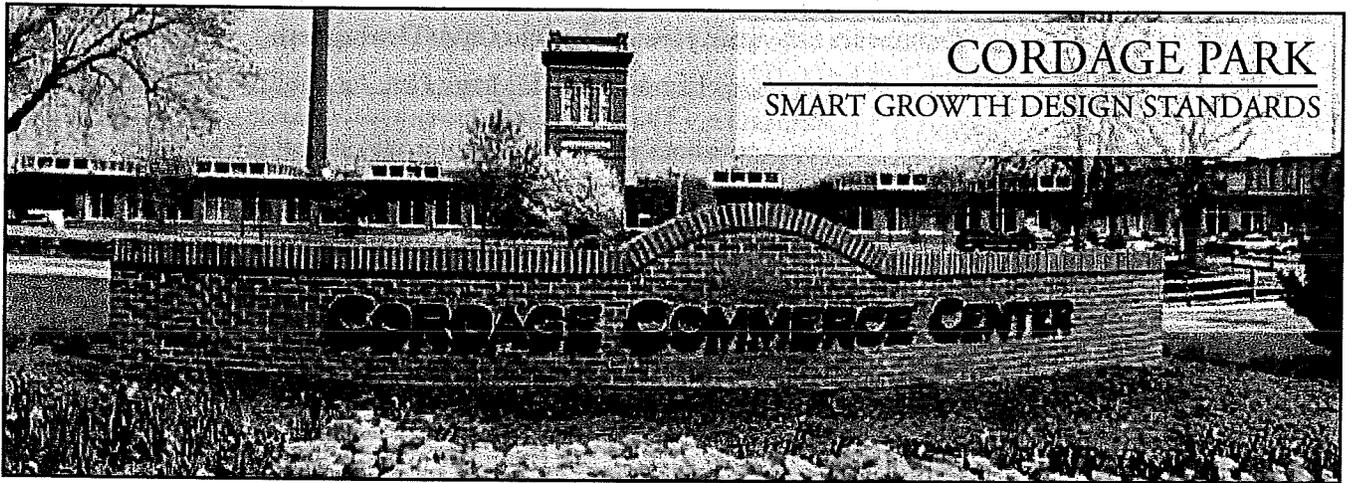
- [Town of Franklin Subdivision Guidelines](#) – Some communities use subdivision or site plan approvals as a venue for influencing design through guidelines, such as this useful set from the Town of Franklin.

Guidelines Associated with Public Actions

- [Guidelines from the Old Salem Jail Developer Request for Proposals, Salem Redevelopment Authority](#) – When certain public actions or participation in development occurs, there is an opportunity to directly require conformance with design guidelines. These guidelines were prepared by The Cecil Group to provide for desired outcomes in the disposition and redevelopment of former City property.

Massachusetts Smart Growth Zoning and Guidelines

- [Plymouth Chapter 40R Smart Growth Zone Design Standards](#) – In crafting new mechanisms to encourage Smart Growth, cities and towns are empowered to provide enforceable design standards associated with new zoning categories. This document is the recently adopted product of the Town of Plymouth that will set approval standards for redevelopment of the old cordage factory property.
- [Massachusetts Smart Growth Legislation and Regulations \(excerpt\)](#) – This document provides insights into how the new state Smart Growth initiative is related to design guidelines at a local level.



The Town of Plymouth

Concord Square Development Company, Inc.

and

The Cecil Group

May, 2006

REVISIONS: May 9, 2006

The Cordage Park Smart Growth District, Sec. 205-74 of the Zoning Bylaw of the Town of Plymouth (the "District Bylaw"), is an overlay zoning district adopted pursuant to M.G.L. c.40R Smart Growth Zoning and accompanying Regulations at 760 CMR 59.00. The District Bylaw allows both existing uses of office and retail, new commercial and waterfront related uses, and residential development in several forms including mixed-use and multi-family buildings. The District Bylaw encourages a mix of uses with architectural and site design features consistent with the District Bylaw and these Design Standards. The Cordage Park Smart Growth District (the "District") shall be deemed to overlay the parcels as shown on the Zoning Map of the Town of Plymouth, as amended.

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1 | PURPOSE

These Design Standards supplement the District Bylaw, and include both binding Standards for Compliance and non-binding Guiding Principles as more fully described herein. The Standards for Compliance shall be used by the Planning Board of the Town of Plymouth (the “Planning Board”) in their review and consideration of Development Projects proposed pursuant to the District Bylaw. These Design Standards shall be in effect upon adoption by a majority of the Planning Board and approval of the Department of Housing and Community Development (“Department”). These Design Standards may be amended from time to time by a two-thirds majority vote of the Planning Board, said amendments to be in effect upon approval of the Department. A Development Project shall be approved by the Planning Board upon a finding that it complies with the District Bylaw and the Standards for Compliance included in these Design Standards. In the case of contradiction between the District Bylaw and these Design Standards, the District Bylaw shall govern. In the case of contradiction between applicable state or federal laws, including, without limitation, state building codes or life safety codes, and these Design Standards, the applicable state and federal laws, rules and regulations shall govern. It is the intent of the Planning Board that these Design Standards be considered by the Commonwealth of Massachusetts and others as a statement of the Town of Plymouth’s public policy objectives for Development Projects within the District.

2 | APPLICABILITY

The Standards for Compliance contained herein shall apply to Development Projects within the District that are subject to Site Plan Review under the District Bylaw. The Applicant shall comply with the Standards for Compliance contained herein, unless and exemption from the Standards for Compliance is specifically authorized by the Planning Board.

Definitions of technical or other capitalized terms used in this document can be found in § 205-74(C) of the District Bylaw, as supplemented by additional definitions as follows.

ALLEY – A type of traveled way found in densely populated areas. Alleys usually run between or behind buildings to allow for delivery and collection. Alleys may provide access to private garages for the use of adjacent dwelling units, and may provide parking or access for fire engines.

BOULEVARD – The primary traveled way serving the District, designed with shade trees, sidewalks, lighting and a central landscaped median as provided herein. The boulevard may, but need not be, located within a right-of-way created pursuant to M.G.L. c.41 governing subdivision control.

BUILDING FORMS – Graphical depictions of dimensional requirements such as height, setbacks and façade differentiation applicable to specific building types.

DESIGN STANDARDS – Regulations adopted pursuant to § 205-74(J) of the District Bylaw and approved by the Department pursuant to M.G.L. c.40R, § 10 and applicable regulations. Design Standards are applicable to all Development Projects within the District that are subject to Site Plan Review by the Planning Board under the District Bylaw.

DISTRICT MASTER PLAN – An optional plan that may be submitted by an Applicant within a pre-application review that includes the location and size of traveled ways, pedestrian and bicycle circulation network, proposed project mitigation and phasing, and public spaces.

DRIVEWAY – A traveled way, located on a lot, which is built for access to a garage or off-street parking or loading space.

FOCAL POINT – A site design element that may include a prominent architectural or natural feature that is situated or designed to be visible from more than one public space within the District.

HEIGHT – The vertical distance from the average finished grade of the adjacent ground to the top of the structure of the highest roof beams of a flat roof, or the mean level of the highest gable or slope of a hip, pitch or sloped roof.

LOT – An area or parcel of land designated by its owner or owners as a separate lot on an endorsed plan recorded with the Plymouth County Registry of Deeds or filed with the Plymouth County Registry District of the Land Court.

PUBLIC SPACE – An area of land such as a square, green, neighborhood park, pocket park, and linear pedestrian park which is located and designed for public access by pedestrians and/or bicyclists for passive or active recreation.

SETBACK – The minimum horizontal distance between the lot line, property line or edge of the boulevard and the nearest front, side, or rear line of the building (as

the case may be), including terraces or any covered projection thereof, excluding balconies, stoops or steps.

STREET – A traveled way located within a right-of-way shown on a plan approved and endorsed in accordance with the “Subdivision Rules and Regulations of the Town of Plymouth”, and the Subdivision Control Law, M.G.L. c.41, Sec. 81K to 81GG.

TRAVELED WAY – A portion of a roadway intended for the movement of vehicles, inclusive of bicycle lanes, sidewalks and shoulders.

ZERO LOT LINE – The location of a building on a lot in such a manner that one or more of the building’s sides rests directly on a lot line.

The Planning Board shall review applications for Development Projects within the District for compliance with the District Bylaw and the Standards of Compliance contained herein in accordance with the procedures set forth in the District Bylaw.

(A) Pre-Application Review

(I) The District Bylaw encourages a pre-application Planning Board review of Development Projects proposed within the District. The goals of the pre-application review are as follows:

- (a) Establish fixed elements and development constraints within the District to guide subsequent site planning.
- (b) Pursue agreement between the Applicant and the Planning Board on the goals for public spaces, focal points, walkways and views that will maximize both public access to the waterfront and development opportunities within the District.
- (c) Enable the Applicant to take into account fixed elements, location and size of public spaces and focal points, walkways and views while proceeding with site planning and engineering for consideration within Site Plan Review.

(II) If a pre-application review is requested by the Applicant, the Applicant may file the following with the Planning Board during the pre-application review:

- (a) A project statement that outlines the Applicant's vision for the Development Project. The vision should suggest the type of community the Applicant hopes to create and how the Applicant's vision is consistent with the District Bylaw and these Design Standards.
- (b) A fixed element plan depicting fixed elements such as Court Street, property lines, waters bodies, abutting public uses and existing uses to remain.
- (c) A development constraints plan depicting wetlands, water bodies, setbacks and buffer zones from wetlands and waterways, rights-of-way, easements and the MBTA commuter rail station and associated access and/or parking easements.
- (d) A circulation plan including major traveled ways, sidewalks and walking paths, bicycle paths, emergency access routes, and public spaces.
- (e) A development analysis plan depicting the size and location of post-development public and private areas and how public and private uses within the project will interact with one another, and site drainage facilities.
- (f) Development information including cross sections of the District depicting building locations, massing, vehicular access and public spaces.

The Applicant may submit one plan containing the information referenced in subsections (b) – (f) above. The Planning Board will present comments during this informal pre-application review process. Based on comments received on the plan, the Applicant may prepare a District Master Plan for submittal within the application for Site Plan Review.

(B) District Master Plan

- (I) The submission of a District Master Plan is purely voluntary and at the election of the Applicant.
- (II) A District Master Plan may be filed for the District as a whole or a portion of the District.
- (III) A District Master Plan should include the location and scale of traveled ways, pedestrian and bicycle circulation network, and public spaces.
- (IV) If approved by the Planning Board, subsequent applications for Site Plan Approval within the District will be reviewed for compliance with the approved Master Plan.
- (V) The Planning Board cannot issue a Site Plan Approval that necessitates a change in an approved District Master Plan unless the Applicant consents to such change, in which case said approved District Master Plan shall be deemed amended to reflect the changes included in the Site Plan Approval.

(C) Minor Engineering Changes

The Planning Board, where it is not otherwise conflict with the District Bylaw and these Design Standards, may approve minor engineering changes to a Site Plan Approval. Requests for approval of minor engineering changes shall be submitted on forms provided by the Planning Board. Such written request shall be accompanied by redlined plans indicating proposed changes and a statement supporting the basis for granting a minor engineering change. A filing fee may be required with applications for approval of Minor Engineering Changes.

Minor Engineering Changes may be approved for such changes including, but not limited to:

- (i) The total number of parking spaces.
- (ii) Parking space sizes and alignment.
- (iii) Drainage (surface/stormwater).

- (iv) Curb opening dimensions and locations.
- (v) Removal of underground storage tanks and other underground utilities.
- (vi) Changes in site/building elevations, and topographic changes on portions of the site.
- (vii) Changes in walkways and handicapped access ways.
- (viii) Changes in the type of screening/rubbish collection areas.

(D) Insignificant Changes

The Planning Board, acting through its Chairman and professional staff, may approve changes to a Site Plan Approval, which are considered to be of an insignificant nature. Requests for the approval of insignificant changes to a Site Plan Approval shall be submitted on forms provided by the Planning Board. Such written request shall be accompanied by redlined plans indicating the proposed changes and a statement supporting the basis for approving such insignificant changes to a Site Plan Approval. A filing fee may be required with applications for approval of insignificant changes.

Insignificant changes may include, but are not limited to:

- (i) Changes in Building Footprint which will not increase the gross floor area of the building or buildings within the approved Site Plan.
- (ii) Changes in exterior doorways, the location or placement of doorways, entrances and windows, and the design of a building facade which otherwise conforms to the District By-Law.
- (iii) Minor adjustments to the alignment of parking spaces necessitated by on-site conditions when such realignment would not increase the number or size of spaces or affect vehicular or pedestrian circulation.
- (iv) Changes in exterior stairways and loading docks which constitute a reduction in size of these building details.

The Planning Board Chairman or the Director of Planning on behalf of the Chairman, upon consultation with professional Town staff, if needed, will issue a written decision to the Applicant whether such request properly constitutes "Insignificant Changes to an approved Site Plan" or constitutes a "Minor Engineering Change" which requires further review by the Planning Board.

These Design Standards are based on site planning and design principles that articulate public interests in the physical design and aesthetic qualities associated with the land and its development. The following recommended provisions should be considered by the Applicant in designing the overall composition of the site, building improvements and the infrastructure of traveled ways and walkways that connect them. These Guiding Principles are goals, and shall not be applied as specific regulatory standards.

(A) Site planning principles.

(I) Promote mix of uses. Cordage Park is a central element of the Town of Plymouth's industrial heritage. Manufacturing and industrial production is not likely to return to Cordage Park, but this location will remain significant to the cultural, economic and residential character of the Town of Plymouth in the future. The District may become a destination for educational, cultural or recreational institutions serving a local or regional population base, and the overall site design within the District should allow for such non-residential development and investment as may be economically viable and culturally beneficial.

(II) Relationship to the Court Street context. Those portions of a Development Project that are adjacent to or prominently visible from Court Street should exhibit similar characteristics to the varied scale, open space and architecture found along the street that leads to and from the District. The Development Project should provide for (a) a variety of building massing and roof shapes, (b) proportional landscaping and (c) building facades and entrances that are oriented towards traveled ways, public spaces and sidewalks.

(III) Entrance and boulevard. The principal means of public access to the District's publicly accessible uses and its waterfront should be the boulevard. The entrance and the boulevard should be composed of traveled ways and sidewalks lined with buildings and distinct public spaces framed with buildings and offering views. The boulevard should begin with a gateway of buildings or open space that clearly defines the entrance to the District from Court Street. The sequence should be interesting and varied and end with a combination of active water-related uses, public space and publicly-accessible uses at the water's edge. The passageway along the boulevard may include uses, buildings and public spaces that vary in scale and character, but which are consistently oriented and designed to encourage movement and activity.

(IV) Public access to and along the waterfront. The public should be provided an inviting, clear and well-lit path along the entire water's edge within the District, including marked connections to adjacent public ways or access easements. A variety of amenities and levels of activity should be provided, with the most active and publicly-accessible uses located where the boulevard intersects with the waterfront. Other public areas should be more passive in character, providing

places to sit, walk, bicycle or participate in water-related activities.

- (V) **Activation of the site and the waterfront.** Setbacks and landscaping buffers should be maintained along the waterfront to ensure that buildings and private open space do not significantly inhibit or discourage public access and enjoyment of public movement along the water's edge. Where publicly-accessible uses are located along the waterfront, they should be designed to provide an interesting and inviting appearance. New buildings along the waterfront should be spaced to provide a varied and non-repetitive edge along the waterfront, and include periodic pedestrian connections linking landward uses and the water's edge.
- (VI) **Relationship to abutting areas.** Landscaped buffers from abutting areas to the north and south of the District should be provided.
- (VII) **Building height relationships.** Heights of buildings within the Court Street First Sub-District should be scaled in proportion to the existing character of the North Plymouth Village Center. Waterfront buildings in the Coastal and the Coastal Renovation Sub-Districts should be consistent with the larger-scaled buildings associated with the site's industrial past. Building heights in the Court Street Second Sub-District should provide a transition between the taller buildings on the waterfront and the village-scale buildings on Court Street.
- (VIII) **Public views.** The public views from Court Street into the District should provide for continued views of the historic features of any of the mill buildings that are restored. Views towards the water should be provided at several locations along the sidewalks and open spaces along the boulevard. Upon arrival at the waterfront, public views should become more expansive and include open spaces that lead to the water-edge pathways and water-dependent uses.
- (IX) **Parking and service areas.** To the greatest extent practical, large parking areas and service areas should be landscaped to conceal or diminish their visibility from Court Street, the boulevard, and the public accessway along the water's edge.
- (X) **Hierarchies among site elements.** The site design should create identifiable and practical hierarchies among site elements. The traveled way and sidewalk designs should distinguish among those intended for principal public access and use, and those that provide for internal circulation or service requirements. Public spaces should range in scale and character, adapted to the active or passive use for which they are intended. Building elements should allow recognition of those uses, entrances and areas that are intended to invite and engage the public.
- (XI) **Relationship between the MBTA facilities, site and development.** The site design should be adaptable to accommodate the potential relocation of the Massachusetts Bay Transportation Authority facilities to reduce the grade-crossings for pedestrian and vehicular traffic.

(B) Design principles.

- (I) Architectural relationship to historic industrial context.** The existing buildings in the District at the time of adoption of the District Bylaw provide suitable architecture and may be retained to the extent that renovation and reuse is determined to be feasible for market conditions. However, no existing building is considered necessary for retention except as necessary to comply with § 205-74(G) and § 205-74(H) of the District Bylaw. The renovation of existing buildings should retain recognizable features that distinguish the architectural styles and character of the industrial heritage of the site, while providing compatible and contemporary improvements associated with the adaptive reuse of these structures. New structures that are situated near the Court Street context should express forms and styles drawn from the variety that exists along this corridor. New structures situated nearer the waterfront may express the industrial architectural heritage of the site, or may pursue a modern, urban waterfront architectural style that differs from the historic mill architectural style while referencing the District's industrial history through building materials and details. However, new structures should avoid mimicking or replicating specific historic features.
- (II) Landscape design character.** Unifying themes and consistent design elements should distinguish the boulevard and the public access provided along the waterfront. However, a variety of landscape qualities and characters may be employed to reflect the hierarchy of site elements and uses within the District.
- (III) Architecture and activation of public places.** The architecture of publicly-accessible uses should be provided for a high degree of transparency along the ground level from sidewalks and traveled ways, and provide variety and interest to encourage activation of principal public places along the boulevard, its intersection with the waterfront, and along other areas intended for public use.

(A) General standards applicable to all Development Projects.

(I) Design objectives. All development permitted pursuant to the District Bylaw shall be consistent with the design objectives of the Plymouth Master Plan, the North Plymouth Master Plan and the Plymouth Housing Plan, as they may be amended from time to time.

(II) Preservation of historic features. The development within the District will require the removal and renovation of the existing industrial buildings as well as new construction. To the extent practical, the renovation of existing buildings and the design and construction of new buildings, will incorporate architectural elements that are consistent with the historic mill and warehouse features of Cordage Park, including the site's rope-making history. Although it is anticipated that a portion of the existing structures will be removed, all reasonable efforts shall be taken to protect, or, when and where necessary, restore, the smokestack to retain it as a prominent feature on the Plymouth waterfront.

(III) Protection of significant site features. Roadways and lots shall be designed and located in such a manner as to maintain and preserve, to the maximum extent practical, existing tree cover, water and wetlands, natural topography and significant natural and cultural resources, to minimize cut and fill, and to preserve and enhance views to and from the site, the housing units, and the waterfront. Significant site features include the pond, wetlands subject to the jurisdiction of the Plymouth Conservation Commission, active recreation opportunities on the Plymouth Harbor waterfront, and the pedestrian bridge and gazebo adjacent to the Cordage Commerce Center.

(IV) Protection of public safety. Buildings shall be designed and located so as not to endanger its occupants or the public. Site design shall include adequate water supply distribution and storage for fire protection. Vehicular circulation shall meet the access needs of emergency and public safety vehicles. The adequacy of the foregoing public safety measures shall be based on the reasonable requirements of the Plymouth Chief of Police and Fire Chief, in their respective fields.

(V) Prevention of light pollution. Outdoor lighting shall be designed to ensure proper illumination of the transportation network and public spaces. It is intended that development permitted within the District shall not unreasonably interfere with the use and enjoyment of property within the District and surrounding areas and with astronomical observations. Development within the District shall employ outdoor illuminating devices, lighting practices, and systems which will minimize light pollution and conserve energy while maintaining reasonable nighttime safety and security. All outdoor lighting in the District shall comply with the following provisions:

(a) **Shielding.** Direct light emitted by an outdoor light fixture shall not emit directly by a lamp, off a reflector or through a refractor above a horizontal plane through the fixture's lowest light-emitting part.

(b) **Prohibited light sources.**

(i) **Mercury vapor and quartz lamps.** For the purposes of these Design Standards, quartz lamps shall not be considered an incandescent light source.

(ii) **Laser source light.** The use of laser source light or any similar high-intensity light for outdoor advertising, when projected above the horizontal, is prohibited.

(iii) **Searchlights.** The operation of searchlights for advertising purposes is prohibited.

(c) **Metal halide lighting.** All outdoor light fixtures utilizing a metal halide lamp or lamps shall be shielded and filtered. Filtering using quartz glass does not meet this requirement.

(d) **Exemptions.**

(i) **Fossil fuel light.** All outdoor light fixtures producing light directly by the combustion of natural gas or other fossil fuels are exempt from all requirements of this bylaw.

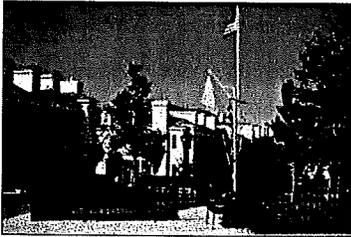
(ii) **Other light sources.** All outdoor light fixtures using an incandescent lamp or lamps of 150 watts or less are exempt from all requirements of this bylaw. All outdoor light fixtures using any lamp or lamps of 50 total watts or less are exempt from all requirements of these Design Standards.

(iii) **Specialty lights.** Alternative outdoor light fixtures may be allowed if it is found that the fixture's design and appearance are superior, significant light pollution will not be created, and glare is minimal.

(B) **Public spaces.**

(I) **General.** The Planning Board may require, as a condition of Site Plan Approval, the provision of one public green and one waterview park for the District as a whole, and one pocket park or neighborhood green for each multi-family building with four or more units as further detailed in these Design Standards. The Board may include in its conditions specific requirements for phasing of the construction of required public spaces with the construction of approved Development Projects, but shall allow the Applicant to post surety to secure the satisfactory completion of said public spaces.

- (a) **Landscaping.** In all types of public space, landscaping will be used as necessary. Plantings should be chosen to withstand weathering and public use, with particular attention to durability and ability to withstand salt air and coastal weather.
- (b) **Walkways.** All public spaces shall be laid out and equipped with sidewalks, crosswalks and curb cuts to ensure that they are easily accessible to pedestrians. Public access shall be available from two or more sides of each open space. Public spaces shall be accessible to the handicapped in accordance with the Americans with Disabilities Act.
- (c) **Maintenance.** Landscaped areas shall be reasonably maintained as to pruning, trimming, and watering as necessary to create an attractive appearance for the development.
- (d) **Utilities.** Utility lines installed across or within all public spaces shall be underground.
- (e) **Light Fixtures.** The light center of fixtures serving public spaces shall be mounted at a maximum height of 15 feet above grade.
- (f) **Furniture.** Public spaces shall include trash receptacles and other furniture and small structures to increase the options for use and enjoyment of the spaces.



(II) Public green.

- (a) The District shall include a Public Green, a minimum of 20,000 square feet in area, oriented to and providing direct pedestrian access to the waterfront.
- (b) The Public Green shall be formally landscaped with a variety of ground coverings, flowers, plants, shrubs, and trees; and shall incorporate “hard” elements such as fencing, gazebo, seating areas, and decorative paving.
- (c) The Public Green shall create a vista along the boulevard within the District and shall to the maximum extent practical provide views from the site entrance to the Plymouth Harbor waterfront.
- (d) The Public Green should be proximate to a mix of complementary ground floor uses such as restaurants and cafes with outdoor seating and other businesses that operate in both daytime and evening hours to create a festive, welcoming, well populated attraction for pedestrians. Where practical, buildings and uses may front on the public green insofar as they do not infringe on the minimum required area designated as public space.
- (e) **Hours of operation and limitations on accessibility.** The Public Green shall

be open to the public between the hours of dawn and dusk, except when hazardous conditions are present that would affect public safety.

(III) **Waterview park.** In addition to the Public Green, the District shall include a supplemental public space oriented toward the waterfront, improved as a waterview park.

(a) **Location.** A waterview park shall adjoin the waterfront boardwalk continuously along the longest side of its major portion. The waterview park shall also adjoin a sidewalk or walking path continuously along at least one side.

(b) **Area and dimensions.** A waterview park shall be a minimum of 5,000 square feet in area, at least 50 percent of which shall be accessible to pedestrians. The minimum dimension of the major portion shall be 45 feet; the minimum dimension of any remaining portion of a waterview park shall be 30 feet.

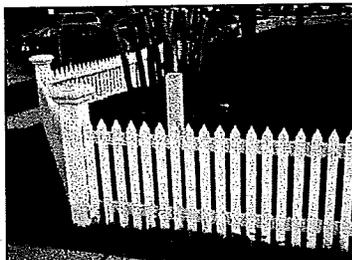
(c) **Circulation and access.** There shall be at least one circulation path that shall provide access throughout the major portion of the waterview park to any primary building entrance accessible from the park and any use that may be present on or adjacent to the waterview park. It shall have a minimum clear width of ten feet.



Entrance to a pocket park

(d) **Seating.** At least one linear foot of seating is required for every 100 square feet of waterview park area.

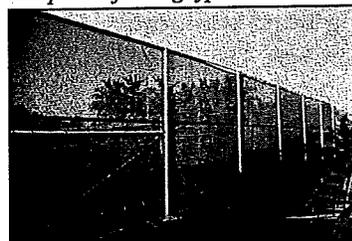
(e) **Hours of operation and limitations on accessibility.** The waterview park shall be open to the public except when hazardous conditions are present that would affect public safety.



Acceptable fencing type

(IV) **Pocket parks or neighborhood greens.**

(a) One pocket parks or neighborhood greens (a minimum of 2,500 sq. ft. in area) shall be incorporated into the overall site design within two hundred linear feet of each multi-family building with four or more residential units; provided, however, that the Public Green may be used to satisfy this requirement for no more than one residential building with frontage on the green. The pedestrian boardwalk along the waterfront and the waterview park may each be used to satisfy this requirement for any multi-family building erected east of the train tracks.

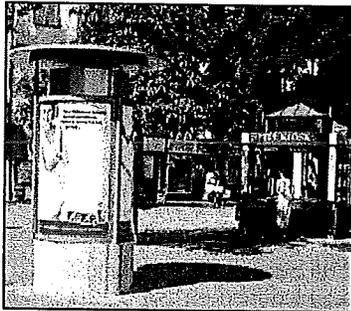


Unacceptable fencing type

(b) Pocket parks and neighborhood greens may be enclosed with fencing. Where fencing is provided, pedestrian access through the fence shall be located at logical points of entry and/or at regular intervals along the traveled way. Fencing shall be a maximum of four feet tall, constructed of wood, stone, cast stone, or metal or some combination thereof and designed to be visually permeable and

decorative in nature. Chain link, cyclone, stockade, barbed wire, and similar utilitarian fences are not permitted.

(V) Accessory buildings.



(a) **Kiosks.** Where a kiosk is provided, it shall not occupy an area in excess of 150 square feet, including roofed areas. A kiosk may be freestanding or attached on only one side to a building wall.

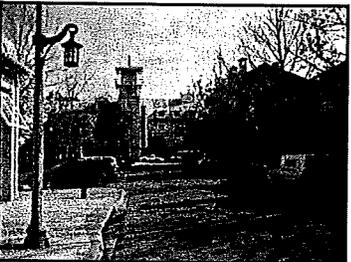
(b) **Open air cafes.** Where an open air café is provided, it shall be permanently unenclosed except that it may have a temporary fabric roof. No kitchen equipment shall be installed within an open air café. Kitchen equipment may be contained in a kiosk adjoining the open air café.



(c) Outdoor eating services or uses occupying kiosks may serve customers on a waterfront public access area through open windows.

(C) Traveled ways, driveways and sidewalks.

(I) General.



(a) **Transportation network.** A hierarchical transportation network shall be designed that includes a boulevard providing a direct connection from Court Street (Route 3A) to the waterfront, and a series of internal traveled ways providing access to existing and future development within the District. The transportation network shall provide adequate traffic capacity, provide connected pedestrian and bicycle routes, limit access onto traveled ways designed for lower traffic volumes, and promote safe and efficient mobility through the District. Traffic calming features may be used to encourage slow vehicular traffic speeds. To the extent practical, the internal traveled ways shall combine to provide multiple access routes to and around buildings within the District.

(b) **Transportation options.** The overall transportation network shall provide for different modes of transportation including walking, cycling, driving and public transportation. Motor vehicle circulation shall be designed to minimize conflicts with pedestrians and bicycles. Convenient pedestrian and bicycle access shall be provided to the Plymouth MBTA Commuter Rail station.

(c) **Vehicle and emergency access.** The Planning Board shall require adequate emergency vehicle access to all Development Projects. The following standards will be applied:

(i) If necessary, a minimum emergency access easement or right-of-way width of 20 feet is required.

(ii) The Applicant must document the rights to use all off-site private ways necessary

to provide emergency access.

- (iii) The access ways must have adequate drainage provisions.
- (iv) A gate or breakaway barrier suitable in design and construction to the Board may be permitted.
- (d) **Operations and maintenance plan.** The Applicant shall provide an operations and maintenance plan for traveled ways and drainage facilities associated with the traveled ways for review by the Planning Board. A homeowners' association, a condominium association or a business owners' association may be established to ensure that all traveled ways and associated drainage facilities shall be properly maintained.

(II) Design Guidelines

(a) Site entrance.

- (i) **Design concept.** The entrance from Court Street into the site shall be laid out with a boulevard and landscaped so as to create an attractive, main gateway into the District.
- (ii) **Landscaping.** Landscaping shall be used to accentuate the entrance and make it easily visible.
- (iii) **Lighting.** Lighting shall be landscape level to accentuate the entrance and make it easily visible.



- (iv) **On-street parking.** On-street parking shall be permitted near the site entrance where it will not interfere with site distance for vehicles exiting the District, nor with vehicle turning movements into or out of the District.

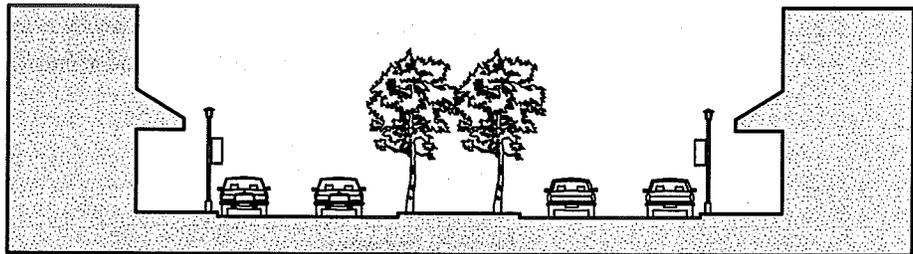
(b) Boulevard.

- (i) **Design concept.** The boulevard shall serve as the primary vehicular access from Court Street to the District, with appropriate formal and unique features that define the boulevard and create a dedicated and prominent pedestrian and bicycle corridor connected to the waterview park and the Plymouth Seaside Rail Trail. Pedestrian crossings shall be installed at intersections and intermediate locations with no more than 175 feet between crossings. Different paving textures and materials shall be used to distinguish the pedestrian crossings in the boulevard.
- (ii) **Landscaping.** The boulevard shall include a central median at least 15 feet in width with two shade trees (minimum 4 inch caliper) planted every 50 linear feet.



(iii) **Lighting.** Light posts shall be spaced at a maximum distance of 40 feet. The light center of the fixture shall be mounted at a minimum height of 12 feet and a maximum height of 15 feet above the adjacent traveled way. Lighting shall be located within 5 feet of the traveled way.

(iv) **On-street parking.** On-street parking is encouraged adjacent to first floor commercial building spaces. Paint stripes or different paving materials shall be used to define parking spaces.



Boulevard section. For illustrative purposes only.



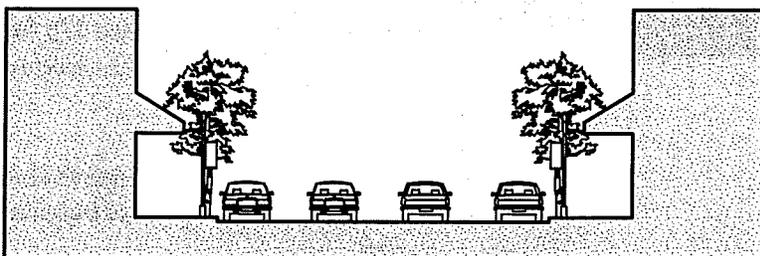
(c) **Mixed-use driveway.**

(i) **Design concept.** Driveways serving Mixed-Use Development Projects shall include on-street parking, amenities such as decorative lamp posts, sidewalk furniture, flower boxes and planters, decorative paving designs and banners typical of a community retail center.

(ii) **Landscaping and sidewalks.** Mixed-use driveways shall include shade trees every 30 linear feet staggered on each side of the driveway and sidewalks of a minimum width of 12 feet.

(iii) **Lighting.** Light posts shall be spaced at a maximum distance of 40 feet. The light center of the fixture shall be mounted at a minimum height of 12 feet and a maximum height of 15 feet above the adjacent traveled way. Lighting shall be located within five feet of the traveled way.

(iv) **On-street parking.** On-street parking shall be permitted on both sides of the driveway, where otherwise not in conflict with pedestrian access, emergency access, sidewalk furniture and plantings. Paint stripes or different paving materials shall be used to define parking spaces.



Mixed use section. For illustrative purposes only.



(d) Residential driveway.

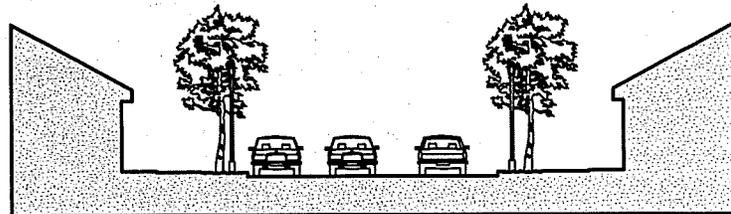
(i) Design concept. Driveways with only residential buildings located or planned along the driveway frontage shall be safe for all modes of travel, with slow vehicle speeds, and shall include amenities such as decorative lamp posts, sidewalk furniture, and flower boxes and planters.



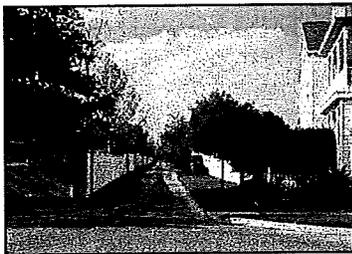
(ii) Landscaping and sidewalks. Residential driveways shall include shade trees every 30 linear feet, and sidewalks of a minimum width of 5 feet.

(iii) Lighting. Light posts shall be spaced at a maximum distance of 40 feet. The light center of the fixture shall be mounted at a minimum height of 12 feet and a maximum height of 15 feet above the adjacent traveled way. Light posts shall be located within 5 feet of the traveled way.

(iv) On-street parking. On-street parking shall be permitted.



Residential driveway section. For illustrative purposes only.



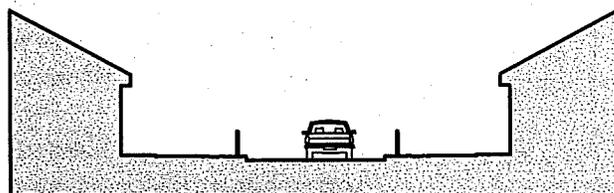
(e) Alley.

(i) Design concept. Alleys shall be used for extending utilities, maintenance of properties, trash pickups, and access to on-site parking and garages. Widths shall be appropriate for one-way traffic with turning radii allowing for maintenance vehicles.

(ii) Landscaping. No landscaping is necessary. Fencing is permitted.

(iii) Lighting. No lighting shall be required except for driveway entrances to individual properties.

(iv) On-street parking. No on-street parking is to be designed for alleys.



Alley. For illustrative purposes only.

(III) Sidewalks and walking paths.

- (a) **General.** Lighted walkways shall be provided to link buildings with public spaces, parking areas, recreation facilities and sidewalks on adjacent land wherever practical.
- (b) **Design and visibility.** Where pedestrian connections cross traveled ways, a crosswalk or change in paving shall delineate the pedestrian connection.
- (c) **Lighting.** Light posts shall be spaced at a maximum distance of 40 feet. The light center of fixtures serving only sidewalks and walking paths shall be mounted at a maximum height of 12 feet above the adjacent sidewalks and walking paths.
- (d) **Accessibility.** Sidewalks and pedestrian walking paths shall be accessible to the handicapped in accordance with the Americans with Disabilities Act.
- (e) **Hours of operation and limitations on accessibility.** All sidewalks and walking paths shall be open to the public except when hazardous conditions are present that would affect public safety.

(IV) Waterfront boardwalk.

- (a) Continuous pedestrian access of a minimum width of 10 feet shall be provided along the water's edge.
- (b) Waterfront public access areas shall be accessible to the handicapped in accordance with the Americans with Disabilities Act.
- (c) One linear foot of seating shall be provided for every 200 square feet of required waterfront boardwalk.
- (d) One shade tree and one small ornamental tree is required for every 750 square feet of the required waterfront boardwalk and may be planted anywhere within the coastal public space. Additional plantings may be included in the landscaping plan.

(V) Bicycle lanes, bicycle paths and bicycle parking.

- (a) **General.** Lighted bicycle paths may be provided to link residential and mixed-use buildings with the waterfront, adjacent public spaces, parking areas, recreation and public facilities or sidewalks on adjacent land wherever practical.
- (b) **Design and visibility.** Designated bicycle paths, when provided, shall be paved with asphalt or a similar smooth and elastic, monolithic surfacing material. Where bicycle connections cross traveled ways, a change in paving shall delineate the



bicycle route.

- (c) **Bicycle parking.** The overall site design shall include bicycle parking spaces.

(VI) Traveled way and boulevard construction standards.

- (a) **Traveled way and boulevard widths and alignments.** Traveled way and driveway widths shall be scaled to neighborhood size and shall be patterned after the character of the North Plymouth Village Service Area. Where new traveled ways are continuous with an existing traveled way, such ways shall transition seamlessly into the existing Plymouth street network, and traveled way widths shall be compatible with the width of the connecting street.
- (b) **Curb cuts.** Curb cuts may be limited to intersections with other traveled ways or access drives to parking areas for commercial, civic or multifamily residential uses.
- (c) **Curbing.** Traveled way and driveway curbing may be vertical granite, sloped granite, pre-cast concrete or bituminous concrete. Curbing shall not be required in Alleys. The Applicant shall have the option of choosing the type of material to be used for curbing, and may not include curbing where drainage swales or other Low Impact Development stormwater management strategies are proposed.
- (d) **Drainage.** Traveled ways shall include adequate provision for stormwater management and drainage including but not limited to a combination of catch basins, manholes and hard pipe. The use of pervious pavement and Low Impact Development strategies such as multiple drainage swales and bioretention basins should be considered as part of the stormwater management design. The stormwater management measures proposed for the site should conform to the best management practices described in the Commonwealth's Stormwater Management Handbooks, Volumes 1 and 2, and should conform, whenever possible, to "A Guide for the Design of Storm Drainage Facilities in the Town of Plymouth, Massachusetts" prepared by the Plymouth Department of Public Works, Engineering Division and dated December 1983.

(D) Site plan.

(I) General.

- (a) **Buildings.** Building orientation, layout and shapes for new construction shall take into account adequate light and air for the building and surrounding buildings. Buildings may have zero lot line setbacks where appropriate to achieve high quality streetscape design. Variations in front yard setbacks shall be permitted where it adds visual interest to the streetscape and where the proposed setbacks are allowed in the Building Forms section.

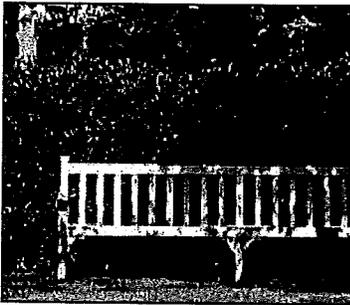
(b) **Proximity to Court Street and boulevard.** Buildings that front on Court Street or the boulevard shall be of comparable scale and complementary design to existing multi-story buildings in the North Plymouth Village Service Area.

(c) **Privacy.** Residential and mixed-use building designs shall provide adequate privacy for on-site and adjacent residential units by (i) screening or planting, (ii) orienting the structure toward open space or a pedestrian way, or (iii) the arrangement of rooms and design of the front of the building. Where appropriate, natural buffer areas shall be maintained to enhance views and privacy.



(d) **Landscaping.** Native, drought resistant and salt tolerant species shall be used for all landscaping materials. A minimum of one large tree (minimum 3 inch caliper) with appropriate root protection and rain absorption shall be provided for every 20 parking spaces. Trees should also be adjacent to structures.

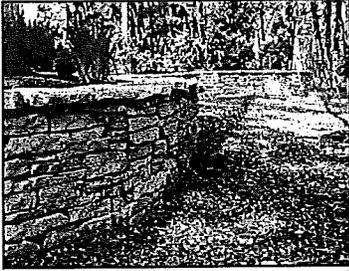
(e) **Underground Utilities.** All new utilities (except water and wastewater treatment structures and other facilities that require above grade access) shall be installed underground.



(f) **Screening.** Decorative walls, shrubs, solid fencing or other view-obstructing materials shall be used to conceal mechanical, electrical, and communications equipment and meters, trash dumpsters, delivery areas, outdoor storage and parking areas from view of the traveled way and any dwellings.

(g) **Pedestrian network.** Site plans for new construction should maintain or improve pre-development pedestrian access to buildings, parking areas, recreational areas, public space and the waterfront, and shall be completed with considerations of pedestrian safety, handicapped access and visual quality.

(h) **Surface water drainage and wastewater disposal.** Surface runoff is to be directed into infiltration-based systems. All systems which deliver or may discharge water into the ground shall be sufficient to treat said water and to monitor said treatment so as to achieve any and all applicable effluent standards of the Plymouth Board of Health or the Massachusetts Department of Environmental Protection (DEP), as applicable, in light of the particular structure, its proposed use and the soil and groundwater conditions of the proposed site. The stormwater management measures proposed for the site should conform to the best management practices described in the Commonwealth's Stormwater Management Handbooks, Volumes 1 and 2, and should conform, whenever possible, to "A Guide for the Design of Storm Drainage Facilities in the Town of Plymouth, Massachusetts" prepared by the Plymouth Department of Public Works, Engineering Division and dated December 1983. The use of Low Impact Design standards such as swales, bioretention basins and the use of green roofs is encouraged for stormwater management.

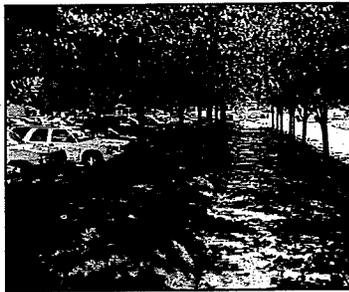


- (i) **Retaining walls.** Retaining walls shall be constructed of stone, decorative block, stamped concrete or stone veneer.
- (j) **Signage.** In addition to the allowed retail and commercial space signage, the Applicant may provide a main entrance sign to the District as a whole not to exceed 40 square feet on a side. The Applicant may also provide directory signage including all commercial tenants within the District.

(II) Residential sites.

- (a) **Proximity to public space and pedestrian and bicycle network.** Residential buildings shall be sited to allow for front steps, balconies, and porches with access to the overall public space and pedestrian and bicycle network. Where proposed residential buildings are not located adjacent to public spaces, site design shall include new public and/or private open spaces or yards accessible to building residents.

- (b) **Proximity to Plymouth Harbor.** Residential buildings shall be designed to maximize water views from as many dwelling units as practical.



- (c) **Parking Lots – Location:** Parking may be provided within or underneath residential structures. Surface parking lots shall be located to the side and the rear of new buildings and, where adjacent to a traveled way, shall be adequately screened and designed to reinforce a driveway or street line that is compatible with adjacent development.

- (d) **Parking Lots – Landscaping:** Surface parking lots shall have landscaped areas with the intent to minimize the visual impact of large parking areas.

(III) Mixed-use sites.

- (a) **Non-residential uses.** Retail uses shall exist in ground floor levels and shall be accessible to pedestrians from sidewalks. However, retail uses may include a second story if the overall non-residential development does not exceed the maximum allowable in the District Bylaw.

- (b) **Entrance.** The main entrance of a retail use shall face the traveled way and at least one sidewalk.

- (c) **Sidewalks and streetscape design.** Mixed-use buildings shall front on traveled ways with sidewalks of a minimum width of 12 feet. The sidewalks shall contain site amenities such as benches, decorative planters, flower boxes, decorative paving designs and banners.

- (d) **Screening and buffering.** Mixed-use buildings shall be visually buffered from

adjacent single-family residential uses with a 20 foot buffer including a combination of deciduous and evergreen trees and fencing of a minimum height of 6 feet.

(e) **Landscaping.** Where practical, the landscaped area of a mixed-use site shall be configured to adjoin or complement public space.

(f) **Parking Lots. Landscaping:** Parking lots shall have landscaped areas to minimize visual impacts.

(E) **Building design.**

(I) **General.**

(a) **New buildings.** New buildings shall complement nearby buildings and structures in scale, proportions, and exterior appearance and building materials. Nearby structures include both existing nearby residential buildings, and the extensive brick mill buildings and warehouse buildings of Cordage Park. Creative designs that relate to and integrate the variety of surrounding construction and design are encouraged. Building materials should be durable. The architectural features, materials, and the articulation of a façade of a building shall be continued on all sides visible from a public street, or from the District site entrance or boulevard.

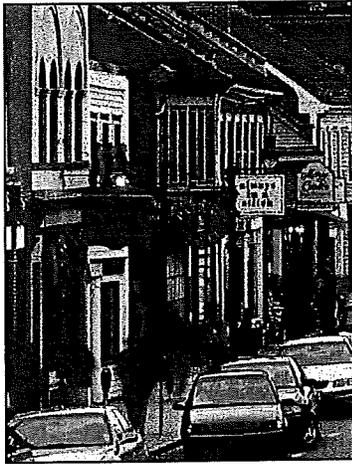
(b) **Massing of new construction.**

(i) **Building facades and footprints.** Building facades and footprints shall be articulated to vary the streetscape and provide visual interest. Building facades shall vary in height or vary the planes of exterior walls in depth and direction to break up the box-like mass and scale of new buildings.

(ii) **Facade articulation.** No uninterrupted length of any facade should exceed 40% of the façade's total length, or 100 horizontal feet, whichever is less, without incorporating at least two of the following: color change, material change, texture change, plane projections of recesses, trellises, balconies, or windows.

(iii) **Architectural detail.** The architecture facing a public space or pedestrian corridor should exhibit a human scale of detail, such as awnings, moldings, pilasters and other architectural details.

(iv) **Building massing.** Upper stories may be set back to diminish building mass consistent with the specific architectural style.

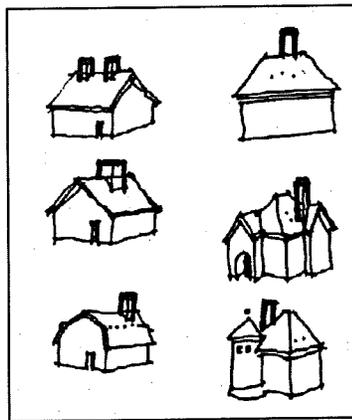


(c) Building materials.

(i) **Primary façade.** Natural materials such as wood, brick, masonry, stone, glass, terra cotta and tile are preferred within the development; however, high quality synthetic materials may also be considered. A combination of materials shall be used in order to create visual interest. Metal may be used to add accents to façade design, but shall not comprise more than 5% of a building façade.

(ii) **Facade material.** Remaining facades shall use the primary façade material as an accent and provide a combination of other natural materials for the secondary facades.

(d) **Roof profiles.** Roof profiles of new buildings shall employ varied articulation on vertical and horizontal planes for visual relief to the tops of buildings, and should be compatible with the existing surrounding development and otherwise suited to the regional climate. Parapets and cornices shall be designed to screen rooftop equipment and delineate the building façade. Other elements such as towers and piers may also be used to break up the horizontal massing.



(e) **Doors and fenestration.** Window and door style, proportions, size and trim should be compatible with existing buildings in the North Plymouth Village Service Area or should be compatible with the entries and fenestration of the existing mill and warehouse buildings. Variations are permissible when they create a style defining the building types.

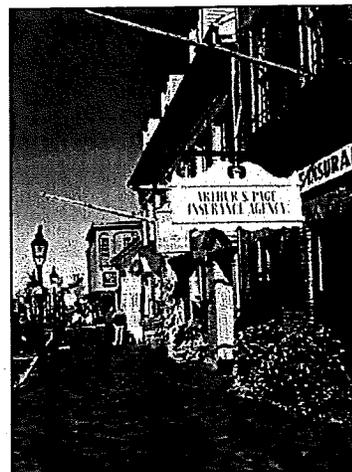
(f) **Sustainable design.** New buildings shall contain insulation and ventilation systems and appliances specified to meet Energy Star Standards.

(II) Residential buildings.

(a) **General.** Renovation of existing buildings in the District shall incorporate architectural elements of the existing mill building design.

(b) **Façade.** The use of a variety of attractive and durable building materials is encouraged to create a visually interesting building façade and streetscape. Façades and buildings shall be designed to distinguish the buildings and building sections as residential.

(c) **Balconies, porches and decks.** Residential balconies and porches on the traveled ways are encouraged where practical. Balconies may extend over half of the adjacent sidewalk for mixed-use buildings with residential on the upper floors.



(d) **Windows.** Fenestration patterns may vary from building to building but should exhibit general consistency by proportions along a streetscape. Vertical proportions for windows are preferred; continuous horizontal bands of window glass

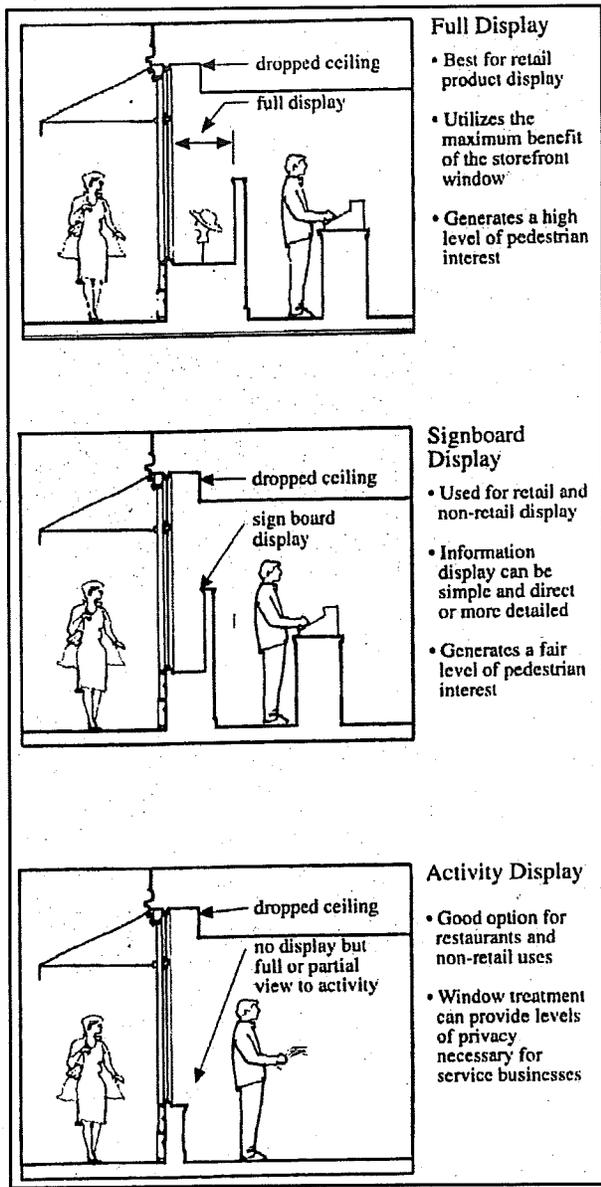
exceeding 6 feet in length are prohibited, except in the existing mill buildings.

- (e) **Doors.** Entrances into residential units shall be distinguished from entrances into commercial buildings.
- (f) **Landscaping.** Fencing, evergreen foliage or stone walls may be used to screen or delineate private open spaces and yards.
- (g) **Internal parking.** Where parking is situated within or below residential buildings, such parking shall be screened from traveled ways, not including alleys, with the use of hard or soft landscape materials.
- (h) **Garages.** If garages are proposed, they should be designed in such a way that they do not front on a boulevard. Detached garage banks, or recessed locations behind, under or in the side yard of the house should be used where practical.

(III) Mixed-use buildings.

(a) Façade.

- (i) **Facade articulation.** Mixed-use buildings shall be designed with varied and articulated facades to provide visual interest. Decorative patterning in exterior wall materials should be considered.
 - (ii) **Architectural detail.** Long expanses of blank walls facing a traveled way or public space are not permitted. Vertical piers, bay windows and recessed entries should be used to add visual character and maintain the pedestrian scale of the streetscape.
 - (iii) **Residential access.** Separate access to second story residential units shall be easily distinguished by location and design from retail and commercial entrances.
 - (iv) **Building articulation.** A transition line above the ground floor retail level shall be expressed architecturally by a storefront cornice, a belt course, a change in materials, a sign band or other similar element. The transition line should be relatively consistent, but does not need to be at the exact same height across buildings within the same streetscape.
- (b) **Windows.** Fenestration patterns may vary from building to building but should exhibit general consistency along a streetscape.
 - (i) **Window proportions.** Vertical proportions for windows are preferred; continuous horizontal bands of window glass exceeding 6 feet in length are discouraged except for the existing mill buildings.



(ii) **Retail visibility.** Retail and first floor commercial windows shall allow two-way visibility in order to enhance safety on the traveled way and create a visually interesting pedestrian environment. The use of dark tinted glass or reflective glass is prohibited.

(iii) **Retail windows.** Retail portions of mixed-use buildings shall include a minimum of 30% glazed windows along the store frontage.

(c) **Balconies, porches and decks.** Balconies on the upper floors may extend over half of the adjacent sidewalk.

(d) **Exterior signs for retail and commercial space.** The Applicant may propose a comprehensive sign program for the entire District to establish a uniform theme and a common style including size, shape and material.

(i) **Sign Size.** The Planning Board may allow signs of such size and height as appropriate for identification and safety in relation to a proposed use and in relation to the intensity, buffers, and setbacks of such use. Signage on each side of a building shall not exceed a total of 40 sq. ft. or 10% of the building façade, whichever is less. One cantilevered sign not in excess of 8 square feet shall be allowed on each side of a building fronting on a traveled way, and any such cantilevered sign shall not count toward the total allowable area of signage on a single façade.

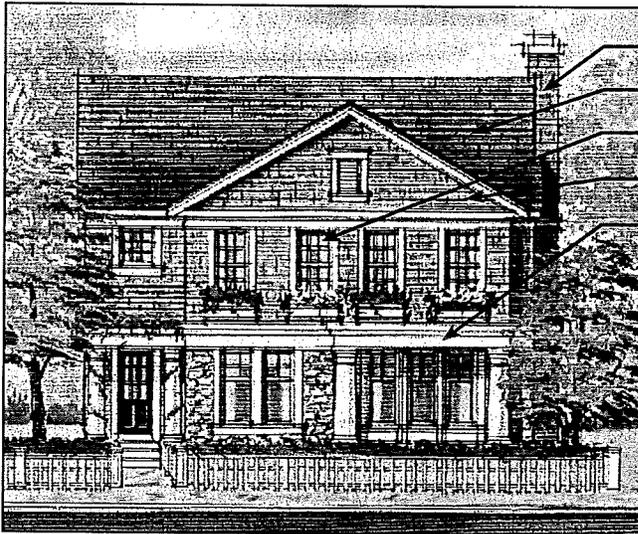
(ii) **Sign Location.** Signage shall be integrated into overall building design either in a sign band, with awnings, or as cantilevered signs mounted perpendicular to the building face. All signage shall be installed so as not to obscure or damage architectural features such as windows and trim elements. Wall signs and projecting signs are preferred.

(iii) **Sign Design.** Signage should have simple geometric shapes with two to three colors to complement the colors of the retail building. Internally lit signs and flashing signs are prohibited.

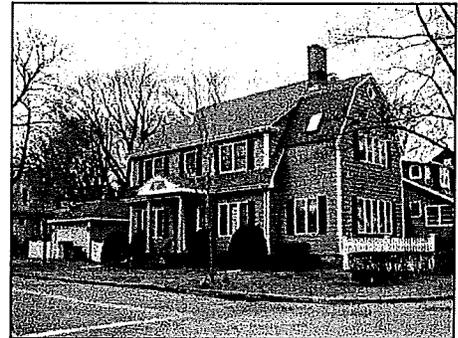
(e) **Awnings.** If awnings are used to provide signage, they should be standardized by type, size, materials, colors, illumination and method of installation across the façade to the largest extent practical.

Single Family Detached

A detached residential dwelling unit, designed for one family only.



- Use brick for accents wherever possible
- Pitched roof
- Vertically proportioned windows
- Facade articulation
- Front porches, or entries where possible



Gabled roof, covered entry and dormers provide architectural variety



Front porches and articulated facades improve the overall streetscape design.



Historic housing in Plymouth includes facade articulation and traditional roof forms.

Dimensional Regulations: SINGLE FAMILY DETACHED			
Min. Lot Area	5,000 sq ft	Max. Lot Coverage	N/A
Front Setback*	Build-to-Line 0 ft to 25 ft	Building Height***	35 ft
Combined Side Setbacks**	10 ft	Sub-Districts	Court Street First: Court Street Second
Rear Setback	20 ft		

* Setbacks shall be measured from the edge of the traveled way, not from property or right-of-way boundaries.

** Setbacks may be located on one or both sides of a building. Where zero side setback is provided on one side of a building, provided that a reciprocal access easement is recorded for both lots and townhouses or other attached dwellings, and provided that all dwellings have access to the rear yard through means other than the principal structure.

*** Where allowable building heights exceed the maximum allowable heights established in Sec. 205-74(G) of the District Bylaw, the maximum allowable heights in the District Bylaw shall govern.

Two and Three Family

A detached residential dwelling unit designed for two or three families.



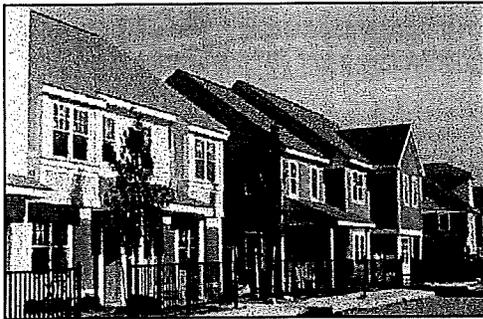
Pitched roof

Vertically proportioned windows

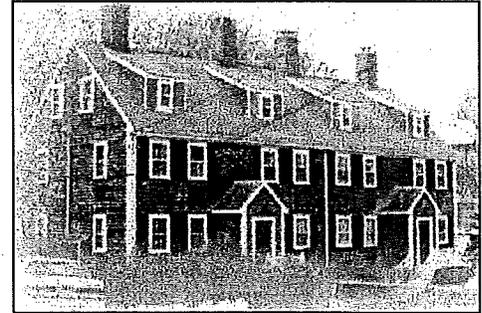
Facade articulation

Front porches, or entries where possible

Brick accents where possible



Designing single family homes to have front porches and articulated facades improve the overall streetscape design.



Historic housing in Plymouth includes facade articulation and traditional roof forms

Dimensional Regulations: TWO AND THREE FAMILY			
Min. Lot Area	N/A	Max. Lot Coverage	N/A
Front Setback*	Build-to-Line 0 ft to 15 ft	Building Height***	40 ft
Combined Side Setbacks**	0 ft	Sub-Districts	Court Street First: Court Street Second; Coastal
Rear Setback	20 ft		

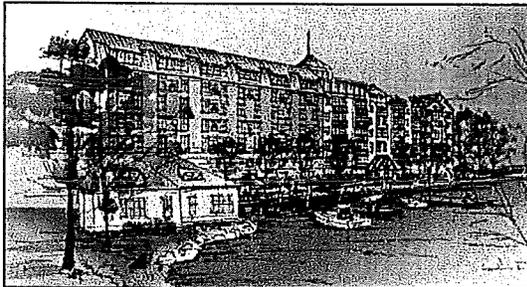
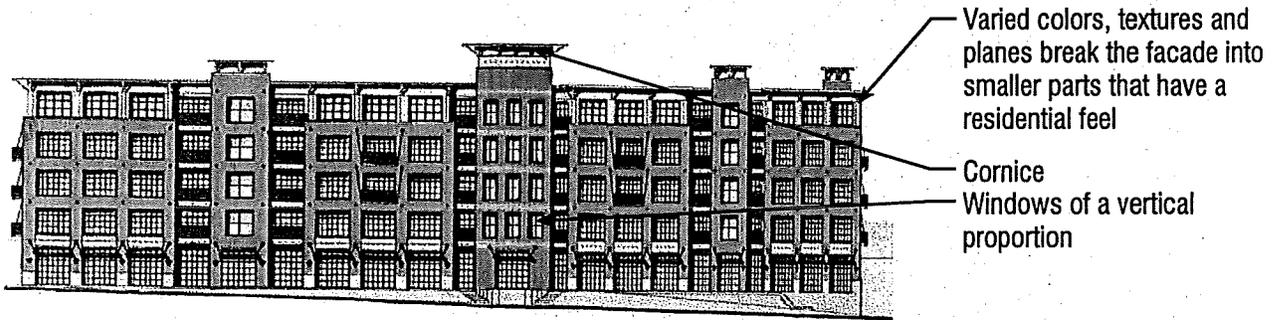
* Setbacks shall be measured from the edge of the traveled way, not from property or right-of-way boundaries.

** Setbacks may be located on one or both sides of a building. Where zero side setback is provided on one side of a building, provided that a reciprocal access easement is recorded for both lots and townhouses or other attached dwellings, and provided that all dwellings have access to the rear yard through means other than the principal structure.

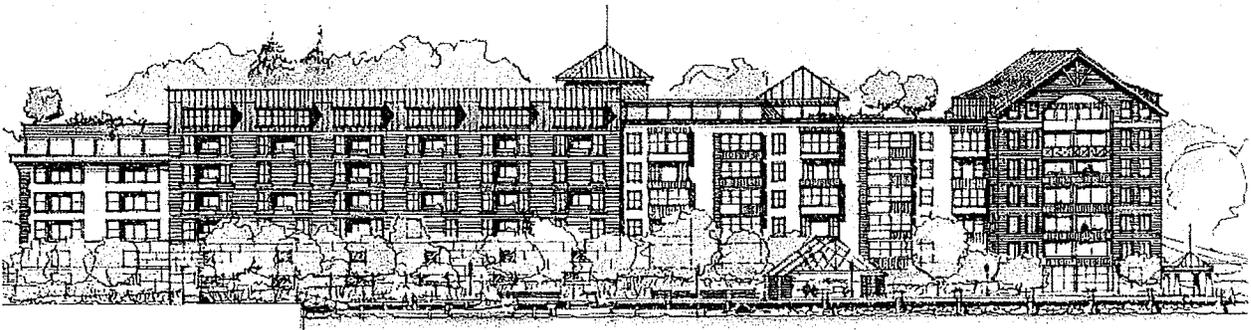
*** Where allowable building heights exceed the maximum allowable heights established in Sec. 205-74(G) of the District Bylaw, the maximum allowable heights in the District Bylaw shall govern.

Multi-Family

A multi-floor building designed to house more than three families. May be multiple connected buildings, or a single building.



A modern industrial appearance blends well with the traditional waterfront factory and mill buildings.



Dimensional Regulations: MULTI FAMILY			
Min. Lot Area	N/A	Max. Lot Coverage	N/A
Front Setback*	Build-to-Line 0 ft to 10 ft	Building Height***	60 ft
Combined Side Setbacks**	0 ft	Sub-Districts	Court Street Second: Coastal
Rear Setback	0 ft		

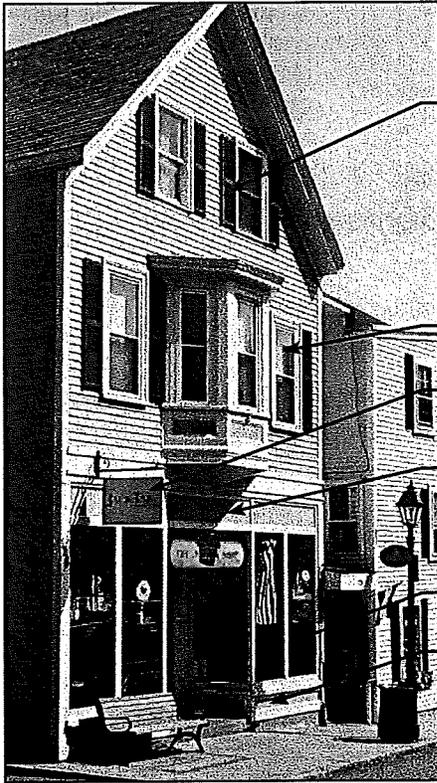
* Setbacks shall be measured from the edge of the traveled way, not from property or right-of-way boundaries.

** Setbacks may be located on one or both sides of a building. Where zero side setback is provided on one side of a building, provided that a reciprocal access easement is recorded for both lots and townhouses or other attached dwellings, and provided that all dwellings have access to the rear yard through means other than the principal structure.

*** Where allowable building heights exceed the maximum allowable heights established in Sec. 205-74(G) of the District Bylaw, the maximum allowable heights in the District Bylaw shall govern.

Village-Scaled Mixed Use

A multi-level building with no more than three floors that houses retail/commercial uses on the first floor, and residential or office space on the upper floors.



Varied colors, textures and planes break the facade into smaller parts that have a residential feel

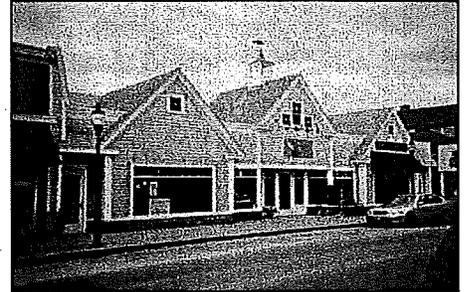
Vertically proportioned windows

Decorative lighting on signage band

Sign band visually separates commercial uses from upper floors

Storefront windows

Multiple materials used to differentiate first floor from floors above



Articulated roof shapes help break up the mass of larger buildings, creating a more residential feel.



Articulated entries and storefront windows.



Differentiation in color and roof shapes brings interest to the streetscape.

Dimensional Regulations: VILLAGE-SCALED MIXED USE			
Min. Lot Area	N/A	Max. Lot Coverage	N/A
Front Setback*	Build-to-Line 0 ft to 10 ft	Building Height***	45 ft
Combined Side Setbacks**	0 ft	Sub-Districts	Court Street First; Court Street Second
Rear Setback	0 ft		

* Setbacks shall be measured from the edge of the traveled way, not from property or right-of-way boundaries.

** Setbacks may be located on one or both sides of a building. Where zero side setback is provided on one side of a building, provided that a reciprocal access easement is recorded for both lots and townhouses or other attached dwellings, and provided that all dwellings have access to the rear yard through means other than the principal structure.

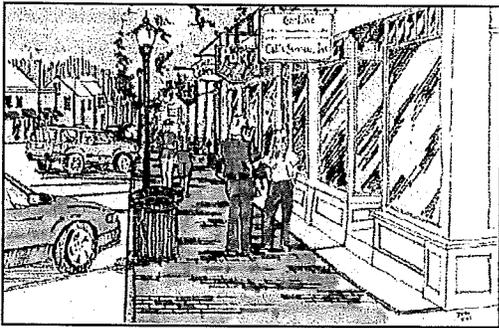
*** Where allowable building heights exceed the maximum allowable heights established in Sec. 205-74(G) of the District Bylaw, the maximum allowable heights in the District Bylaw shall govern.

Mixed-Use

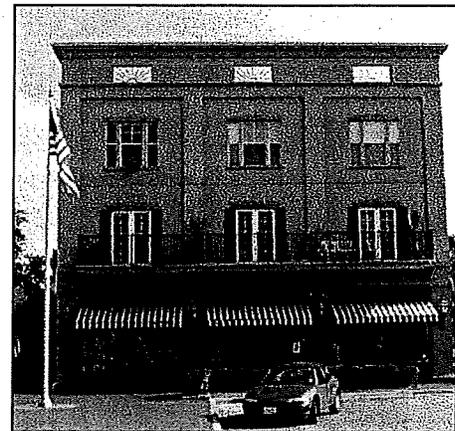
A multi-floor building with retail/commercial on the first floor and residential or office uses on the second floor.



- Cornice
- Vertically proportioned windows
- Decorative lighting on signage band
- Sign band visually separates commercial uses from upper floors
- Storefront windows



Signage and ample glazing create an active storefront



Awnings and a different facade material create a visual base and pedestrian scale

Dimensional Regulations: MIXED-USE			
Min. Lot Area	N/A	Max. Lot Coverage	N/A
Front Setback*	Build-to-Line 0 ft to 10 ft	Building Height***	60 ft
Combined Side Setbacks**	0 ft	Sub-Districts	Coastal; Coastal Renovation
Rear Setback	0 ft		

* Setbacks shall be measured from the edge of the traveled way, not from property or right-of-way boundaries.

** Setbacks may be located on one or both sides of a building. Where zero side setback is provided on one side of a building, provided that a reciprocal access easement is recorded for both lots and townhouses or other attached dwellings, and provided that all dwellings have access to the rear yard through means other than the principal structure.

*** Where allowable building heights exceed the maximum allowable heights established in Sec. 205-74(G) of the District Bylaw, the maximum allowable heights in the District Bylaw shall govern.

Mill Style: Renovation

A mixed-use or single-use adaptive reuse of an existing building that preserves the character of the architecture.



- Screen all rooftop equipment
- Cornice
- Original concrete frame remains visible as an architectural feature
- Infill panels should blend with architectural style
- A separate material differentiates the base from floors above



The exposed concrete frame provides a sense of history.

Large windows accentuate the historical architectural appearance.

Dimensional Regulations: MILL STYLE: RENOVATION			
Min. Lot Area	N/A	Max. Lot Coverage	N/A
Front Setback*	Build-to-Line 0 ft to 10 ft	Building Height***	See Sec.205-74(G)(2)(d)
Combined Side Setbacks**	0 ft	Sub-Districts	Coastal Renovation
Rear Setback	0 ft		

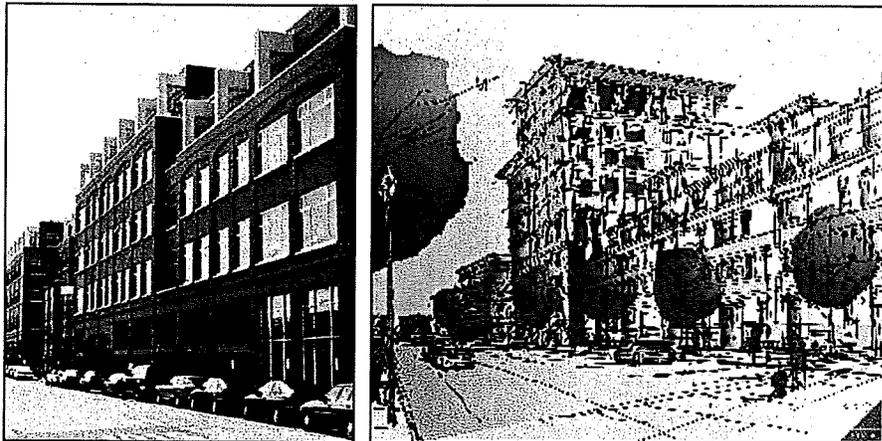
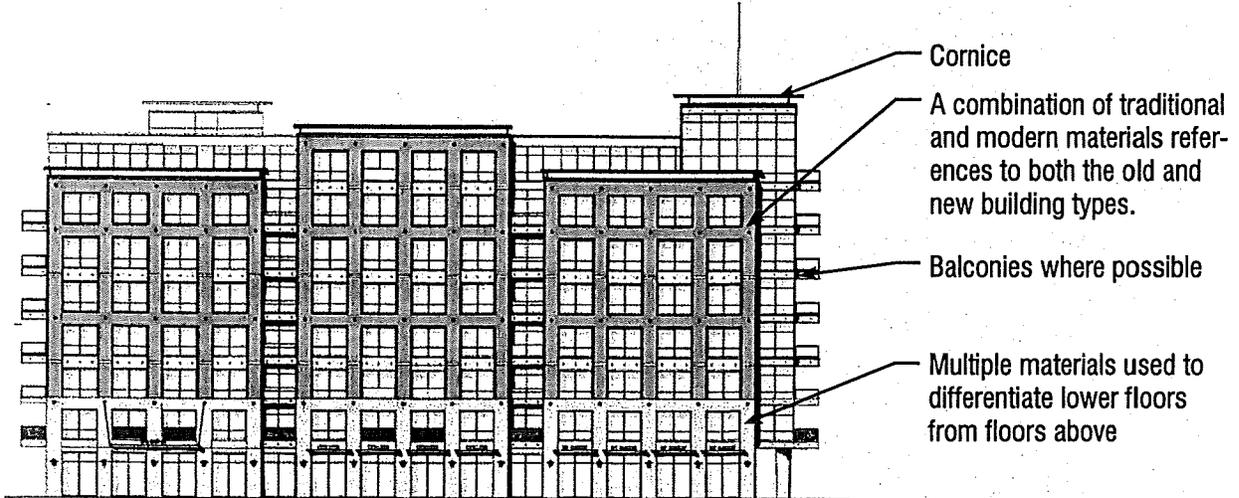
* Setbacks shall be measured from the edge of the traveled way, not from property or right-of-way boundaries.

** Setbacks may be located on one or both sides of a building. Where zero side setback is provided on one side of a building, provided that a reciprocal access easement is recorded for both lots and townhouses or other attached dwellings, and provided that all dwellings have access to the rear yard through means other than the principal structure.

*** Where allowable building heights exceed the maximum allowable heights established in Sec. 205-74(G) of the District Bylaw, the maximum allowable heights in the District Bylaw shall govern.

Mill Style: New Construction

A mixed-use or single-use building that preserves the character of the surrounding architecture while having a modern character that blends with new buildings on the site.



Varied materials, colors and heights create a varied appearance that gives the building architectural interest.

Dimensional Regulations: MILL STYLE: NEW CONSTRUCTION			
Min. Lot Area	N/A	Max. Lot Coverage	N/A
Front Setback*	Build-to-Line 0 ft to 10 ft	Building Height***	See Sec.205-74(G)(2)(d)
Combined Side Setbacks**	0 ft	Sub-Districts	Coastal; Coastal Renovation
Rear Setback	0 ft		

* Setbacks shall be measured from the edge of the traveled way, not from property or right-of-way boundaries.

** Setbacks may be located on one or both sides of a building. Where zero side setback is provided on one side of a building, provided that a reciprocal access easement is recorded for both lots and townhouses or other attached dwellings, and provided that all dwellings have access to the rear yard through means other than the principal structure.

*** Where allowable building heights exceed the maximum allowable heights established in Sec. 205-74(G) of the District Bylaw, the maximum allowable heights in the District Bylaw shall govern.

Appendix V. Financials

Table 1

CAPITAL IMPROVEMENT PROGRAM

Proposed Improvement	Unit	No. of Units	Unit Cost	Opinion of Probable Cost ⁽¹⁾
1 Highland Ave Intersection Improvements				
<i>Pavement demolition</i>	Sq.yd.	2,667	\$7	\$17,333
<i>Unclassified excavation</i>	Cb.yd.	800	\$15	\$12,000
<i>Gravel borrow</i>	Cb.yd.	533	\$16	\$8,533
<i>Grading</i>	Sq.yd.	2,667	\$4	\$10,667
<i>Roadway pavement</i>	Sq.ft.	24,000	\$3	\$60,000
<i>Traffic signal</i>	Ea.	1	\$85,000	\$85,000
<i>Traffic signal controls</i>	Ea.	1	\$75,000	\$75,000
<i>Sidewalks (one side only)</i>	Sq.ft.	1,800	\$5	\$9,000
<i>Curb (one side only)</i>	L.ft.	300	\$35	\$10,500
<i>Crosswalks</i>	Sq.ft.	2,000	\$3	\$5,000
<i>Lighting</i>	Fixture	8	\$9,500	\$76,000
<i>Drainage</i>	Ea.	1	\$25,000	\$25,000
<i>Design and contingency</i>				\$92,258
<i>Overhead and profit</i>				\$72,944
Subtotal				\$559,235
2 Pedestrian RR Underpass				
<i>Unclassified excavation</i>	Cb.yd.	187	\$15	\$2,800
<i>Gravel borrow</i>	Cb.yd.	124	\$16	\$1,991
<i>Grading</i>	Sq.yd.	622	\$4	\$2,489
<i>Stairways/ramps</i>	Set	4	\$15,000	\$60,000
<i>Walkways</i>	Sq.ft.	5,600	\$5	\$28,000
<i>Landscaping</i>	Sq.ft.	4,200	\$8	\$33,600
<i>Ornamental lighting</i>	Fixture	15	\$8,500	\$127,500
<i>Drainage</i>	Ea.	1	\$10,000	\$10,000
<i>Design and contingency</i>				\$64,095
<i>Overhead and profit</i>				\$49,571
Subtotal				\$380,046
3 Rail Bridge Pedestrian				
<i>Concrete deck widening</i>	Sq.ft.	10,000	\$75	\$750,000
<i>Walkways</i>	Sq.ft.	2,500	\$8	\$20,000
<i>Special pavement</i>	Sq.ft.	2,500	\$12	\$30,000
<i>Plantable soil borrow</i>	Cb.yd.	278	\$30	\$8,333
<i>Loam borrow</i>	Cb.yd.	93	\$40	\$3,704
<i>Spread top soil</i>	Cb.yd.	93	\$5	\$417
<i>Landscaping</i>	Sq.ft.	5,000	\$8	\$40,000
<i>Shrubs</i>	Ea.	50	\$80	\$4,000
	Fixture			

Benches	Ea.	3	\$1,200	\$3,600
Trash receptacles	Ea.	1	\$750	\$750
Drainage	Ea.	1	\$10,000	\$10,000
Design and contingency				\$234,326
Overhead and profit				\$177,244
Subtotal				\$1,358,874

4 North Common Expansion

Pavement demolition	Sq.yd.	2,222	\$7	\$14,444
Unclassified excavation	Cb.yd.	2,667	\$18	\$48,000
Plantable soil borrow	Cb.yd.	2,222	\$30	\$66,667
Loam borrow	Cb.yd.	444	\$40	\$17,778
Spread top soil	Cb.yd.	444	\$5	\$2,000
Grading	Sq.yd.	2,222	\$4	\$8,889
Landscaping	Sq.ft.	20,000	\$8	\$160,000
Trees	tree	20	\$1,100	\$22,000
Ornamental lighting	Fixture	4	\$8,500	\$34,000
Design and contingency				\$84,944
Overhead and profit				\$68,808
Subtotal				\$527,531

5 Exit Road to County St.^[2]

Pavement demolition	Sq.yd.	2,222	\$7	\$14,444
Unclassified excavation	Cb.yd.	2,133	\$15	\$32,000
Gravel borrow	Cb.yd.	1,422	\$16	\$22,756
Grading	Sq.yd.	7,111	\$4	\$28,444
Roadway pavement	Sq.ft.	64,000	\$3	\$160,000
Lighting (one side only)	Fixture	10	\$9,500	\$95,000
Drainage	Ea.	1	\$100,000	\$100,000
Design and contingency				\$60,800
Overhead and profit				\$74,850
Subtotal				\$573,850

6 Route 106 Widening^[3]

Pavement demolition	Sq.yd.	6,667	\$7	\$43,333
Unclassified excavation	Cb.yd.	2,667	\$15	\$40,000
Gravel borrow	Cb.yd.	1,778	\$16	\$28,444
Grading	Sq.yd.	8,889	\$4	\$35,556
Roadway pavement	Sq.ft.	80,000	\$3	\$200,000
Sidewalks (one side only)	Sq.ft.	12,000	\$5	\$60,000
Curb (one side only)	L.ft.	1,000	\$35	\$35,000
Lighting (one side only)	Fixture	10	\$9,500	\$95,000
Traffic signal modification	Ea.	2	\$50,000	\$100,000
Drainage	Ea.	1	\$100,000	\$100,000
Design and contingency				\$159,333
Overhead and profit				\$134,500
Subtotal				\$1,031,167

7 Public Parking Lot

Unclassified excavation	Cb.yd.	6700	\$16.00	\$107,200
Class A rock excavation	Cb.yd.	100	\$40.00	\$4,000
Trenches and stockpiled		850	\$10.00	\$8,500

Gravel borrow	Cb.yd.	3500	\$20.00	\$70,000
Fine grading & compacting	Sq.yd.	20000	\$3.50	\$70,000
Drainage Structures	L.S.	1	\$30,000	\$30,000
Hydrant	L.S.	1	\$16,000	\$16,000
Bituminous concrete pavement	Ton	2650	\$75.00	\$198,750
Concrete curb	L.ft.	1800	\$28.00	\$50,400
Shade trees	Ea.	0	\$750.00	\$0
Parking lot lights	L.S.	1	\$200,000	\$200,000
Reflectorized traffic lines	L.S.	1	\$7,500	\$7,500
Contingency		10%	\$76,235	\$76,235
Land acquisition	L.S.	1		\$1,000,000
Subtotal				\$1,838,585

Total Probable Costs^[4] \$6,269,288

Notes:

- [1] Estimates based on rough area calculations; for planning purposes only, not for
- [2] Would likely require handling and removal/capping of contaminated soil.
- [3] Assumes widening to 3 lanes from Highland to Rte. 104, reconstruction of entire segment.
- [4] The following costs are not included (except where noted) and may be significant:
 - Land acquisition
 - Provision or relocation of utilities
 - Structural premiums
 - Automated rail crossing signal
 - Environmental cleanup
 - Cost escalation factors

Table 2. Tax Differential for the Purpose of Estimating Potential Bond Payments

	Property Value	Taxes
Mil rate = 11.3		
Current	\$ 419,100	\$ 4,736
Potential	\$ 50,100,000	\$ 566,130
Difference	\$ 49,680,900	\$ 561,394

**Table 3. Bond Issue Estimates for Infrastructure,
Without Garage**

**\$6,500,000 Total for Capital Projects
In one 30-year bond issue**

Bond	Rate	Interest	Principal	Payments
\$6,500,000	6.00%	\$390,000	\$216,667	\$606,667
\$6,283,333	6.00%	\$377,000	\$216,667	\$593,667
\$6,066,667	6.00%	\$364,000	\$216,667	\$580,667
\$5,850,000	6.00%	\$351,000	\$216,667	\$567,667
\$5,633,333	6.00%	\$338,000	\$216,667	\$554,667
\$5,416,667	6.00%	\$325,000	\$216,667	\$541,667
\$5,200,000	6.00%	\$312,000	\$216,667	\$528,667
\$4,983,333	6.00%	\$299,000	\$216,667	\$515,667
\$4,766,667	6.00%	\$286,000	\$216,667	\$502,667
\$4,550,000	6.00%	\$273,000	\$216,667	\$489,667
\$4,333,333	6.00%	\$260,000	\$216,667	\$476,667
\$4,116,667	6.00%	\$247,000	\$216,667	\$463,667
\$3,900,000	6.00%	\$234,000	\$216,667	\$450,667
\$3,683,333	6.00%	\$221,000	\$216,667	\$437,667
\$3,466,667	6.00%	\$208,000	\$216,667	\$424,667
\$3,250,000	6.00%	\$195,000	\$216,667	\$411,667
\$3,033,333	6.00%	\$182,000	\$216,667	\$398,667
\$2,816,667	6.00%	\$169,000	\$216,667	\$385,667
\$2,600,000	6.00%	\$156,000	\$216,667	\$372,667
\$2,383,333	6.00%	\$143,000	\$216,667	\$359,667
\$2,166,667	6.00%	\$130,000	\$216,667	\$346,667
\$1,950,000	6.00%	\$117,000	\$216,667	\$333,667
\$1,733,333	6.00%	\$104,000	\$216,667	\$320,667
\$1,516,667	6.00%	\$91,000	\$216,667	\$307,667
\$1,300,000	6.00%	\$78,000	\$216,667	\$294,667
\$1,083,333	6.00%	\$65,000	\$216,667	\$281,667
\$866,667	6.00%	\$52,000	\$216,667	\$268,667
\$650,000	6.00%	\$39,000	\$216,667	\$255,667
\$433,333	6.00%	\$26,000	\$216,667	\$242,667
\$216,667	6.00%	\$13,000	\$216,667	\$229,667
			Avg. Payment	\$411,667

**Table 4. Bond Issue Estimates for Infrastructure, Without Garage, With
TOD Grant Funds**

\$6,500,000 Total Capital Program
- \$2,000,000 from state in TOD Funds
\$4,500,000 Bond

In one 30-year bond issue

	Bond	Rate	Interest	Principal	Payments
\$	4,500,000	6.00%	\$270,000	\$150,000	\$420,000
	\$4,350,000	6.00%	\$261,000	\$150,000	\$411,000
	\$4,200,000	6.00%	\$252,000	\$150,000	\$402,000
	\$4,050,000	6.00%	\$243,000	\$150,000	\$393,000
	\$3,900,000	6.00%	\$234,000	\$150,000	\$384,000
	\$3,750,000	6.00%	\$225,000	\$150,000	\$375,000
	\$3,600,000	6.00%	\$216,000	\$150,000	\$366,000
	\$3,450,000	6.00%	\$207,000	\$150,000	\$357,000
	\$3,300,000	6.00%	\$198,000	\$150,000	\$348,000
	\$3,150,000	6.00%	\$189,000	\$150,000	\$339,000
	\$3,000,000	6.00%	\$180,000	\$150,000	\$330,000
	\$2,850,000	6.00%	\$171,000	\$150,000	\$321,000
	\$2,700,000	6.00%	\$162,000	\$150,000	\$312,000
	\$2,550,000	6.00%	\$153,000	\$150,000	\$303,000
	\$2,400,000	6.00%	\$144,000	\$150,000	\$294,000
	\$2,250,000	6.00%	\$135,000	\$150,000	\$285,000
	\$2,100,000	6.00%	\$126,000	\$150,000	\$276,000
	\$1,950,000	6.00%	\$117,000	\$150,000	\$267,000
	\$1,800,000	6.00%	\$108,000	\$150,000	\$258,000
	\$1,650,000	6.00%	\$99,000	\$150,000	\$249,000
	\$1,500,000	6.00%	\$90,000	\$150,000	\$240,000
	\$1,350,000	6.00%	\$81,000	\$150,000	\$231,000
	\$1,200,000	6.00%	\$72,000	\$150,000	\$222,000
	\$1,050,000	6.00%	\$63,000	\$150,000	\$213,000
	\$900,000	6.00%	\$54,000	\$150,000	\$204,000
	\$750,000	6.00%	\$45,000	\$150,000	\$195,000
	\$600,000	6.00%	\$36,000	\$150,000	\$186,000
	\$450,000	6.00%	\$27,000	\$150,000	\$177,000
	\$300,000	6.00%	\$18,000	\$150,000	\$168,000
	\$150,000	6.00%	\$9,000	\$150,000	\$159,000
				Avg. Payment	\$285,000

Appendix VI. Site Development Calculations

Table: SITE CAPACITY ANALYSIS

A. Total Build-Out

Property	Land area		Build-out allowance	
	Acres	Square feet	FAR = 0.25	FAR = 0.5
Foundry LLC	7.7	335,412	83,853	167,706
Former Cleveland Twist Drill	6.03	262,667	65,667	131,333
MBTA/Town	2	87,120	21,780	43,560
Rights Of Way 1.	1	43,560	10,890	21,780
Subarea totals	17	728,759	182,190	364,379
S/S Hatheway Patterson 2.	8	348,480	87,120	174,240
Combined area totals	25	1,077,239	269,310	538,619

B. Number of Units at FAR 0.25

Unit type	Avg. size of each unit	Total allowed by zoning	Total units possible	Units/acre
	[sf]	[sf]		
Condos				
Subarea	1200	182,190	152	9
Total		269,310	224	9
Apartments				
Subarea	950	182,190	192	11
Total		269,310	283	11

C. Number of Units at FAR 0.5

Unit type	Avg. size of each unit	Total allowed by zoning	Total units possible	Units/acre
	[sf]	[sf]		
Condos	1200	364,379	304	18
Apartments	950	364,379	384	23

D. Project Analysis

Subtotal Land Area	Garage Area	Land Remaining	No. Units FAR 0.25	No. Units FAR 0.5	Units/acre FAR 0.25	Units/acre FAR 0.5
[sf]	[sf]	[sf]				
728,759	110,000	618,759	141	281	8	17

Notes:

1 Rights Of Way are mapped streets

2 Southside of Hatheway Patterson is accessed from the south and is considered part of study area, but is considered set aside for open space.

Appendix VII. Updated Market Analyses

MEMORANDUM

To: Ken Buckland, the Cecil Group
From: Bonz and Company, Inc.
Re: Comparisons
Date: September 28, 2005

This memorandum follows an earlier memorandum dated December 5, 2004 regarding market conditions influencing development prospects on the Hatheway/Patterson site in Mansfield. This memorandum provides supplementary market findings and updates, and brief illustrative financial analyses to identify the types of development that are likely to offer supportable land uses.

In brief, the December 5 memo indicated that:

- Mansfield and neighboring Foxboro comprise a growing area with relatively high-end household income levels;
- Residential development represents the most promising use for the property; supportable developments might take the form of either condominiums – in either townhouse or mid-rise multi-family configurations – or rental apartments.
- Industrial uses do not offer a viable development option.

Additional findings at this time include the following:

- Among residential opportunities, the market has demonstrated demand for condominiums in townhouse configurations. Condominiums in multi-family mid-rise configurations may also offer opportunities, but the market for such dwelling units has more limited experience with price points and specific product types, and will most likely offer more limited depth.
- Rental Apartment projects may not offer sufficient levels of financial returns to merit new construction at this time. Mixed-income tax credit alternatives may help the situation, but would most likely require either a nonprofit developer or financial assistance in addition to tax credits. Notwithstanding these findings, given high-quality improvements on the Subject Site, over time the market is likely to offer rental apartment development opportunities.
- Retail may offer a small-scale opportunity, but not in the context of large-scale community or even neighborhood-scale shopping centers. The opportunity here will more likely appeal to businesses seeking access to highly localized markets in an urban downtown setting.

- The most promising vehicle for attracting small-scale retail development is to provide residential developments with small ground-floor commercial space. In this type of product, upper-story residential development could be either rental or condominium space.
- Commercial development components should target those areas closer to downtown. This would enable such developments to benefit from direct access to the rail station as well as downtown, which has gained new developments recently, and given an area with parking, may be able to support new businesses.

The following tables and annotations support the above findings.

Condominium Issues: Townhouses

Townhouses dominate the condominium market. In the communities of Attleboro, North Attleboro, Easton, Foxboro, Mansfield and Norton, from January 1, 2004 to September 8, 2005, the Multiple Listing Service reports 195 condominium sales at prices above \$225,000. Of these, 97.5 percent were described as townhouse, duplex or detached structures, with the majority of these in the "townhouse" category. Only six units were "mid-rise" units, which included an historic renovated unit, two "garden" style units, one unit at the Roosevelt in downtown Mansfield, and two units at the On Falls Pond project in North Attleboro. These latter projects comprise the only mid-rise projects in the area in recent years. The broker for On Falls Pond reports that his project offers townhouses with separate entries, as well as mid-rise units accessible via central entrances. This broker reports that the market exhibits a preference for units with separate entries, and shows resistance to the mid-rise/apartment styles.

Our research indicates that recently constructed townhouse condominiums in the area command prices in a range from approximately \$225,000 to over \$400,000 in some cases. Given Mansfield's income profiles (see Table 1), and assuming that a new development would incorporate site amenities and a beneficial integration with surrounding amenities, new units on the Subject Site should be able to command similar or higher price points.

Table 1 -- Wealth Indicators: Selected Communities

	<u>Median Household Income</u>	<u>Median Single-Family Sale Price</u>
Mansfield	\$74,876	\$437,200
Foxborough	\$78,973	\$395,000
Easton	\$79,664	\$407,500
Norton	\$72,476	\$340,000
Attleborough	<u>\$56,136</u>	\$314,200
North Attleborough	\$66,265	\$352,950

Source: The Warren Group; Geovue, Inc.

For townhouses on the Subject site, price points ranging from the low \$300,000s for small units to the low-mid \$400,000s would be reasonable and achievable.

Table 2 -- Illustrative Townhouse Sales Prices and Proceeds

<u>Market-Rate Units</u>	<u>Units</u>	<u>Sq. Ft.</u>	<u>Price/unit</u>	<u>Revenue</u>
2 BR small	14	1,250	\$325,000	\$4,550,000
Affordable @ 80% AMI	2	1,250	\$115,000	\$230,000
2 BR large	30	1,650	\$396,000	\$11,880,000
Affordable @ 80% AMI	3	1,650	\$130,000	\$390,000
2 BR large	14	2,000	\$440,000	\$6,160,000
Affordable @ 80% AMI	<u>2</u>	<u>2,000</u>	<u>\$150,000</u>	<u>\$300,000</u>
Totals	65	106,450		\$23,510,000
Brokerage/transaction cost	6.0%			\$1,410,600
Net Proceeds				\$22,099,400

Based on likely development costs, given a project with an 11 percent affordable component, developers would be able to derive attractive profits on their investments.

Table 3 – Illustrative Townhouse Cost Pro Forma and Developer Profit

<u>Hard Costs</u>		
Residential Construction	\$124 psf	(\$13,149,370)
Clubhouse/Amenities/landscape		(\$595,000)
Garages	65 garages	(\$411,840)
<u>Surface spaces</u>	<u>65 spaces</u>	<u>(\$78,000)</u>
Subtotal Hard Costs		(\$14,234,210)
<u>Soft Costs</u>		
Model Units/marketing		(\$250,000)
Taxes		(\$129,944)
Legal/acct'ing/permits		(\$300,000)
Contingency	8.00% hard & soft	(\$1,193,132)
Land	\$40,000 per du	(\$2,320,000)
TOTAL PROJECT COST		(\$18,427,287)
Net Revenues		\$22,099,400
Total Costs		(\$18,427,287)
Profit		\$3,672,113
		19.9%

Condominium Flats

The market for mid-rise condominium units is relatively untested. While the Roosevelt in downtown Mansfield has achieved a successful absorption at prices ranging from \$260,000 to \$280,000 (and a project planned on an adjacent site targets a slightly higher price range (e.g., \$300,000 to \$350,000), the development featured only seven units. The On Falls Pond project in North Attleborough reports that the market shows a preference for units with separate entries, and prices at this project occupy a lower range, from approximately \$180,000 to \$260,000.

Given the relatively greater uncertainties associated with this type of development, development would most likely proceed in smaller phases. The illustrative pro forma below shows a 44-unit prototype, which would most likely occupy three levels, possibly situated above ground-floor retail space. As shown, this product could generate attractive profits for developers.

Table 4 – Illustrative Pro Forma: Condominium Flats

<u>Market-Rate Units</u>	<u>Units</u>	<u>Sq. Ft.</u>	<u>Price/unit</u>	<u>Sales</u>
2 BR small	20	1,100	\$275,000	\$5,500,000
Affordable @ 80% AMI	2	1,100	\$130,000	\$260,000
2 BR large	19	1,450	\$333,500	\$6,336,500
Affordable @ 80% AMI	3	1,450	\$150,000	\$450,000
Totals	44	62,333	\$274,920	\$12,546,500
Brokerage/transaction cost	6.0%			\$752,790
Net Proceeds				\$11,793,710
<u>COSTS</u>				
<u>Hard Costs</u>				
Residential Construction	\$111 psf		(\$6,900,662)	
Clubhouse/Amenities			(\$350,000)	
Parking spaces	\$1,200 per space		(\$84,480)	
Subtotal Hard Costs			(\$7,335,142)	
<u>Soft Costs</u>				
Model Units/marketing			(\$150,000)	
Taxes			(\$69,347)	
Legal/acct'ing/permits			(\$300,000)	
Subtotal Soft Costs			(\$519,347)	
Contingency	8.00% hard & soft		(\$628,359)	
Land	\$35,000 per unit		(\$1,365,000)	
TOTAL PROJECT COST			(\$9,847,848)	
Net Revenues			\$11,793,710	
Profit			\$1,945,862	
			19.8%	

Rental Apartments:

Apartments offer slightly less promising opportunities. While condominium prices have risen dramatically in recent years, apartment rents have not kept pace. Prevailing market-rate rents at high-quality properties approximate \$1300 for one-bedroom and \$1500 for two-bedroom units, which amount to just \$1.40 to \$1.60 per square foot. Recently built high-quality projects in Walpole and Raynham charge rents in these ranges.

At currently prevailing low capitalization rates, a rental development may be feasible. As shown in the following tables, an illustrative 100-unit apartment project with 11 affordable units could generate roughly \$17.35 million in value. Applying reasonable

cost estimates, total costs would amount to \$15.2 million, leaving a residual profit of \$2.15 million, or 14 percent. This profit margin will vary as capitalization rates, mortgage rates, rental conditions, and site conditions change. While rental apartments might currently offer less attractive development opportunities than condominiums, over time this type of project is likely to offer viable opportunities on the Subject site.

Table 5 – Illustrative Rental Apartment Pro Forma

MIXED-INCOME RENTAL APT. PRO FORMA				Opening Year	Stabilization Year
<u>Market-Rate Units</u>	<u>Units</u>	<u>Sq. Ft.</u>	<u>Monthly Rent</u>	<u>1</u>	<u>2</u>
1 BR	45	850	\$1,360	\$734,400	\$756,432
Affordable @ 80% AMI	5	850	\$690	\$41,400	\$42,642
2 BR	44	1,050	\$1,470	\$776,160	\$799,445
<u>Affordable @ 80% AMI</u>	<u>6</u>	<u>1,050</u>	<u>\$828</u>	<u>\$59,616</u>	<u>\$61,404</u>
Totals	100	950	\$1,259	\$1,611,576	\$1,659,923
Subtotal Other Revenues				\$75,000	\$77,250
Gross Potential Income				\$1,686,576	\$1,737,173
<u>Less 5% vacancy/collection</u>				<u>5%</u>	<u>50% in yr. 1</u>
Effective Gross Income				\$843,288	(\$86,859)
<u>Operating Expenses</u>				<u>per unit stabilized</u>	
Maintenance/Repair	1.25	psf gross	\$1,431	\$138,889	\$143,056
Common Area Utilities			\$155	\$15,000	\$15,450
Insurance			\$300	\$30,000	\$30,900
R.E. Taxes	0.01176	rate	\$1,999	\$199,920	\$199,920
Management Fee	4.0%	EGI	\$660	\$33,732	\$66,013
Administration	\$1,250	per unit	\$1,288	\$125,000	\$128,750
<u>Replacement Reserve</u>	\$250	per unit	<u>\$250</u>	<u>\$25,000</u>	<u>\$25,000</u>
Subtotal			\$6,082	\$567,540	\$609,088
Net Operating Income				\$275,748	\$1,041,226
Value, Capitalized at				6.00%	\$17,353,775

<u>COSTS</u>		
Building Construction	\$104 psf	(\$10,958,501)
Amenities		(\$300,000)
Subtotal Hard Costs		(\$11,258,501)
Marketing/leaseup	2,000 per mkt du	(\$178,000)
Lease-up reserve		(\$591,941)
Taxes		(\$102,040)
Legal/acc'ting/permits		(\$300,000)
Subtotal Soft Costs		(\$1,171,981)
Land Cost	\$20,000 /mkt-rate du	(\$1,780,000)
Contingency	8.00% hard & soft	(\$994,439)
Total Costs		(\$15,204,921)
Total Value		\$17,353,775
PROFIT		\$2,148,854 14.1%

Commercial Development Outlooks:

Retail development outlooks are characterized by the following:

- No opportunity for shopping center scale of development: the market for regional malls and community shopping centers appears to be adequately served, with an additional large-scale (e.g., 500,000 square feet) shopping center proposed for development. Given the Subject Site's location away from major highways, this niche offers little if any development opportunity in the foreseeable future.
- Despite the lack of opportunity for shopping center developments, some local market niches appear to be underserved. A sample of these is shown below. While stores in many of these niches will seek locations in anchored shopping centers, some (e.g., coffee shops, independent specialty retailers, quick-serve restaurants) may seek locations in downtown areas. Recent and planned developments in downtown Mansfield include new condominiums, rental apartments and a small number of ground-floor retailers: this may signal the emergence of a trend that will enable the area to attract additional businesses. Given the reported low-end quality of the downtown's existing space (along with its perceived parking shortage), new high-quality retail space with reserved parking would be able to attract new or relocating tenants from within the region.

Table 6 – Detail of Market Capture Rates in Selected Miscellaneous Subcategories

<u>Subcategory</u>	<u>Spending/ Household</u>	<u>Total Spending</u>	<u>Sales</u>	<u>Market Capture</u>
Sewing/Craft	30.82	\$433,514	\$200,000	46.1%
Sporting Goods	319.11	\$4,488,601	\$2,000,000	44.6%
Books	211.17	\$2,970,317	\$100,000	3.4%
Jewelry	183.27	\$2,577,876	\$400,000	15.5%
Hobby/Toy/Game	154.52	\$2,173,478	\$100,000	4.6%
Florists	29.75	\$418,464	\$2,000,000	477.9%
Record/Tape/CD	112.33	\$1,580,034	\$3,200,000	202.5%
Liquor	234.50	\$3,298,477	\$4,700,000	142.5%
Drug	709.34	\$9,977,576	\$10,000,000	100.2%

Source: Claritas, Inc.; Geovue, Inc.; Bonz and Company, Inc.

The market does not offer substantial opportunities for general office development. While the greater Boston area office market has improved in recent years, Spaulding & Slye¹ reports that leased (non-owner-occupied) office buildings still maintain a 20.9 percent availability rate.

Within this regional context, the 495/South submarket is the smallest submarket for office space -- with a total inventory of just 2.2 million square feet, as compared to 10.4 million square feet in the next-smallest submarket. While the availability rate is only 12.9 percent in this submarket, the area is dominated by industrial uses, and does offer a preferred location for office development. Moreover, in the immediate area, as of Winter 2005, Spaulding & Slye reported space availability at 33.1 percent in Mansfield, and 30.4 percent in Foxborough.

Medical offices may offer a relatively strong office market niche. Preliminary research has revealed only two medical (excluding dental) office buildings in Mansfield, and as the town continues to grow, it may be able to support additional physicians' offices. Despite this potential, it should be noted that two nearby hospitals (Sturdy and Caritas Norwood) serve Mansfield, and spokespersons report that they are not likely to expand

¹ As of mid-year 2005. Figures shown below for Mansfield and Foxborough are as of year-end 2004, the most recent reporting date for individual towns.

their existing (Mansfield and Foxborough) satellite clinical facilities in the near future. Moreover, while demand for medical office space does offer a potential for supportable development, such developments will most likely proceed in small-scale (e.g., less than 15,000 square foot) increments.

Overall, medical and other small office tenants (e.g., insurance agents, real estate agents, tax preparers) may seek high-quality commercial space in streetfront locations, the market is not likely to support projects with substantial (e.g., more than 30,000 square feet) amounts of general or medical office space.

MEMORANDUM

To: Ken Buckland, the Cecil Group
From: Bonz and Company, Inc.
Re: Affordable Housing Variations
Date: October 14, 2005

This memorandum supplements an earlier memo, dated September 28, 2005, which presented market findings and illustrative financial analyses to identify the types of development that are likely to offer supportable land uses in the portions of the Hatheway parcel around the Mansfield commuter rail station. This memorandum presents the impacts of affordable housing requirements on the financial returns generated by supportable market-rate housing projects.

Assuming an 11 percent affordable component, developer returns would be substantially reduced for each of the supportable prototypical residential development programs. These profit reductions are attributable to lower revenues. Soft costs and land costs are slightly lower for the mixed-income prototypes (due to lower costs for taxes, marketing, land, etc.), these cost savings do not compensate for the projected revenue losses.

As shown, and consistent with the preceding memo, the condominium/townhouse development program would offer the highest returns at this time and in the near-term future. The relatively strong prospects for this type of development are driven by market conditions and depth as well as the cost savings involved in constructing relatively small (4-12 unit) buildings. Given an affordable housing component, however, developer returns on the project would fall from 20.4 percent to 12.3 percent.

Market-rate condominium flats and rental programs offer less attractive returns to developers; under affordable scenarios, profits for these types of developments fall to 7.8 percent and 7.7 percent, respectively.

Summary Comparisons of Market-Rate vs. Mixed-Income Development Scenarios

Type Housing	Rental		Condominium Townhouse		Condominium Flats	
	Market-Rate	W/Affordable	Market-Rate	W/Affordable	Market-Rate	W/Affordable
Total Units	100	100	65	65	44	44
Affordable	0	11	0	7	0	5
Gross Potential Revenue	\$1,826,190	\$1,737,173	n/a	n/a	n/a	n/a
NOI	\$1,109,900	\$1,041,226	n/a	n/a	n/a	n/a
Project Value	\$18,498,329	\$17,353,775	\$22,532,975	\$20,691,750	\$12,883,640	\$12,052,680
Total Costs	(\$16,426,289)	(\$16,118,369)	(\$18,710,041)	(\$18,418,348)	(\$11,365,043)	(\$11,184,766)
Hard	(\$11,258,501)	(\$11,258,501)	(\$14,234,210)	(\$14,234,210)	(\$8,188,033)	(\$8,188,033)
Soft	(\$1,951,026)	(\$1,885,915)	(\$682,494)	(\$671,667)	(\$909,229)	(\$904,343)
Land	(\$2,000,000)	(\$1,780,000)	(\$2,600,000)	(\$2,320,000)	(\$1,540,000)	(\$1,365,000)
Other	(\$1,216,762)	(\$1,193,953)	(\$1,193,336)	(\$1,192,470)	(\$727,781)	(\$727,390)
Profit	\$2,072,040	\$1,235,406	\$3,822,934	\$2,273,402	\$1,518,597	\$2,273,402
%	12.6%	7.7%	20.4%	12.3%	13.4%	7.8%

Where developer returns fall below approximately 15 percent, public entities may need to provide various forms of assistance. Such public measures may involve property tax relief, assistance with financing terms, assistance with public/private amenities (e.g., shared parking facilities), and other such measures.

It should also be noted that the table presents a conceptual, comparative summary. Where site conditions and local market conditions improve, where "catalyst" developments improve the local environment, or where the quality of new developments justify higher prices and/or lease rates, increased revenue streams will enhance financial returns.

More detailed illustrative pro formas are shown below.

SELECTED TABLES

Mixed-Income Condominium Townhouse Pro Forma

<u>Market-Rate Units</u>	<u>Units</u>	<u>Sq. Ft.</u>	<u>Price/unit</u>	<u>Revenue</u>
2 BR small	14	1,250	\$312,500	\$4,375,000
Affordable @ 80% AMI	2	1,250	\$115,000	\$230,000
2 BR large	30	1,650	\$371,250	\$11,137,500
Affordable @ 80% AMI	3	1,650	\$130,000	\$390,000
2 BR large	14	2,000	\$420,000	\$5,880,000
Affordable @ 80% AMI	2	2,000	\$150,000	\$300,000
Totals	65	106,450		\$22,012,500
 Brokerage/transaction cost	 6.0%			 \$1,320,750
 Net Proceeds				 \$20,691,750
 <u>COSTS</u>				
<u>Hard Costs</u>				
Residential Construction	\$124	psf	(\$13,149,370)	
Clubhouse/Amenities/landscape			(\$595,000)	
Garages	65	garages	(\$411,840)	
<u>Surface spaces</u>	<u>65</u>	<u>spaces</u>	<u>(\$78,000)</u>	
Subtotal Hard Costs			(\$14,234,210)	
 <u>Soft Costs</u>				
Model Units/marketing			(\$250,000)	
Taxes			(\$121,667)	
Legal/acc'ting/permits			(\$300,000)	
 Contingency	 8.00%	 hard & soft	 (\$1,192,470)	
 Land	 \$40,000	 per du	 (\$2,320,000)	
 TOTAL PROJECT COST			 (\$18,418,348)	
 Net Revenues			 \$20,691,750	
Total Costs			(\$18,418,348)	
 Profit			 \$2,273,402	
			12.3%	

Illustrative Condominium Flats Pro Forma

<u>Market-Rate Units</u>	<u>Units</u>	<u>Sq. Ft.</u>	<u>Price/unit</u>	<u>Sales</u>
2 BR small	20	1,100	\$275,000	\$5,500,000
Affordable @ 80% AMI	2	1,100	\$130,000	\$260,000
2 BR large	19	1,450	\$348,000	\$6,612,000
Affordable @ 80% AMI	3	1,450	\$150,000	\$450,000
Totals	44	62,333	\$275,273	\$12,822,000
Brokerage/transaction cost	6.0%			\$769,320
Net Proceeds				\$12,052,680
<u>COSTS</u>				
<u>Hard Costs</u>				
Residential Construction	\$124	psf	(\$7,753,553)	
Clubhouse/Amenities			(\$350,000)	
Parking spaces	\$1,200	per space	(\$84,480)	
Subtotal Hard Costs			(\$8,188,033)	
<u>Soft Costs</u>				
Model Units/marketing			(\$150,000)	
Taxes			(\$70,870)	
Legal/acc'ting/permits			(\$300,000)	
Post-construction carry costs			\$0	
Construction interest	6.5%	APR	(\$301,593)	
Bank/Financing	1.00%	loan	(\$81,880)	
Subtotal Soft Costs			(\$904,343)	
Contingency	8.00%	hard & soft	(\$727,390)	
Land	\$35,000	per unit	(\$1,365,000)	
TOTAL PROJECT COST			(\$11,184,766)	
Net Revenues			\$12,052,680	
Profit			\$867,914	
			7.8%	

MIXED-INCOME RENTAL APT. PRO FORMA

				Opening Year 1	Stabilization Year 2
<u>Market-Rate Units</u>	<u>Units</u>	<u>Sq. Ft.</u>	<u>Monthly Rent</u>		
1 BR	45	850	\$1,360	\$734,400	\$756,432
Affordable @ 80% AMI	5	850	\$690	\$41,400	\$42,642
2 BR	44	1,050	\$1,470	\$776,160	\$799,445
<u>Affordable @ 80% AMI</u>	<u>6</u>	<u>1,050</u>	<u>\$828</u>	<u>\$59,616</u>	<u>\$61,404</u>
Totals	100	950	\$1,259	\$1,611,576	\$1,659,923
Subtotal Other Revenues				\$75,000	\$77,250
Gross Potential Income				\$1,686,576	\$1,737,173
<u>Less 5% vacancy/collection</u>	<u>5%</u>	<u>50% in yr. 1</u>		<u>(\$843,288)</u>	<u>(\$86,859)</u>
Effective Gross Income				\$843,288	\$1,650,315
<u>Operating Expenses</u>			<u>per unit stabilized</u>		
Maintenance/Repair	1.25	psf gross	\$1,431	\$138,889	\$143,056
Common Area Utilities			\$155	\$15,000	\$15,450
Insurance			\$300	\$30,000	\$30,900
R.E. Taxes	0.01176	rate	\$1,999	\$199,920	\$199,920
Management Fee	4.0%	EGI	\$660	\$33,732	\$66,013
Administration	\$1,250	per unit	\$1,288	\$125,000	\$128,750
<u>Replacement Reserve</u>	<u>\$250</u>	<u>per unit</u>	<u>\$250</u>	<u>\$25,000</u>	<u>\$25,000</u>
Subtotal			\$6,082	\$567,540	\$609,088
Net Operating Income				\$275,748	\$1,041,226
Loan Amount			(\$10,767,185)		
Debt Service at Private Rate	7.00%			(\$867,689)	(\$867,689)
Cash Flow				(\$591,941)	\$173,538
<u>COSTS</u>					
Building Construction	\$104	psf	(\$10,958,501)		
<u>Amenities</u>			<u>(\$300,000)</u>		
Subtotal Hard Costs			(\$11,258,501)		
Marketing/leaseup	2,000	per mkt du	(\$178,000)		
Lease-up reserve			(\$591,941)		
Taxes			(\$102,040)		
Legal/acct'ing/permits			(\$300,000)		
Construction interest	6.50%	APR	(\$579,344)		
<u>Bank/Financing</u>	<u>1.25%</u>	<u>loan</u>	<u>(\$134,590)</u>		
Subtotal Soft Costs			(\$1,885,915)		
Land Cost	\$20,000	/mkt-rate du	(\$1,780,000)		
Contingency	8.00%	hard & soft	(\$1,193,953)		
Total Costs			(\$16,118,369)		
Total Value			\$17,353,775		
PROFIT			\$1,235,406		
			7.7%		

Appendix VIII. Parking Garage Analysis

TECHNICAL MEMORANDUM

MANSFIELD TOD GARAGE



WALKER
PARKING CONSULTANTS

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DATE: October 4, 2005
WHO: Kenneth Buckland, Principal
COMPANY: The Cecil Group
ADDRESS: 31 St. James Avenue
CITY/STATE: Boston, MA 02116

BY: Andrew Hill
PROJECT NAME: Mansfield TOD Study
PROJECT NUMBER: 16-1789.00
SUBJECT: Conceptual Financial Analysis

Walker Parking Consultants
20 Park Plaza, Suite 1111
Boston, MA 02116

Voice: 617.350.5040
Fax: 617.350.5048
www.walkerparking.com

This technical memorandum serves as a draft report on conceptual fiscal projections for the proposed facility.

BASE ASSUMPTIONS

The subject of this analysis is a proposed 1,200 space parking garage located in Mansfield, MA. This facility would replace the existing surface lots currently used to serve daily MBTA commuters, provide new parking for users associated with other new land use brought forth in the development and supplement parking for the Mansfield central business district. For this analysis, Walker assumed exclusive use of the full-capacity of the garage by MBTA riders.

MARKET CONDITIONS AND RATES

The Mansfield MBTA station is part of the Providence Commuter Rail line. The line originates in downtown Providence (RI) and terminates at South Station in downtown Boston. Other stations along the Providence lines include Providence, South Attleboro, Attleboro and Sharon. The railway serves both MBTA and Amtrak trains and has parking to accommodate up to 806 vehicles. Occupancy counts, performed in April 2005 as part of another engagement, indicate that parking serving MBTA commuters at Mansfield Station regularly fills to or above capacity. The station has excellent access to both Interstate 495 and 95, two major highways connecting communities through Southern Massachusetts.

In April 2005, Walker inventoried every MBTA Station served by commuter rail as part of a separate engagement, collecting data on parking capacity, typical weekday occupancy, parking rates, frequency of rail service, travel time between each station and line terminus (South Station), and cost of fare. Walker isolated four commuter rail lines – Franklin, Providence, Stoughton, and Middleborough/Lakeville – that served communities around Mansfield. From these four lines, Walker identified nine stations that offered comparable parking rates, frequency of service, time to terminus, transit fares and access to highways to that offered at Mansfield. Comparison of Mansfield Station to all MBTA stations in southern Massachusetts and all comparable stations is presented as Table 1 on the following page.

TECHNICAL MEMORANDUM
MANSFIELD TOD GARAGE



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Table 1: Market Survey - MBTA Stations in Southern Massachusetts

STATION	COMMUTER RAIL LINE	CAPACITY	OCCUPANCY	UTILIZATION	RATE	TRAINS/DAY	PEAK HEADWAY	OFF-PEAK HEADWAY	TIME TO TERMINUS	ONE-WAY FARE	MONTHLY PASS
Forge Park/1495	Franklin	716	638	89%	\$2.00	16	38	99	65	\$5.25	\$181.00
Franklin	Franklin	173	179	103%	\$2.00	16	38	99	58	\$5.25	\$181.00
Norfolk	Franklin	530	532	100%	\$2.00	14	38	101	51	\$4.50	\$170.00
Walpole	Franklin	364	363	100%	\$2.00	18	32	99	45	\$4.50	\$149.00
Plimptonville	Franklin	5	1	20%	\$2.00	1	N/A	N/A	42	\$4.50	\$149.00
Norwood Central	Franklin	782	756	97%	\$2.00	19	29	89	36	\$4.50	\$149.00
Norwood Depot	Franklin	227	218	96%	\$2.00	12	38	142	33	\$3.75	\$128.00
Islington	Franklin	39	30	77%	\$2.00	13	38	118	30	\$3.75	\$128.00
Deatham Corp Cir	Franklin	492	446	91%	\$2.00	19	29	89	27	\$3.75	\$128.00
Endicott	Franklin	48	48	100%	N/A	13	38	118	23	\$3.50	\$118.00
Providence	Providence	330	330	100%	\$8.50	12	41	119	68	\$6.00	\$198.00
South Attleboro	Providence	567	583	103%	\$2.00	15	33	103	58	\$5.50	\$191.00
Attleboro	Providence	780	791	101%	\$2.00	16	32	103	48	\$5.50	\$191.00
Mansfield	Providence	806	818	101%	\$2.00	17	27	103	40	\$5.25	\$181.00
Sharon	Providence	542	491	91%	\$2.00	16	32	102	32	\$4.50	\$149.00
Stoughton	Stoughton	457	444	97%	\$2.00	15	40	85	34	\$4.50	\$149.00
Canton Center	Stoughton	215	214	100%	\$2.00	11	40	91	27	\$3.75	\$128.00
Canton Junction	Providence/ Stoughton	764	759	99%	\$2.00	27	23	53	25	\$3.75	\$128.00
Route 128	Providence/ Stoughton	2,589	1,147	44%	\$3.00	30	19	49	20	\$3.50	\$118.00
Hyde Park	Providence/ Stoughton	121	121	100%	\$2.00	23	22	66	16	\$3.25	\$106.00
Middleboro/Lakeville	Middleborough/Lakeville	853	571	67%	\$2.00	12	40	94	56	\$6.00	\$198.00
Bridgewater	Middleborough/Lakeville	497	329	66%	\$2.00	12	40	94	45	\$5.25	\$181.00
Campello	Middleborough/Lakeville	546	417	76%	\$2.00	12	40	94	38	\$5.00	\$170.00
Brockton	Middleborough/Lakeville	100	104	104%	\$1.00	12	40	94	34	\$4.50	\$149.00
Montello	Middleborough/Lakeville	425	373	88%	\$2.00	12	40	94	31	\$4.50	\$149.00
Holbrook/Randolph	Middleborough/Lakeville	362	319	88%	\$2.00	12	40	94	26	\$3.75	\$128.00
LOW		5	1	20%	\$1.00	1	19	49	16	\$3.25	\$106.00
MEDIAN		475	395	83%	\$2.00	15	38	94	35	\$4.50	\$149.00
HIGH		2,589	1,147	44%	\$8.50	30	41	142	68	\$6.00	\$198.00
COMP. AVERAGE		572	517	90%	\$2.65	15	36	100	50	\$5.30	\$180.00

☐ = COMPARABLES

TECHNICAL MEMORANDUM

MANSFIELD TOD GARAGE



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As the table shows, with the exception of the garage at Providence Station, all comparable lots are priced at \$2.00 per day. This was the base rate assumed for the proposed structure upon opening. Walker assumed that rates would increase in \$0.25 increments every three years to keep pace with inflation.

UTILIZATION AND GROWTH

Mansfield Station has a moderate competitive advantage relative to the average of comparables, with superior service (17 trains/day versus 15 trains/day) and better than average peak hour headways and time to terminus. Walker believes this would allow the station to capture a greater number of parkers from other comparable stations, if parking capacity was increased. Walker assumed the proposed facility would open at 75% of total capacity on weekdays, growing demand by 5% annually through a combination of local expansion and capture from comparable facilities by merit of superior amenities, rail service and highway connections. Walker assumed stabilization in the eighth year of operation at 110% of capacity, projecting that 10% of the facility's capacity will serve more than one user each day. Walker assumed 250 operating weekdays per year.

Evening and weekend utilization is likely to be limited, as commuter rail service is less frequent after 6 PM weekdays and on Saturdays and Sundays. Any evening demand from weekdays was factored as part of weekday activity, with evening use contributing to turnover beyond the facility's capacity at stabilization. Weekend demand was assumed to be roughly 10% of total facility capacity, increasing by 1% annually for growth through the first ten years of operation. Walker assumed 100 operating weekend days per year.

The station is also part of a rail network connecting downtown Boston and Providence with Gillette Stadium in Foxborough, MA on the dates when the New England Patriots play home games. Mansfield is the last station stop for trains originating out of Providence bound for Foxborough Station and offers superior access to both Interstate 495 and Interstate 95 relative to other stations and parking in and around Gillette Stadium. Walker assumed the proposed facility would fill to 50% of its capacity on games days at opening, increasing by 5% annually each year through the first ten years of operation. Walker assumed 11 home games per year (two exhibitions and nine regular games).

Walker incorporated rate and utilization recommendations into a revenue model for the proposed garage. Revenues were projected according to the following formula:

$$\text{CAPACITY} \times \text{RAMPING FACTOR} = \text{USERS} \times \text{RATE} \times \text{OPERATING DAYS/YEAR} = \text{ANNUAL REVENUES}$$

Revenue projections are shown in Table 2 on the following page.

Table 2: Revenue Model and Projections

YEAR OF OPERATION:	Base	2006	1	2	2008	2	2009	3	2010	4	2011	5	2012	6	2013	7	2014	8	2015	9	2016
Weekdays																					
User:	1,200	900	960	1,020	1,080	1,140	1,200	1,260	1,320	1,320	1,320	1,320	1,320	1,320	1,320	1,320	1,320	1,320	1,320	1,320	1,320
Ramping Factor: ⁽¹⁾		75%	80%	85%	90%	95%	100%	105%	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%
Operating Days: ⁽²⁾		250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Rate: ⁽³⁾		\$2.00	\$2.00	\$2.00	\$2.00	\$2.25	\$2.25	\$2.25	\$2.25	\$2.25	\$2.25	\$2.25	\$2.25	\$2.25	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.75
Revenues:		\$450,000	\$480,000	\$510,000	\$607,500	\$641,250	\$675,000	\$787,500	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000	\$825,000	\$907,500
Turnover: ⁽⁴⁾		0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Weekends																					
User:	1,200	120	132	144	156	168	180	192	204	216	216	216	216	216	216	216	216	216	216	216	228
Ramping Factor: ⁽⁵⁾		10%	11%	12%	13%	14%	15%	16%	17%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	19%
Operating Days: ⁽⁶⁾		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Rate: ⁽³⁾		\$2.00	\$2.00	\$2.00	\$2.25	\$2.25	\$2.25	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.75
Revenues:		\$24,000	\$26,400	\$28,800	\$35,100	\$37,800	\$40,500	\$48,000	\$51,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	\$62,700
Patriot's Games																					
User:	1,200	600	660	720	780	840	900	960	1,020	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,140
Ramping Factor: ⁽⁷⁾		50%	55%	60%	65%	70%	75%	80%	85%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	95%
Operating Days: ⁽⁸⁾		11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Rate: ⁽³⁾		\$2.00	\$2.00	\$2.00	\$2.25	\$2.25	\$2.25	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.75
Revenues:		\$13,200	\$14,520	\$15,840	\$19,305	\$20,790	\$22,275	\$26,400	\$28,050	\$29,700	\$29,700	\$29,700	\$29,700	\$29,700	\$29,700	\$29,700	\$29,700	\$29,700	\$29,700	\$29,700	\$34,485
TOTAL GROSS PARKING REVENUES		\$487,200	\$520,920	\$554,640	\$661,905	\$699,840	\$737,775	\$861,900	\$904,050	\$908,700	\$1,004,685										

Notes:

1. Weekday utilization assumes 75% of capacity (base) in Year 1, ramping by 5% annually through stabilization at 110% of capacity in Year 8.
2. Assumes 250 operating weekdays/year credited to national holidays and snow emergencies.)
3. Rates set against comparable stations at opening, increasing by roughly 10% (\$.025) every three years against inflation.
4. Turnover is calculated as Total Daily Vehicles divided by Facility Capacity. Maximum potential turnover (i.e. stabilization) = 1.10/day.
5. Weekend utilization assumes 10% of capacity (base) in Year 1, ramping by 1% annually thereafter.
6. Assumes 100 operating weekdays/year. (4 weekend days/year credited to national holidays and snow emergencies.)
7. Game day utilization assumes 50% of capacity (base) in Year 1, ramping by 5% annually thereafter.
8. Assumes two weeknight exhibition games at Gillette Stadium and nine regular season home games annually.

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STAFFING

Walker assumed this facility would be served by a central cashier station located at a central point between the parking facility and the MBTA platform. This is the most efficient and effective operating configuration for the proposed structure, transferring an queues for ticket processing from the entry or exit lanes of the garage to a secondary pedestrian location.

Based on the size of the facility, Walker assumed one cashier would be needed on shift in the morning hours (5:30 AM – 12:00 PM), two in the afternoon (11:30 PM – 6:00 PM) and two in the evening (5:30 PM – 12:00 AM) during weekdays. On weekends, Walker assumed one attendant per 6.5 hour shift.

Walker assumed this facility would be managed and maintained under the existing MBTA contract with Central Parking Systems. Due to the size of the facility, Walker assumed one full-time maintenance worker, but budgeted only 10% of the total overhead associated with a manager and bookkeeper, as the facility is likely to be part of regional cluster under the supervision of an area manager.

Pay rates and other compensation factors were developed from data taken from the Bureau of Labor Statistics specific to the Boston CMSA. Walker projected total annual labor costs to be roughly \$136,000 for the proposed facility at opening.

Table 3: Labor Cost Calculations

POSITION	SHIFT DAYS	WAGE TYPE	# FTE's	PAY RATE *	HRS/ WK	WORKER'S				
						ANNUAL SALARY	TAXES *	BENEFITS *	COMP *	UNIFORMS *
General Manager	Mon - Fri	Exempt	0.1	\$ 41,500 /Year	55.0	\$ 4,150	\$ 633	\$ 220	\$ 114	\$ 62
Bookkeeper	Mon - Fri	Non - Exempt	0.1	\$ 10.00 /Hour	40.0	\$ 2,080	\$ 317	\$ 110	\$ 57	\$ 31
Maintenance Worker	Mon - Fri	Non - Exempt	1.0	\$ 9.25 /Hour	40.0	\$ 19,240	\$ 2,934	\$ 1,020	\$ 529	\$ 289
Weekday Attendants	Mon - Fri	Non - Exempt	5.0	\$ 8.00 /Hour	32.5	\$ 67,600	\$ 10,309	\$ 3,583	\$ 1,859	\$ 1,014
Weekend Attendants	Sat - Sun	Non - Exempt	3.0	\$ 8.00 /Hour	13.0	\$ 16,224	\$ 2,474	\$ 860	\$ 446	\$ 243
TOTAL						\$109,294	\$ 16,667	\$ 5,793	\$ 3,005	\$ 1,639

* Source: Bureau of Labor Statistics - Wage and Compensation Data for the Boston CMSA

Labor costs account for roughly 28% of total operating costs for the proposed structure in the first year of operation and add roughly \$114 per space in annual overhead to the operation.

OTHER EXPENSES

Costs associated with non-labor expenses were developed through review of historical operating statements from other MBTA facilities and similar facilities. This review allowed Walker to develop cost per unit ratios for common line items for application to the proposed structure. These line items included:

- *Management fees* paid to a commercial operator (Central Parking Systems) to run and maintain the facility.

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- Security costs paid to MBTA Police to provide oversight and monitoring of the facility.
- Utilities such as electricity for lights and signs, water and sewer.
- Insurance premium and payment made by the operator to repair minor auto damage.
- Operating supplies such as tickets, pass cards and office staples.
- Marketing/advertising expenses for promoting the facility to MBTA commuters.
- Equipment expense including spare parts and service contracts for elevator maintenance and PARCS equipment work.
- Contract services such as sweeping, power washing, snow removal, auditing, and armored car service.
- General repair and maintenance costs for routine upkeep.
- Allocations to a sinking fund against major periodic repair and replacement.

Table 4: Other Operating Expenses

LINE ITEM	COST/UNIT	ANNUAL COST
Management Fee	\$ 14.70 /space	\$17,640
Security	\$ 64.30 /space	\$77,160
Utilities	\$ 40.20 /space	\$48,240
Insurance	\$ 22.60 /space	\$27,120
Auto Damage	\$ 2.10 /space	\$2,520
Supplies	\$ 6.15 /space	\$7,380
Postage	\$ 0.50 /space	\$600
Marketing/Advertising	\$ 3.50 /space	\$4,200
Equipment Expense	\$ 5.25 /space	\$6,300
Snow Removal	\$ 4.70 /space	\$5,640
Sweeping/Power Washing	\$ 5.35 /space	\$6,420
Auditing/Financial Services	\$ 3.90 /space	\$4,680
Courier/Armored Car	\$ 0.70 /space	\$840
Repairs & Maintenance	\$ 47.50 /space	\$57,000
Sinking Fund	\$ 75.00 /space	\$90,000
Miscellaneous	\$ 2.10 /space	\$2,520
TOTAL EXPENSES	\$ 298.55 /space	\$358,260

Other operating costs account for roughly 72% of total operating costs for the proposed structure in the first year of operation and add roughly \$299 per space in annual overhead to the operation.

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PROJECT COST AND DEBT SERVICE

Walker developed a cost estimate on the proposed structure based on an assumed (hard) cost per space of \$17,500. Walker divided allocation of this hard cost between land acquisition, labor and materials, site work and a contingency fund according to allocations observed in similar projects. Walker assumed a total square footage based on an assumed efficiency per space of 350 square feet (sf) per stall, resulting in a facility of 1,200 spaces and 420,000 sf. Total project hard costs were \$21 million.

Soft costs were calculated based on Walker's experience with similar projects and including items such as financing fees for bond issuance, legal services, architectural and engineering services, survey and permit costs, and a construction contingency fund. Walker projected total soft costs to be roughly \$5.3 million. Total project cost was projected to be roughly \$26.3 million or \$21,917 per space.

Table 5: Project Cost Estimate

HARD COSTS:	COST/ SF	COST/SPACE	TOTAL
Land Aquisition	3.63	1,271	1,525,000
Labor & Materials	36.90	12,917	15,500,000
Site Work	2.86	1,000	1,200,000
Hard Cost Contingency	6.61	2,313	2,775,000
Subtotal	\$ 50.00	\$ 17,500	\$ 21,000,000
SOFT COSTS:			
Financing Fees	1.56	546	655,000
Legal	0.88	308	370,000
Architectural & Engineering	1.25	438	525,000
Appraisal / Market Study	0.20	71	85,000
Accounting and Cost Certification	0.12	42	50,000
Survey and Permits	0.08	29	35,000
Construction Monitoring/Management	0.83	292	350,000
Developer Fee	1.55	542	650,000
Soft Cost Contingency	6.14	2,150	2,580,000
Subtotal	\$ 12.62	\$ 4,417	\$ 5,300,000
TOTAL PROJECT COST	\$ 62.62	\$ 21,917	\$ 26,300,000

Walker assumed a financing term of 30 years at 6.75%, paid monthly. This rendered a total annual debt service obligation of approximately \$2,046,980.

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FISCAL PROJECTIONS

Due to the size of the proposed structure and associated costs dictated by that, combined with the low rates commanded by MBTA facilities and lack of substantial turnover, the proposed structure is projected to operate at sustained loss through the first decade. The enterprise will generate adequate revenues to offset operating expenses after the first year of operation, but will not be able to meet annual debt service obligations. In point of fact, the most the enterprise can hope to contribute against annual debt service is roughly 17% of the total obligation and not until the tenth year of operation.

Total operating shortfalls through the first decade are roughly \$18.8 million or \$1.88 million per year, as shown in the operating statement on the following page.

Walker performed a brief sensitivity analysis and found that the MBTA would have to absorb roughly 95% of the total project cost (\$25 million) for the project to meet annual operation expenses and debt service based on the assumed parking rates. If the MBTA were to increase parking rates to \$3.00 per day at the outset, the absorption factor is reduced to 90% of total project cost (\$23 million). Walker did not any additional scenarios, as the market is unlikely to bear any price increases above \$3/day.

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Table 6: Conceptual Pro Forma Operating Statement

YEAR OF OPERATION:	1	2	3	4	5	6	7	8	9	10
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
REVENUES										
<i>Weekdays</i>										
User:	900	960	1,020	1,080	1,140	1,200	1,260	1,284	1,308	1,320
Ramping Factor:	75%	80%	85%	90%	95%	100%	105%	107%	109%	110%
Operating Days:	250	250	250	250	250	250	250	250	250	250
Rate:	\$2.00	\$2.00	\$2.00	\$2.25	\$2.25	\$2.25	\$2.50	\$2.50	\$2.50	\$2.75
Revenues:	\$450,000	\$480,000	\$510,000	\$607,500	\$641,250	\$675,000	\$787,500	\$802,500	\$817,500	\$907,500
<i>Weekends</i>										
User:	120	132	144	156	168	180	192	204	216	228
Ramping Factor:	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%
Operating Days:	100	100	100	100	100	100	100	100	100	100
Rate:	\$2.00	\$2.00	\$2.00	\$2.25	\$2.25	\$2.25	\$2.50	\$2.50	\$2.50	\$2.75
Revenues:	\$24,000	\$26,400	\$28,800	\$35,100	\$37,800	\$40,500	\$48,000	\$51,000	\$54,000	\$62,700
<i>Patriot's Games</i>										
User:	600	624	648	672	696	720	744	768	792	816
Ramping Factor:	50%	52%	54%	56%	58%	60%	62%	64%	66%	68%
Operating Days:	11	11	11	11	11	11	11	11	11	11
Rate:	\$2.00	\$2.00	\$2.00	\$2.25	\$2.25	\$2.25	\$2.50	\$2.50	\$2.50	\$2.75
Revenues:	\$13,200	\$13,728	\$14,256	\$16,632	\$17,226	\$17,820	\$20,460	\$21,120	\$21,780	\$24,684
TOTAL GROSS REVENUES	\$487,200	\$520,128	\$553,056	\$659,232	\$696,276	\$733,320	\$855,960	\$874,620	\$893,280	\$994,884
(Rev/Space)	\$406	\$433	\$461	\$549	\$580	\$611	\$713	\$729	\$744	\$829
INFLATION:	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
OPERATING EXPENSES:										
Payroll	109,290	112,570	115,950	119,430	123,010	126,700	130,500	134,420	138,450	142,600
Payroll Taxes	16,670	17,170	17,690	18,220	18,770	19,330	19,910	20,510	21,130	21,760
Benefits	5,790	5,960	6,140	6,320	6,510	6,710	6,910	7,120	7,330	7,550
Worker's Comp	3,010	3,100	3,190	3,290	3,390	3,490	3,590	3,700	3,810	3,920
Uniforms	1,640	1,690	1,740	1,790	1,840	1,900	1,960	2,020	2,080	2,140
Management Fee	17,640	18,170	18,720	19,280	19,860	20,460	21,070	21,700	22,350	23,020
Security	77,160	79,470	81,850	84,310	86,840	89,450	92,130	94,890	97,740	100,670
Utilities	48,240	49,690	51,180	52,720	54,300	55,930	57,610	59,340	61,120	62,950
Insurance	27,120	27,930	28,770	29,630	30,520	31,440	32,380	33,350	34,350	35,380
Auto Damage	2,520	2,600	2,680	2,760	2,840	2,930	3,020	3,110	3,200	3,300
Supplies	7,380	7,600	7,830	8,060	8,300	8,550	8,810	9,070	9,340	9,620
Postage	600	620	640	660	680	700	720	740	760	780
Marketing/Advertising	4,200	4,330	4,460	4,590	4,730	4,870	5,020	5,170	5,330	5,490
Equipment Expense	6,300	6,490	6,680	6,880	7,090	7,300	7,520	7,750	7,980	8,220
Snow Removal	5,640	5,810	5,980	6,160	6,340	6,530	6,730	6,930	7,140	7,350
Sweeping/PW	6,420	6,610	6,810	7,010	7,220	7,440	7,660	7,890	8,130	8,370
Auditing/Financial Svcs	4,680	4,820	4,960	5,110	5,260	5,420	5,580	5,750	5,920	6,100
Courier/Armored Car	840	870	900	930	960	990	1,020	1,050	1,080	1,110
Repairs & Maintenance	57,000	58,710	60,470	62,280	64,150	66,070	68,050	70,090	72,190	74,360
Sinking Fund	90,000	92,700	95,480	98,340	101,290	104,330	107,460	110,680	114,000	117,420
Miscellaneous	2,520	2,600	2,680	2,760	2,840	2,930	3,020	3,110	3,200	3,300
TOTAL OPERATING EXPENSES	\$ 494,660	\$ 509,510	\$ 524,800	\$ 540,530	\$ 556,740	\$ 573,470	\$ 590,670	\$ 608,390	\$ 626,630	\$ 645,410
(Exp/Space)	\$ 412	\$ 425	\$ 437	\$ 450	\$ 464	\$ 478	\$ 492	\$ 507	\$ 522	\$ 538
NET OPERATING INCOME	\$ (7,460)	\$ 10,618	\$ 28,256	\$ 118,702	\$ 139,536	\$ 159,850	\$ 265,290	\$ 266,230	\$ 266,650	\$ 349,474
(NOI/Space)	\$ (6)	\$ 9	\$ 24	\$ 99	\$ 116	\$ 133	\$ 221	\$ 222	\$ 222	\$ 291
DEBT SERVICE	\$ 2,046,980									
NET CASH FLOW	\$ (2,054,440)	\$ (2,036,362)	\$ (2,018,724)	\$ (1,928,278)	\$ (1,907,444)	\$ (1,887,130)	\$ (1,781,690)	\$ (1,780,750)	\$ (1,780,330)	\$ (1,697,506)
(Coverage Ratio)	0.00	0.01	0.01	0.06	0.07	0.08	0.13	0.13	0.13	0.17

Appendix IX. Route 106 Layout Plans

