

# REDISCOVERING NEEDHAM

*A VISION FOR THE FUTURE  
OF DOWNTOWN*



**MIT**

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## **EXECUTIVE SUMMARY**

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On the surface, Needham does not seem to be particularly different from many suburban New England towns. Total land area, political structure, and general demographics are all relatively standard. But, as any resident knows, Needham *is* a special place that deserves the opportunity to become extraordinary. In order to truly discover, and ultimately enhance, the unique characteristics of Needham, it is necessary to look far beyond the surface. Where do people gather? Where, and how, do they conduct their business? How do people physically move throughout the town? Can everyone that wants to live in Needham afford such a privilege? A thorough consideration of these and similar questions is crucial when developing a vision for Needham Center, the core of town activity. By understanding what Needham Center *is*, we are closer to an understanding of what Needham Center *can be*. The resultant vision, while innovative and forward-thinking, is grounded in tradition and the everyday needs of Needham.

Historically, the town common has served as the civic, social, economic, and cultural heart of many New England towns. Needham's town common is no different from others in this respect: it has served and continues to serve as an important symbolic and physical center to the town. All the major streets of the study site—Great Plain Avenue, Chapel Street, Highland Avenue, Chestnut Street, and Dedham Avenue—lead to the Common. Flanked by the landmark Town Hall building, Needham's Common is situated at both the physical and civic center of the Town, but does not reflect its prominence in either its design or its programming. By improving the design features of the Common and developing a vigorous programming schedule, this space could begin to realize the potential of its auspicious positioning, and once again become a central focus of the Town in general, and the downtown business district in particular.

There is little activity in the Business District outside of the 9-5 workday. Some restaurants and salons operate in the evenings. Very few businesses are open on Sundays in Needham. The Town Center, at the heart of our study area, is a unique place with significant potential for greater activity. Teenagers are looking for after school, weekend, evening activities. Families are looking for cultural events to which they'll bring their children. Adults would

like more local entertainment for when they leave the kids at home. One shouldn't have to go to Newton, Wellesley, or even Boston; all of these opportunities can exist in Needham. In fact, services such as an evening coffee shop or bar, a performing arts center, or music store for teens—essentially informal and formal entertainment—help create a sense of community in Needham. Located in the heart of the Town Center, they create a sense of place. Providing active uses for residents entices them to visit the Town Center more and thus use the existing businesses.

Business development in the downtown is key to revitalizing the Common and the streets leading into this civic heart. The economic analysis is thus important for its impact on the sustainability and feasibility of our project; the right businesses draw people to the Town Center creating a need for the other physical recommendations made in this plan. Needham has a spending power of around one billion dollars; historically most of these dollars are not spent in Needham. Market analysis recommends several sectors where Needham should market and encourage development; these include apparel and accessories and restaurants. More detailed analysis shows how Needham can benefit from investment into the recommended sectors. Finally, recommendations for potential financial sources for the investment will give the Town the tools to market these areas.

A thriving business district needs people. Though Needham's residents use the downtown, housing there would increase the activity, throughout the day, evenings, and weekends. As an affluent community, which has a median income 90% greater than that of the Commonwealth, Needham has little housing stock for those earning a low to moderate income, typically defined as 80% or below of the area's median income. The educational services, convenient location, and overall atmosphere are among the many aspects that contribute to the affluence of the community. While this affluence appeals to many, it also makes home ownership difficult for some, as indicated by the steady increase of housing sales over the last decade. As a result, owning a home in Needham is currently a privilege of the wealthy. Those who cannot afford to live in Needham include: Needham children who are starting their careers; the teachers who educate Needham youth; firefighters who ensure Needham's safety; and many more. Clearly, the Town of Needham must be proactive and implement a strategy that will afford housing to a wider range of the socio-economic spectrum.

Needham's convenient location along a direct commuter rail link to Boston creates opportunity for more transit oriented development. Both Needham Center and Needham Junction, two of the three Needham stations, are located within our study area. A project at either of these stations could incorporate residential units, perhaps mitigating the town-wide affordable housing shortage discussed above. Residents of such units could have ready access to Boston while enjoying the amenities of downtown. A project that takes a more mixed-use approach could also include commercial and community components, thus creating a more vibrant live-work-play environment that could be enjoyed the entire Needham community. Of course, any plans for development at either station must take area parking constraints into consideration. Although each development will be designed for maximum walkability, existing region-wide land use patterns will mean that at least a portion of visitors will still rely upon automobiles. Innovative methods will be required to ensure that these vehicles are accommodated as efficiently as possible.

With a highly-visible location and a substantial traffic flow, the intersection of Highland Avenue, Chapel Street, and May Street (the Northern Gateway) functions as an important gateway from the north into our site area. Unfortunately, in its current configuration the intersection leaves a great deal to be desired. Today, the Northern Gateway is a vast swath of asphalt that is confusing to drivers, unappealing to pedestrians, and presents those entering Needham center with a poor first impression. Many of these weaknesses could be eliminated by transforming the current signalized intersection into a roundabout. When properly-designed, roundabouts offer advantages of efficiency, safety, and clarity over more traditional intersections. Simple, elegant, and attractive, a Northern Gateway roundabout could efficiently and safely welcome visitors to Needham Center.

Regardless of the final intersection configuration, converting a major intersection like the Northern Gateway into a roundabout would be a major task, requiring considerable planning and financial resources. If Needham is to proceed down this path, the Town needs to undertake a more detailed traffic and engineering study, an interactive planning process that engages abutting land owners, and inquiries into the availability of future Intermodal Surface Transportation Efficiency Act (ISTEA) funding.



# 1. INTRODUCTION

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## 1.1 Study Area

This plan addresses a Study Area (shown in Figure 1.1a) selected by the Town of Needham, encompassing the Chestnut Street Business District (CSB) and the Central Business District (CBD). This area is the civic heart of Needham, containing the Town Common and the Town Hall as well as numerous business services.

## 1.2 Objectives

In keeping with the scope of work for this project, this plan will be prepared as:

“a ‘guidance document’ to encourage and promote planning efforts in Needham Center. The Plan is intended to engage the Town, including its municipal officials, citizens, business interests, property owners, and, where appropriate, federal and state transportation agencies, in a focused and prioritized planning effort to improve the downtown area.”

## 1.3 Document Structure

Section 2 details the existing conditions within the study area, as well as an analysis of our findings. Section 3 provides recommendations for improvement of various aspects of Needham Center, incorporating a range of options that can be adopted either in part or in full. Section 4 presents strategies for both planning and funding the elements of this vision. Finally, Section 5 explains our final conclusions.

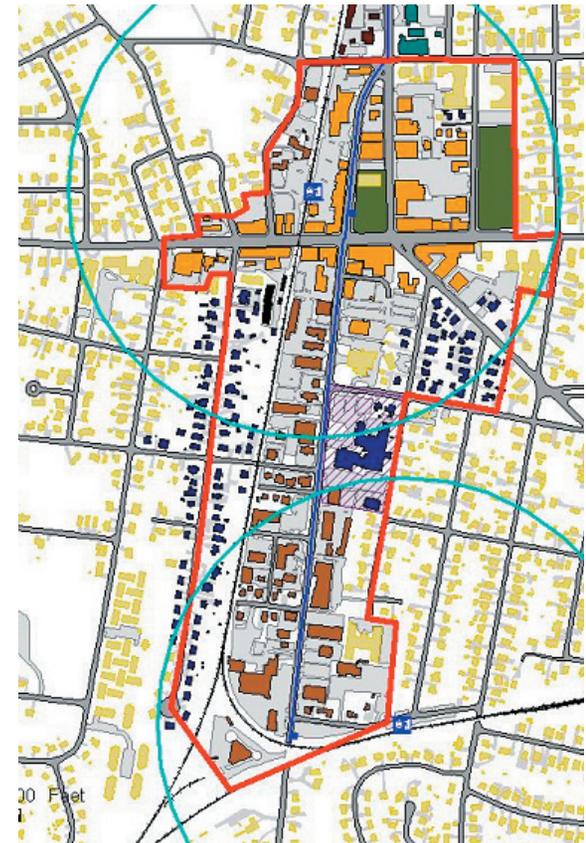


Figure 1.1  
Study area



## 2. ANALYSIS & FINDINGS

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### 2.1 Demographics

Located 10 miles southwest of downtown Boston, Needham is part of Boston’s Metropolitan Regional Planning Area, bordered by Wellesley on the west and northwest, Newton on the north and northeast, the West Roxbury section of Boston on the east, Dedham on the southeast and south, and Westwood and Dover on the south.. Needham is nearly 13 square miles in area, with a population of just under 29,000<sup>1</sup> and a population density of 2,185 per square mile.<sup>2</sup> One-quarter of Needham’s residents are under 19 years of age and one-sixth are at least 65. The Town is primarily a mid- to upper-class residential community, with a median household income (MHI) that has increased 46% over the past decade, from \$60,000 in 1990 to \$88,000 in 2000. Over this same time period, the number of Needham residents earning under \$25,000 decreased by 3%.<sup>3</sup> 76% of Needham residents live in single family housing.<sup>4</sup>

### 2.2 Physical form

From a retail and commercial standpoint, one of the greatest assets of Needham Center is its automobile traffic – thousands of cars filled with potential customers that pass by local businesses during their daily commute. Yet, this traffic is a mixed blessing, creating a congested environment that is often uninviting and unsafe for pedestrians. Great Plain Avenue is particularly pedestrian-unfriendly, with vast, forbidding crosswalks of about 60 feet—enough distance to allow for two parking lanes and four lanes of surprisingly high-speed traffic. Crossing distances are even longer at the intersection of Great Plain and Highland Avenue, which has a diagonal crosswalk that extends 70 feet (as shown in Figure 2.2a).

The challenge of crossing the street is further aggravated by the timing sequence of the traffic lights along Great Plain at the intersections of Chestnut Street and Highland Avenue. In contrast to typical crossing signal timings, which allow pedestrians to cross the street



Figure 2.2a

at the same time as parallel automobile traffic, each of these intersections consolidates all pedestrian crossings into a single short “all-or-nothing” interval during which all traffic is stopped. This interval occurs infrequently, leading to delays of up to ten minutes for pedestrians waiting to cross the street.



Figure 2.2b  
Narrow, cluttered sidewalks are common in Needham’s downtown.



Figure 2.2c  
Some parts of Needham are more attractively scaled.

The current crosswalk configuration at the corner of Great Plain Avenue, Highland Street and Dedham Avenue is particularly frustrating for pedestrians. The unique geometry of the intersection results in extremely long crosswalks, some of which are difficult or impossible to cross within the limited time period designated by the existing traffic signal patterns. This configuration leads to a high incidence of jaywalking, as pedestrians take the (significantly shorter) direct route across Great Plain rather than wait for the long and intimidating diagonal crossing at the corner. The combination of the expansive intersection, unconventional crosswalk, and ad-hoc pedestrian crossings also make this intersection confusing and dangerous for automobile traffic.

Additionally, much of the frontage along the Great Plain Avenue sidewalk is short enough to have little mitigating effect on the scale of the roadway. Chestnut Street suffers from a similar problem, although the roadway is narrower. Deep, inconsistent setbacks and a lack of pedestrian-scaled elements, such as street trees, create a sense of exposure and width that is inconsistent with pedestrian comfort.

This picture typifies much of the street environment in the study area (see Figure 2.2b). Street signs clutter the already narrow sidewalk, no trees or awning shelter pedestrians. In other areas, the sidewalk disappears altogether. Low, one-story buildings fail to frame the street and, combined with deep setbacks and wide roads, contribute to a landscape that says not “this is a place for people” but rather says “this is a place for cars”. In addition to the uncomfortable pedestrian environment, a number of elements also contribute to an unsafe pedestrian environment, particularly at street crossings.

Throughout the downtown area, narrow sidewalks, the lack of street trees, and low-rise development all contribute to the uncomfortable walking environment. A few blocks—the northeastern block of Great Plain Avenue past Highland Street and Highland Street across

from the Common—stand out as exceptions to the area’s character. These blocks are examples of the desired downtown pedestrian environment as shown in Figure 2.2c.

### 2.3 Key locations

This particular plan focuses on enhancing the community by concentrating on a number of areas that have inherent potential for improvement. More specifically, this plan is grounded in - four specific locations: the Town Common, the Northern Gateway (intersection of May, Highland, and Chapel Streets), a few empty parcels near the Common (discussed in Section 2.5), and Needham Junction (discussed in Section 2.4). These locations have been identified as significant Town resources based on location, function, and potential to serve as catalysts for improvement.

#### Town Common

Needham Common is an attractive, park-like space accented by beautiful, mature hardwood trees, charming sculpture, and attractive benches and walkways. (See Figure 2.3a) Leading to the center of the rectangular area, the walkways terminate in a small circular gathering space. The general configuration of the pathways is excellent; they draw people to the center of the space from all corners and from the front door of Town Hall. Unfortunately, the pathways themselves do not create the visibility the Common—the *Center*—truly deserves.

At various points around the outside edge of the Common, particularly along the western and southern borders, the view into the Common is blocked by vegetation and street furnishings. On the south side, a semi-circular cutout with benches is framed by a low wall and tall hedges, which are fronted on one side by full sized telephone booths. (See Figure 2.3b) To the west, the Common is hidden by a bus shelter and additional hedges, which hide a traffic control box. (See Figure 2.3c) A parking strip further divides the Common from its surroundings by impeding visual and physical access from the front steps of Town Hall. (See Figure 2.3d)



Figure 2.3a  
Needham Common



Figure 2.3b  
The south border of Needham Common.



Figure 2.3c  
The west border of Needham Common.



Figure 2.3d  
The north border of Needham Common.



Figure 2.3e

Formal activities in the Common appear to be limited. Although the space is popular during nice weather for strolling and socializing, there is little sign of any formal programming of the space. While the Needham website indicates town-wide community activities, none appear to be scheduled in the Common. If some activities are programmed, they are not marketed aggressively enough to be obvious to the casual observer.

### Gateway

Significant portions of Needham Center’s resident and commuter traffic enter our site area via Highland Avenue, which—due to its interchange on I-95—serves as a major commuter artery. The magnitude of this traffic flow places a considerable burden upon certain key Highland Avenue intersections. With a highly-visible location and a substantial traffic flow, the intersection of Highland Avenue, Chapel Street, and May Street (henceforth referred to as the Northern Gateway) functions as an important entry from the north into our site area. Unfortunately, in its current configuration the intersection leaves a great deal to be desired. Figure 2.3e shows the intersection as it is today – a vast swath of asphalt that is confusing to drivers, unappealing to pedestrians, and presents those entering Needham center with a poor first impression

## 2.4 Transportation

The major roads leading to the Town Center—Chestnut Street, Highland Avenue, Chapel Street, and Great Plain Avenue—are highly traveled by Needham residents as well as those passing through along Great Plain Avenue (also State Route 135). The area is served by two of Needham’s three MBTA commuter rail stations—Needham Junction and Needham Center—which provide convenient access to Boston; however, the location of one station in the Town Center puts a strain on parking resources.

When considering the potential for transit oriented development (TOD) in the study area, it is important to understand the unique relationship that the Town has with existing transit facilities. Of particular interest are the two commuter line stations at Needham

Center and Needham Junction. It is crucial to recognize that Needham is, in many ways, a typical suburban town that relies heavily upon motorized vehicles for mobility. Current town-wide land use patterns indicate that this will not change for some time. A car-free town is clearly an unrealistic goal. However, rather than view transit negatively as an infeasible alternative to a primarily auto-oriented lifestyle, it should be seen as a way to complement and enhance life in Needham.

Unlike many suburban towns throughout the country, Needham is unique in that transit already plays a significant role in many residents' lives. Most towns and cities have to struggle just to establish political and financial support for any form of transit. In Needham, the investment and commitment has already been made. Furthermore, ridership figures indicate that the commuter line is perceived as a viable means of traveling to Boston. (See Figure 2.4a) for a chart illustrating passenger flows) Nationwide, one of the arguments against fixed transit infrastructure is the trend towards more suburb to suburb commutes (versus the more traditional suburb to Town commutes). However, Needham is relatively unique in that a quarter of all Needham residents make the daily commute to Boston, thus representing a sizable potential market for existing commuter services.

The issue of parking is a major concern for many Needham Center stakeholders. Although the Center has the potential for becoming more pedestrian-oriented, most visitors will still rely upon vehicles to actually reach it. The challenge is to satisfy the parking needs of future Needham Center visitors and residents while ensuring that parking is not a dominant feature of the landscape. An examination of parking lot area coverage indicates that

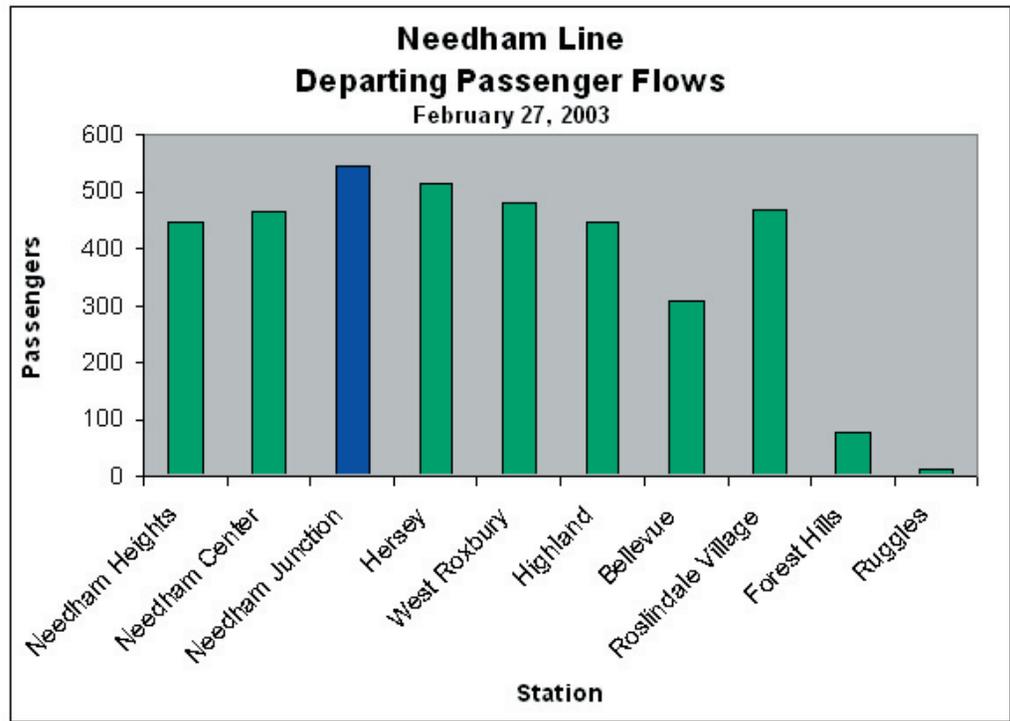


Figure 2.4a



Figure 2.4b

approximately 30% of the land within a 600 foot radius of Town Hall is dedicated to parking (this estimate includes both the Eaton and Chapel Street lots). A graphical representation of this area is shown in Figure 2.4b (with parking marked in gray and buildings indicated in pink). The problem is not too little space dedicated to parking; it is that space is often used inefficiently. Figure 2.4c shows one example of inefficient use of parking area in Needham Center. If parking could be managed more wisely and efficiently, much of this land could be put to more productive use.

## 2.5 Housing

According to the 2003 Needham Housing Study and 2000 U.S. Census data, nearly one-third of Needham's households are likely to be income-eligible for affordable housing. Such statistics are based on the fact that these households meet less than 80% of area median income.<sup>5</sup> Median household income earners in Needham cannot technically afford the median house price, which was \$422,000 in 2000 but now is roughly \$555,000 for single family homes and \$367,000 for condominiums.<sup>6</sup>

According to the 2000 US Census, Needham's housing characteristics are as follows:

- Roughly 10,800 housing units.
- The median sales price for single family homes was \$422,000 and has continued to increase steadily. (see Figure 2.5a).
- The median sales price for condominiums was \$219,000 (also shown in Figure 2.5a).
- The median sales price for single family homes in Massachusetts was \$185,700.

Additionally, the following characteristics have been found:

- Approximately 42 single family homes have been constructed since 2000. This development has primarily been the construction of single-family homes in the \$900,000 to \$1,000,000 price range.



*Image courtesy of Ulla Hester*

Figure 2.4c

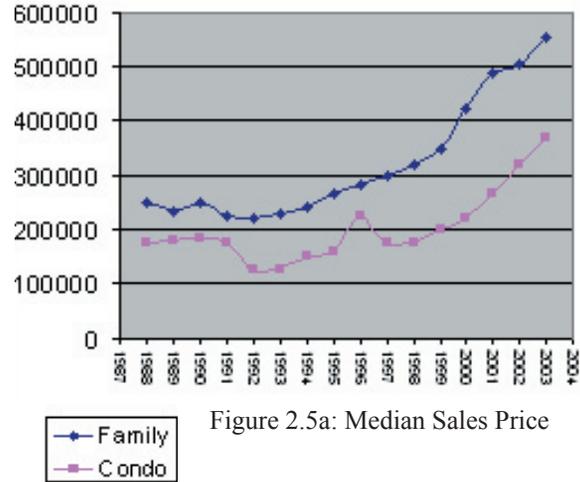


Figure 2.5a: Median Sales Price

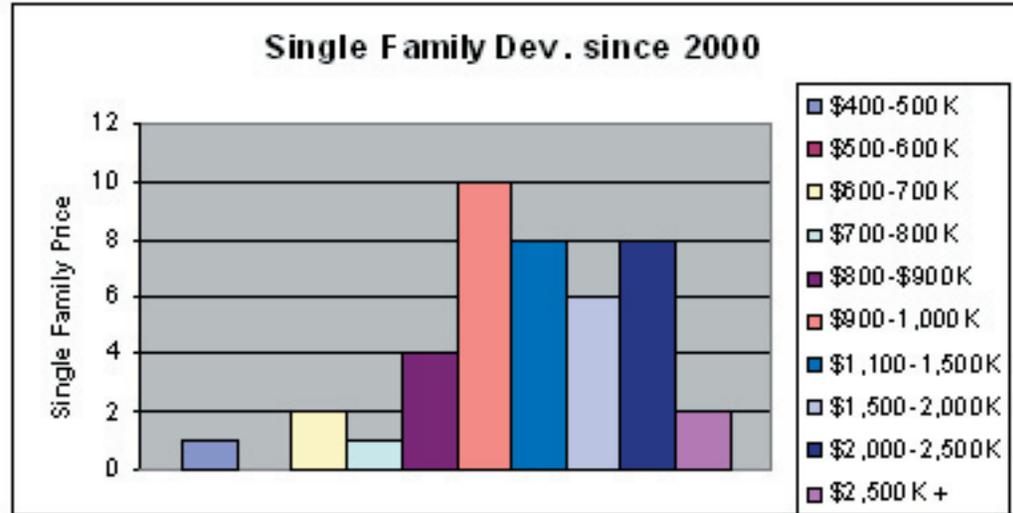


Figure 2.5b

- Approximately 17 condominium units have been constructed since 2000 and 47% have been in the \$400,000 to \$500,000 price range.
- Only 3.6% of the housing stock is considered affordable.

Although the Town of Needham boasts a variety of housing styles, the vast majority of homes are single-family detached units. The need for more affordable housing is increasingly apparent. Development under Massachusetts Chapter 40B, although limited thus far, is inevitable. Developers realize the potential of the relaxed permitting process and have already shown strong interest in initiating 40B projects in Needham. It is important for the Town to recognize this and work with the developers to craft high quality projects that can be a source of pride for all. Of course, the statistics enumerated above provide another, equally compelling reason for affordable housing development. With significant increases in median home prices, fewer mid-income households can afford residency in Needham. Development of less expensive housing can provide real options for educators, public safety personnel, and other vital town professionals that should be able to live within the community they serve.

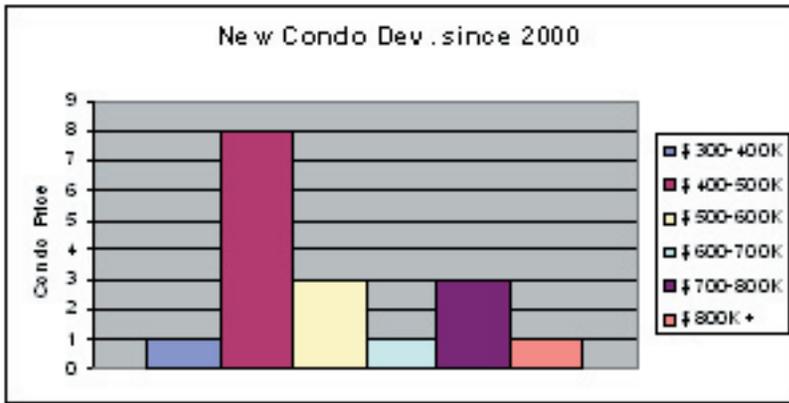


Figure 2.5c

Most recent housing development has been located well beyond the Town Center and has generally targeted wealthier households. Figures 2.5b and 2.5c show the housing development that has occurred since 2000.<sup>7</sup> One of the barriers to the construction of more affordable housing is that development location is often a point of contention. Stakeholders may support affordable housing on an abstract level, but can become strong opponents when actual sites are considered. However, recent discussions with Needham residents have indicated that Needham Center could be a more publicly appealing location for new affordable housing.

In addition to potential political support, affordable housing in the vicinity of Needham Center would also benefit from greater access to downtown services and facilities. Despite these arguments for affordable housing development near the Center, a number of barriers currently prevent such development from occurring.

Current zoning regulations only allow development of new structures in the Center Business (CBD) and Chestnut Street Districts (CSD) that adhere to a maximum floor area ratio (FAR.) of 1.0 and 0.7, respectively. In other words, a new development in the CBD can only consist of the same amount of occupied area as the area of the lot that the structure sits on. Likewise, a new building in the (CSD) district can consist of only 70% of the area of land upon which it sits. Furthermore, one off-street parking space is required for every 300sf of retail space and 1.5 spaces are required for each dwelling unit in a multi-family structure. Additionally, the current Needham Zoning By-Law requires that, when seeking a special permit for a major development, a developer must provide an elaborate set of supportive study documents. As a result, development in Needham is inherently unappealing to many.

Removal of some of these barriers could create added value for Needham Center. Currently, there are specific land parcels that are either under-utilized and or are used inefficiently.

These properties include:

- (1) The site of the old movie theatre near the corner of Great Plain and Highland Avenues. At present, all that remains is a gravel lot enclosed by fencing.
- (2) The tract of land on Chapel Street immediately north of the Chapel Street Artisan Shop. Another gravel lot, this space is occasionally used as supplementary parking by employees of nearby stores.
- (3) A collection of parcels along Junction Street, all of which are within walking distance of the Needham Junction rail station. These include the site of a former gas station, a cluster of inefficient parking lots, and two privately owned properties (at least one of which is already for sale).

While there are other potential redevelopment sites throughout the study area, there are three areas that seem to present the greatest promise. A more detailed examination of development strategies will be discussed in Section 3.5.

## 2.6 Local Economy

As part of the initial analysis, the team conducted a business survey of the key corridors within the study area. The breakdown of commercial space in the downtown is shown in Figure 2.6a. Notice that food, FIRE<sup>8</sup>, and personal services account for over half of the business operations located in the study area indicating that Needham Center is highly service-oriented. Most of the businesses in the Town Center—insurance agencies, medical offices, salons, flower shops, gift stores—are directed towards the local residents only. Needham has very little competitive retail establishments, such as apparel and accessory stores. The premise of competitive retail is consumer choice; consumers are more likely to go where there is greater choice. This concept explains the success of nearby malls, which draw suburban shoppers with a breadth of options. Though Needham residents have expressed a desire for different apparel stores that

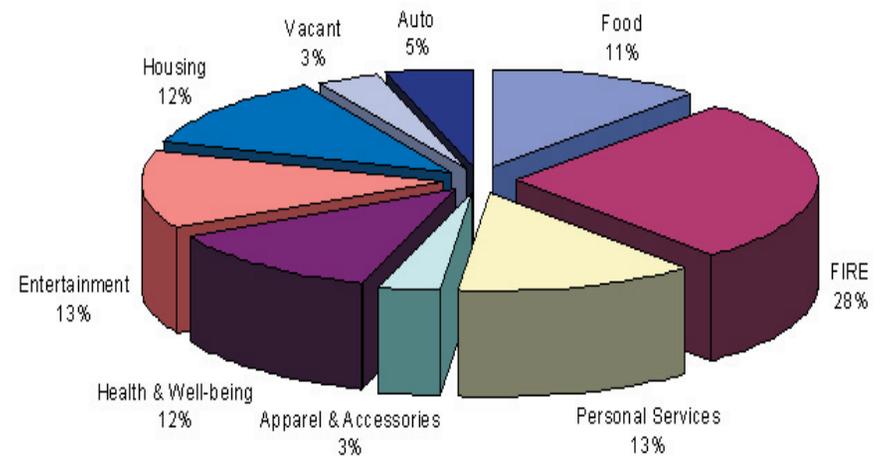


Figure 2.6a

serve the distinct populations in Needham (the elderly, women, men, and children), these may be slow to obtain. The current lack of competition provides little incentive for these types of establishments.

Needham has a strong existing business stock; only 3% of property in the study area is vacant. The uses in the Town Center are a mix of service establishments, such as Laundromats and dry cleaners, hair, and nail salons, and niche establishments, including antique stores and collectibles. However, the competitive retail supply could be stronger. Our conversations with Needham residents support this; in interviews and public forums residents have indicated a strong desire for more competitive business types, such as apparel, book, and music stores. It is most likely that small, local businesses and niche operators would open businesses in Needham Center; but not large corporate retail stores. Currently, Needham Center is filled with unique businesses; this gives it character. It can be argued that large chain stores are not appropriate for Needham.

Needham residents also expressed interest in entertainment uses; many expressed chagrin that the movie theater had closed. Though residents suggested reviving the Town Theater, that task is difficult (see Section 3.2 for a possible solution). There are few businesses open after 6:00pm and very little open on Sundays. Residents also remarked that there is little for young adults to do locally in the evenings. Desired uses in the Town Center also include: coffee shops that provide late night service, even sporadically; and, music, book, or game stores that attract teens on weekends and early evenings.

<i>Rank</i>	<i>Retail Type</i>
1	Food away from Home
2	Apparel
2	Gas & Motor Oil (w/ above)
4	Household Operations
5	Food at Home

Figure 2.6b  
Retail Gap Analysis

### **Retail Gap Analysis**

Needham residents have a purchasing power of over one billion dollars; of this income, 75% or \$838,000,000 is spent as disposable income.<sup>9</sup> In 1992, only about \$200,000,000, or 1/4 of today's spending potential, was spent in Needham.<sup>10</sup> This indicates that Needham residents are spending most of their money outside of town. In order to be a service-oriented downtown serving its own residents, Needham needs to capture more of this \$600,000,000 spending gap. Supplementing the numbers above with qualitative data collected from personal communications resulted in the retail gap analysis provided in

Figure 2.6b. Briefly, the retail gap stands for the difference between Needham residents' purchasing power (or disposable income) and the amount spent in Needham businesses.

We must consider two things in this analysis: (1) Expenditure data for other sectors including entertainment, education, housing, health care, and recreation, was not included in the Chamber of Commerce 1992 report. (2) The expenditure report is from 1992; much has changed since then. For these two reasons, personal experience and professional selectivity are important supplemental means of analysis.

### **Input-output Analysis**

According to input-output theory, retail sectors have different ratios of input (or the money required for initial investment) to output (benefit). The input-output ratio for one sector also varies according to geographic area. This input-output ratio provides an idea of the potential economic benefit of the potential investment on different sectors, which can in turn help analyze the sustainability of the local economy.

A five-year period was used to analyze the input-output model of the main retail sectors in Needham. Apparel stores for example, have an input-output ratio of 1.71; meaning, if Needham invests \$100 in developing apparel stores, the local economy can get \$171 in output after five years. This output includes the GRP (gross regional product) and value added (such as wage, tax, etc). Thus, the net benefit to the whole town (in jobs, revenue, and increased business) for this investment of \$100 will be \$71. Based on Needham's spending potential and residential preference, increasing the supply of businesses in the study area will provide an economic benefit to the town as well as increase the activity in Town Center.

## **2.7 Community Arts Space and Programming**

Over the years, the residents of Needham have shown a commitment to support the arts. Needham has a wide variety of arts organizations, including Needham Community Theater, Needham Youth Summer Theater, Longwood Opera, the Interfaith Choir, the Highland

Glee Club, St. Joe's Summer Theater, the Needham Concert Society, Needham High School Fine Arts Department, and a number of other dance, vocal, and theater groups. Arts activities geared towards children ranging from toddlers to teens are in high demand throughout the town.<sup>11</sup> Until recently, Needham also had a Performing Arts Organization that consolidated the interests of all the local performance groups; however, that group is no longer in existence.

Unfortunately, Needham suffers from a lack of available performing arts space. Most of Needham's arts organizations require performance spaces that can accommodate audiences of 100-200 people, along with adequate wing space for staging and preparation, lighting, and sound systems. Such spaces are in short supply within the town, and Needham's arts groups have insufficient capital to independently fund the construction and operation of their own facility. The former movie theater on Dedham Avenue was a valuable resource. Until it fell beyond repair, Needham Performing Arts Organization had hoped to preserve and revitalize the facility. However, with the demise of both the theater and the Performing Arts Organization, there is currently little momentum to obtain better facilities. Consequently, the majority of organizations perform in Church basements or in school auditoriums, none of which have the size and acoustics to fully meet the standards of a dramatic performance, dance, or concert.

### **3. RECOMMENDATIONS FOR IMPROVEMENT**

Our strategy to enhance Needham Center follows a phased approach, starting with ideas that require few resources and should yield results in the short-term, then proceeding to more complex and longer-term proposals. In keeping with this phasing, our specific recommendations fall into seven general categories: (1) physical enhancement and programming of the Town Common; (2) creation of a performing arts center; (3) marketing and business development; (4) streetscape improvements; (5) housing strategy; (6) parking and transit-oriented development (TOD); and (7) enhancement of the Northern Gateway.

We feel that there is a powerful logic to this sequence. The first recommendation, improving the Town Common, should act as a catalyst for business development, community programming, and pedestrian and streetscape improvements in the downtown area. Finally, the enhancement of the Northern Gateway is a capstone project. While it should provide significant aesthetic and safety benefits, it will require greater time and resources.

#### **3.1 Enhancement and programming of the Town Common**

Our recommendations start in the heart of town: the Town Common. The Common currently acts as a latent focus of the center—while it does not detract from the district, neither do its benefits reach far beyond its boundaries. The Common’s unrealized potential lies not only in its potential to be a livelier place, but can also serve as a catalyst to enliven the entire downtown district. Consequently, the strategy of improving the Common is a strategy for improving the entire downtown. By building a lively, active center and creating visibility from the street, the Common can become the heart of the town and the hallmark of a revitalized, invigorated downtown.

*Recommendation 1a: improve visibility and access to the Town Common by removing visual barriers and creating a new pathway*

Designers call the impromptu paths people create across lawns and groundcovers “desire



Figure 3.1  
Physical transformation of the town Common.

lines.” Desire lines are a result of the desire to reach a visual destination by the most direct means—a place that the pedestrian desires to go – but they must create a new path to travel. With its well-organized walkways, Needham’s Common has the means; but, without visual access to the destination, there is limited desire. Even if an ambitious programming plan were implemented, without visibility, the events could not create the catalytic effect we envision.

The first and most obvious improvement to the social and civic function of the Common would be to improve visibility by removing from the perimeter the hedges, telephone booths, and, if possible, the signal box. The cutout on the south border has its heart in the right place; it is in axial alignment with Town Hall and provides a transitional space between the sidewalk and the Common. The addition of a pathway from that point would complete the axial alignment and, by adding access to the center, fulfill the promise of the transition—completing both physical and visual access to the Common. At the Town Hall end of the axis, eliminating parking spaces that block the pathway serves a similar purpose.

*Recommendation 1b: expand the Common’s central circle to provide additional gathering space*

In order to accommodate gatherings, the Common could also use a slight increase in walkable surfaces. A few feet of expansion in the central circle nets a significant increase in usable surfaces. While the sidewalk expansion into the streets would be limited by the narrow widths of these important arteries, a few feet of brick edging on the Common edge of the sidewalk would effectively increase walkable surfaces. This additional sidewalk space will create visual transition to the Common to draw the eye (and the pedestrian) inward and reconnect the Common to the street life around it. (See Figure 3.1a)

*Recommendation 1c: Create seasonal programming for the commons*

An essential part of the creation of the Common as a revitalization tool is the programming of the space. A redesigned space could accommodate and showcase a variety of events,

from performances to fundraisers. Events can be programmed around seasonal and holiday themes; an improved space creates room for summertime markets, art fairs, and other festivities. Encouraging the use of the space by community organizations provides an opportunity to hold fundraising events and sales while reducing the Town’s burden for event planning and programming. Local businesses could use events to increase visibility and sales both by benefiting from increased foot traffic and as participants. Farmer’s markets, flower shows, and craft fairs are all venues that draw on local establishments and could help these businesses in their marketing efforts.

An active and lively center would not only improve the visibility and viability of downtown business development, it has the additional benefit of giving the town a place to bring citizens together as a community. Events have the potential to gain support for community charitable organizations, both as fundraising venues and as ways to gain increased visibility for volunteer recruitment. A strong center helps to invigorate the *place*, in true placemaking fashion, and develop a civic, social, and economic heart.

### 3.2 Creation of a performing arts center

*Recommendation 2a: Create a multi-use Performing Arts Center in Needham Center*

Community programming creates a tie that binds the Town. Both at the Town Common and in independent community presentations, the performing arts create a time and place for Needham residents to come together. In addition to small events that can be held on the Common in good weather, Needham’s wealth of performance organizations demonstrate the need for a facility to encourage its youth and adults in their creative pursuits.

Needham’s shortage of performing arts space could be substantially alleviated through the creation of a multi-use Performing Arts Center. This center—designed to accommodate a wide number of uses, including live arts performances, public meetings, and movie showings—would build off of an existing core group of residents interested in the arts to create a wide community of Needham residents sharing culture, education, and fun. It would

<p><b><i>Potential events</i></b></p> <p><i>Winter</i></p> <ul style="list-style-type: none"><li>• Town Christmas Tree</li><li>• Caroling</li><li>• Christmas Light display</li><li>• Christmas tree sale</li></ul> <p><i>Spring</i></p> <ul style="list-style-type: none"><li>• Easter egg hunt</li><li>• Mother’s day flower sale</li></ul> <p><i>Summer</i></p> <ul style="list-style-type: none"><li>• Farmers’ market</li><li>• Art fair</li><li>• Fourth of July celebration</li><li>• Town “picnic”</li><li>• Flower/garden show</li></ul> <p><i>Fall</i></p> <ul style="list-style-type: none"><li>• Harvest festival</li><li>• Halloween “parade”</li><li>• Pumpkin patch</li></ul>
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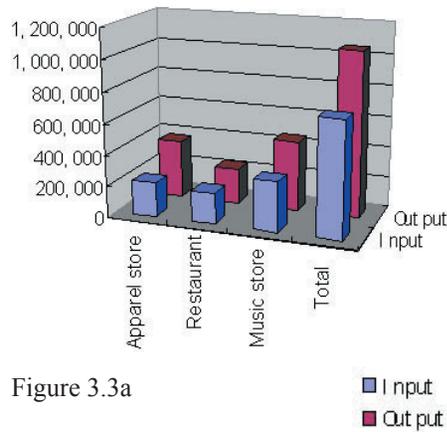


Figure 3.3a

consolidate a range of performance based activities—dance, theater, song, and more—into one location, preferably in or near the Town Center. Alternatively, the Performing Arts Center could be worked into the parcel development at Needham Junction, and further described in Section 3.6. Ideally, such a center would unite the community of Needham around the Arts and provide access to local entertainment.

Existing successful community Performing Arts Centers can be found in both Concord, MA and Natick, MA, each of which is reported to have wonderful stage spaces.<sup>12</sup> The Norwood Community Theater operated by the non-profit Fiddlehead Theater, is a great example of a multi-use performing arts organization. Funding mechanisms for Needham are suggested in Section 4.2 but other successful groups should be consulted for their valuable insight.

### 3.3 Marketing and business development

*Recommendation 3a: Strengthen Needham’s restaurant, apparel, and entertainment sectors*

For the most sustainable economic development of Needham center, the sectors recommended should be those that share the greatest retail gap as well as consumer preference; in other words, sectors that are most needed in Needham.<sup>13</sup> Based on the quantitative and qualitative analyses Needham can strengthen the following three sectors: (1) Food away from home, (2) Apparel, and (3) Entertainment.

The following scenario gives a clear idea of the possible economic benefit of developing the recommended sectors. Imagine setting up a new apparel store, a restaurant, and a music store in Needham Center. The input for this scenario includes the estimated construction costs: \$220,000 for an apparel store, \$200,000 for a restaurant, and \$ 320,000 for a music store; the total input for this scenario is \$740,000.

According to the input-output ratio analysis, the input-output ratio for a five year period

is 1.71 for apparel, 1.15 for restaurants, and 1.42 for such entertainment uses as music stores. The output for this input of \$740,000 will be \$1,060,000<sup>14</sup> for a net profit to the Town economy of \$320,600 (see Figure 3.3a). If we count this profit as interest for the investment of \$740,000, the annual rate will be 8.66%, a much higher rate than the current interest rate, meaning that the benefit of the recommended investment will be higher than its opportunity cost.

*Recommendation 3b: Establish a local business organization to promote the Town Center*

State legislation enables Needham to establish a Business Improvement District (BID) to create and maintain a more lively business district with an interest in the public sphere. Using a self-taxing mechanism, the BID creates a privately managed fund to provide a public benefit. Where currently a few businesses may contribute to public improvements (as simple as sweeping in front of their store), using a BID-type organization, each business and/or residence provides a minimal contribution for the public good. Typical responsibilities of a BID can include maintenance and cleaning, safety, business marketing and promotion of the downtown, and community event programming. In Needham, a BID or another informal business organization, would best serve the town by maintaining the streetscape improvements suggested in the Section 3.4 and actively recruit the types of retail mix Needham desires as discussed in Recommendation 3a. More discussion of the legislation can be found in Appendix B.

### 3.4 Streetscape improvements

To make an equal place for pedestrians within the predominantly automobile oriented atmosphere around Needham Center, we recommend a series of traffic calming solutions, including intersection bulbouts, crosswalk relocations, and changes to the sequencing of traffic lights and stop signals along Great Plain Avenue at the intersections of Chestnut Street and Highland Avenue. An overall plan of these proposals is illustrated in Figure 3.4a, and details of the specific interventions at the Chestnut Street and Highland Avenue intersections are illustrated in Figure 3.4b and Figure 3.4c. Both individually and in



Figure 3.4a  
Plan of a traffic-calmed Needham Center



Figure 3.4b  
Proposed intersection of Great Plain Ave.,  
Chapel St., & Chestnut St.



Figure 3.4c  
Proposed intersection of Great  
Plain Ave., Highland Ave., &  
Dedham Ave.



Figure 3.4d  
Perspective drawing of expanded median  
at Great Plain & Dedham

concert, these solutions should act to slow the speed of automobile traffic, minimize the potential for automobile-pedestrian-accidents, and generally improve the quality of the pedestrian experience within Needham Center.

In addition to enhancements to improve pedestrian safety, a number of other enhancements should be considered to improve pedestrian comfort. These enhancements are both visual and spatial, and seek to reduce the visual scale, increase the area of the pedestrian realm, and to provide sheltered areas for physical comfort. These enhancements are comprised of design guidelines to reinforce the streetwall, sidewalk improvements to provide comfortable walking space and surfaces, and scaling elements to establish a pedestrian scale.

*Recommendation 4a: install bulbouts along Great Plain at the intersections of Chestnut Street and Highland Avenue*

To slow automobile speed along Great Plain Avenue and increase safety for pedestrians, we recommend installing bulbouts along Great Plain at the intersections of Chestnut Street and Highland Avenue. Bulbouts have been successfully employed in many other towns in the region – most notably Cambridge. They work to slow traffic by creating a visual “squeeze,” narrowing a street both functionally and perceptually and causing drivers to reduce their speed. Along Great Plain, this “squeeze” should help to slow commuter traffic, reducing the likelihood of accidents at intersections. Bulbouts also shorten crossing distances for pedestrians, which both increases pedestrian safety and makes for shorter traffic signal times for vehicles. Finally, bulbouts allow more space for pedestrians to gather while waiting to cross. This characteristic is particularly advantageous on the southeast corner of Great Plain and Dedham Avenues, where the existing business entrance is currently cramped by the narrow sidewalk. “Bulbing out” this corner would improve the pedestrian-accessibility of both the adjacent intersection and the business entrance.

*Recommendation 4b: Relocate the crosswalks and expand the median at the intersection of Great Plain Avenue, Highland Street, and Dedham Avenue*

To improve the operation and safety of the intersection of Great Plain Avenue, Highland Street, and Dedham Avenue, we recommend the layout shown in Figure 3.4d. This new intersection configuration would substantially shorten the length of crossings and clarify the movements of both pedestrians and automobiles. The expanded median would also create a sanctuary for pedestrians within the intersection, replacing the existing long diagonal crosswalk with two shorter crossings. A perspective drawing of this median is shown in Figure 3.4e.



Figure 3.4e

*Recommendation 4c: Change the traffic light and walk signal sequencing at the intersection of Great Plain Avenue, Chapel, and Chestnut Streets and at the intersection of Great Plain Avenue, Highland Street, and Dedham Avenue.*

To minimize intersection delay times for both pedestrians and automobiles, we recommend changing the traffic light and walk signal sequencing at the intersection of Great Plain Avenue, Chapel, and Chestnut Streets and at the intersection of Great Plain Avenue, Highland Street, and Dedham Avenue. Specifically, the current “all-or-nothing” pedestrian crossing sequence should be replaced with typical crossing signal timings, which allow pedestrians to cross the street at the same time as parallel automobile traffic.

*Recommendation 4d: Increase the height limits for both the Central Business District (CBD) and Chestnut Street Business District (CSB) and allow for more “bonusable” FAR.*

A street wall is the “wall” suggested by buildings where they face the street. A continuous streetwall creates a feeling of enclosure and scale. Transparency (achieved with open store fronts) at ground-level makes the streetwall visually interesting and connects the buildings visually to the street, while appropriate building heights create a vertical surface that can scale down street width by changing the proportions of the street profile. In the downtown business district, many of the buildings are single storied. The street scale would be greatly improved by the addition of additional stories as shown in Figure 3.4f. The Town should alter its zoning regulations to allow these changes; the specifics are further discussed in Section 4.4 and Appendix A.



Figure 3.4f

*Recommendation 4e: Incentivize business owners to follow Needham’s existing design guidelines*

The scale of the street can create either a feeling of enclosure and shelter, or a feeling of expanse and exposure. The smaller the scale, the more enclosed and sheltered it feels for pedestrians. Many very popular and successful pedestrian environments are popular because of their small scale and comfortable feel. We need look no further than the traditional “Main Street” of old downtowns to understand the character and form of this scale. In the downtown business district in Needham, scale can be addressed both by the height of the streetwall indicated earlier, but also by the inclusion of scaling elements such as street trees, awnings, and small store signs. All of these elements help to create a sense of enclosure and shelter that will help create the attractive pedestrian environment that supports a successful retail district. Scale is determined by building heights, thus this recommendation plays into the height increases suggested in Recommendation 4d. However, it also suggests action by the Town to enforce the approved Design Guidelines in all new construction and renovation, as well as to provide a mechanism to encourage business owners to improve their storefronts without significant construction.

*Recommendation 4f: Add rows of street trees along Highland Avenue, Great Plain Avenue, Chapel Street, Chestnut Street, and Dedham Avenue*

One way to dramatically change the perceived attractiveness of the pedestrian environment is through the addition of street trees. We recommend rows of regularly-spaced trees along each of the five arterial streets in the district. Trees provide shade, shelter from winds, visual interest year round, and create a sense of enclosure on sidewalks while retaining a transparent visual border at eye level. These characteristics combine to create a truly pleasant walking environment that is both beautiful and comfortable.

One of the most difficult pedestrian environments to improve in the district is along Chestnut Street. Through inconsistent and very deep setbacks, the streetwall has never been established, so additional enhancements are required. Although a zoning ordinance

change that includes consistent, shallow setback requirements is important to the long term development along Chestnut Street, a more immediate remedy is the inclusion of rows of street trees lining the walkways. Street trees would give the illusion of a consistent frontage, and would not only help to scale down the visual scale of the roadway, but would also help to create a visual consistency that would help to unify the random building forms and placement that characterize the street.

*Recommendation 4g: Widen sidewalks along Chapel Street, Great Plain Avenue, and Chestnut Street.*

In the CBD, we recommend widening a number of sidewalks, most notably those along Chapel Street on the west side. Some of this portion of Chapel Street has a nice, consistent streetwall, but insufficient space for two people to walk comfortably side-by-side. By narrowing the driving lanes by two feet each, the sidewalk on Chapel Street could be widened by four feet. Additional width could be added around the common as previously mentioned. These sidewalk widenings, while reducing lane widths on Chapel Street, would result in no net loss of parking. Other sidewalks that have room for widening include Chestnut Street on both sides, and the western sidewalks along Great Plains.

*Recommendation 4h: Create a system of parking assemblage and driveway sharing along Chestnut Street.*

The pedestrian environment is nothing if it is not there—on many portions of Chestnut Street, the sidewalk is either missing or barely perceptible. (See Figure 3.4f) Top priority should be given to restoring those sections where the sidewalk is missing. One of the reasons for the discontinuous sidewalk along Chestnut is the large number of curb-cuts to accommodate parking. A system of parking assemblage and driveway sharing would reduce the curb-cuts and help restore a continuous walkway from Needham Center to Needham Junction.



Figure 3.5a



Figure 3.5b



Figure 3.5c



Figure 3.5d

### 3.5 Housing strategy

The underutilized parcels discussed in Section 2.5 provide three major opportunities to address the affordable housing deficit. The following recommendations examine the potential of these parcels in greater detail.

#### *Recommendation 5a: Infill residential development on the existing empty Theatre Lot*

The vacant theatre block consists of over 10,000sf of land. This property could be redeveloped into a multi-family, 2 ½-story structure holding 12 affordable rented dwelling units (1,000sf) while still allowing parking requirements for 1 ½ spaces per unit. A schematic of this proposed development is shown in Figures 3.5a and 3.5b. The financial structure and performance of a 15,000sf residential development costing roughly \$2,400,000 is included as in Appendix C, Exhibit 1. Ignoring the costs and appreciation attributed to land value, the return on investment over a ten year period indicates that the development is profitable – but only under certain conditions which will be discussed later.

#### *Recommendation 5b: Infill residential development on Chapel Street*

The existing area of land on Chapel Street north of the Artisans Shop is approx. 4,500sf. A 2 ½ - story mixed-use development consisting of ground floor retail and housing above could provide an additional 6 affordable units at a cost just over \$1,500,000 and drastically improve the aesthetics of this area. (See Figures 3.5c and 3.5d). Presumably, the current land owner would consider this development if the economical characteristics were reasonable. While off-street parking would not be provided within this particular development, parking requirements can be satisfied by utilizing areas elsewhere as discussed later in Section 3.6. The financial characteristics of this proposed development are included in Appendix C, Exhibit 2.

#### *Recommendation 5c: Mixed-Use development at Junction Station:*

Envisioned for this area is a mixed-use development complemented by a three-level

parking structure. As discussed below, such a structure could significantly increase parking capacity for all area stakeholders while reducing the total parking facility land coverage. Consequently, roughly 60,000sf of land could become available for development. A portion of this available land can be reserved for the development of as many as 70 multi-family units at a cost of approximately \$200,000 per unit. (See Figures 3.5e and 3.5f). Including 1 ½ parking spaces in the cost of each dwelling unit could both reduce the net cost of garage construction and meet current parking requirements mandated by the zoning regulations. The financial characteristics of this proposed development scenario are included in Appendix C, Exhibit 3. More details about the overall TOD development are presented in the following section.

While the returns indicate that these developments are profitable, they are established on an un-levered basis. Creative financing will only increase the returns more.

### 3.6 Parking and transit-oriented development (TOD)

#### *Recommendation 6a: Consolidate parking at and around Needham Junction*

The Needham Junction commuter rail station is undeniably a drive-to facility and, as such, has significant parking requirements. The high ridership levels at this station ensure that existing parking (an official total of approximately 180 spaces) is filled to capacity on most days. Any increase in usage will obviously increase these requirements. Discouraging transit usage by limiting parking facilities is a mistake; each person that uses transit for at least a portion of their work trip results in one less car on the local and regional road network. Additional parking demands are generated by the adjacent YMCA facility and, to a lesser extent, the nearby VFW facility. However, over 90,000 square feet need not be dedicated to parking in this area.

Parking could be consolidated and reconfigured in such a way that it is accessible to a variety of users and a benefit to the Town. Given the expected volume of users, the greatest success will be achieved when a structured facility is incorporated. An efficient, three-



Figure 3.5e



Figure 3.5f

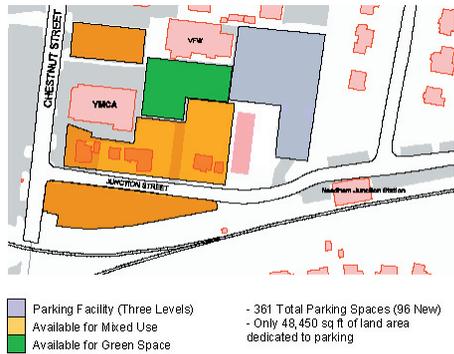


Figure 3.6a

level structure just north of the Junction Station could increase overall parking capacity by roughly 100 spaces. Such a structure could have a footprint less than 29,000sf. See Appendix C, Exhibit 4 for parking scenario calculations and Figure 3.6a for an illustration of one potential change in land use. If planned properly, such a re-imagining of the Needham Junction area can result in significant mixed-use development opportunities, as described in the previous section. The equation is simple: less area dedicated to parking provides more area for other, more productive uses. Additionally, such a focus on capacity expansion at the Junction can reduce transit-related parking pressures on the Needham Center facilities.

*Recommendation 6b: Transit-oriented development (TOD) at Needham Junction:*

The best use of the parcels along Junction Road would be an integrated live-work-and-play center that both provides 24-hour activation of an underutilized space and enriches the surrounding community. One potential model is the Overlake Village development in King County, WA (see Appendix B for details about this project). Some of the key components and considerations would include the following:

- **Housing:** Both market rate and affordable. Any affordable housing plans would benefit from the YMCA's involvement and could qualify for funding sources such as the Community Preservation Act, MassHousing, HOME Consortium, etc. (See Appendix B for brief descriptions of these and related programs.)
- **Retail/Commercial:** Smaller business interests could occupy ground level space in any proposed development. This could provide greater rents for developers as well as enhanced amenities for both housing residents and commuter traffic.
- **Community Space:** An expansion of YMCA facilities could be another use of available space. Specific uses may include job training, affordable child care, group meeting facilities, recreational open space, and the Performing Arts Center suggested above. Increasing the potential community benefits of the project to include recreation and housing would make it eligible for certain funding such as the Community Preservation Act. See Appendix B for a more detailed discussion of this funding source.



Figure 3.6b

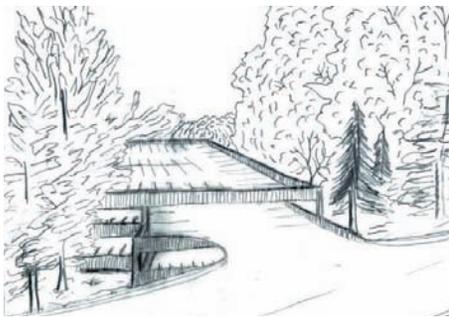


Figure 3.6c

*Recommendation 6c: New parking structure at Needham Junction*

A well-designed, compact parking structure could reduce the land area dedicated to parking from 90,000 sq ft to 48,000 sf ft. Such reductions could be achieved with a lot footprint of no more than 29,000 sq ft. and three levels at most. By working with the natural topography of the development area, the perceived mass of the structure could be substantially reduced. For example, a three-level structure built into an existing slope could appear much smaller than it really is. Resistance to a parking structure is likely, but it should be noted that irrational preferences for vast, unattractive parking lots are often based on misconceptions about the nature of parking structure design. (See Figures 3.6b and 3.6c) The façade and massing of a parking structure need not be unattractive if high-quality design is involved. A conservative design matching the surroundings can be achieved that will increase parking efficiency without conflicting with the local atmosphere. Such a facility could provide conveniently located, longer term parking for the YMCA, VFW, MBTA, and any new residential/commercial developments. Additionally, shorter-term parking/drop-off space would be located at key activity nodes throughout the site (i.e. the entrance to YMCA, MBTA boarding platform, housing/retail space entrances, etc.).

*Recommendation 6d: Assemble parking lots in Needham Town Center*

A slightly different strategy is envisioned for the Needham Center area. With much of the drive-to traffic shifted to the Junction, there could be greater flexibility of space. That is, there would be less need for parking, multiple access roads, etc. and less overall rush-hour vehicle traffic in the Town Center.

However, before this relatively ambitious scheme even occurs, parking stress in the Town Center can be addressed in a variety of lower cost ways. A high impact, low tech way to more appropriately meet Needham Center parking demands would involve the combination and reconfiguration of existing lots. A comprehensive efficiency evaluation of both public and private parking lots surrounding Needham Center should reveal that all that land need not be dedicated to automobile storage. Again, more compact use of existing parking facilities can provide greater development options. Moreover, by reconfiguring

the parking lots for greater capacity, more spaces would be available to offset parking requirements for nearby residential development such as the proposed Chapel Street project discussed in Section 3.5.

*Recommendation 6e: Create connections*

A well executed project will involve enhanced connections within the site as well as to surrounding areas. Safe, convenient, and attractive access routes between the YMCA, housing, retail space, parking facility, etc. will be a priority. Enhanced linkages to the grocery store and an improved bus terminus facility will also be incorporated. Likewise, providing adequate connections from Needham Center lots to nearby development and the Town Common will reduce vehicular demand. Each convenient walking or transit connection means that housing residents need their cars for one less trip. An overall lower dependence on automobiles would provide support for the issuance of parking waivers, thus decreasing the potential cost of development.



Figure 3.7a

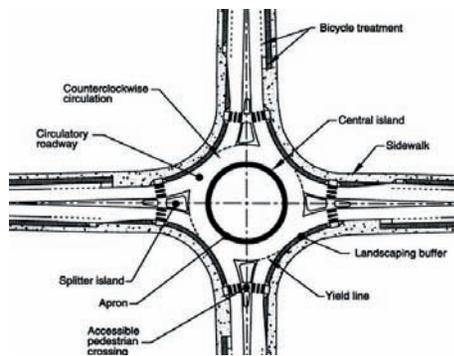


Figure 3.7b

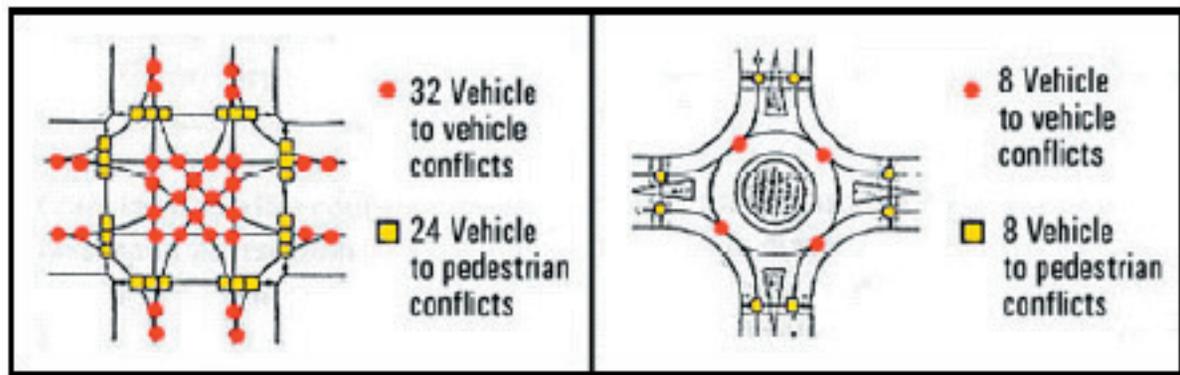
### 3.7 Enhancement of the Northern Gateway

Many of the weaknesses of the current Northern Gateway could be eliminated by transforming the current signalized intersection into a modern roundabout. Figure 3.7a shows the intersection as it could be: a simple, elegant, and attractive roundabout that welcomes visitors to Needham Center. When properly-designed, roundabouts offer advantages of efficiency, safety, and clarity over more traditional intersections. These benefits could greatly enhance both the function and the character of the Northern Gateway.

#### The case for roundabouts

While circular intersections have been part of the United States' transportation system since 1905, America's early rotaries typically had a high frequency of crashes and congestion. The modern roundabout – developed in the United Kingdom during the 1960's in direct response to these early problems – demonstrated substantial improvements

in both operation and safety over its predecessors, largely due to its mandatory “yield-at-entry” rule, which required all traffic entering the roundabout to yield to traffic within.<sup>15</sup> Over the ensuing decades, traffic engineers have continued to refine guidelines for proper roundabout design, leading to contemporary roundabouts configured as in Figure 3.7b. In addition to “yield-at-entry,” a state-of-the-art modern roundabout includes a circular center island (without pedestrian access), splitter islands on each approach, yield lines downstream of pedestrian crossings, good sight distance, lighting, and signing, and no parking within the roundabout.<sup>16</sup>



Type of roundabout	Sites	Before roundabout			Roundabout			Percent change		
		Total	Inj. <sup>3</sup>	PDO <sup>4</sup>	Total	Inj.	PDO	Total	Inj.	PDO
Single-Lane <sup>1</sup>	8	4.8	2.0	2.4	2.4	0.5	1.6	-51%	-73%	-32%
Multilane <sup>2</sup>	3	21.5	5.8	15.7	15.3	4.0	11.3	-29%	-31%	-10%
<b>Total</b>	<b>11</b>	<b>9.3</b>	<b>3.0</b>	<b>6.0</b>	<b>5.9</b>	<b>1.5</b>	<b>4.2</b>	<b>-37%</b>	<b>-51%</b>	<b>-29%</b>

- Notes:
1. Mostly single-lane roundabouts with an inscribed circle diameter of 30 to 35 m (100 to 115 ft).
  2. Multilane roundabouts with an inscribed circle diameter greater than 50 m (165 ft).
  3. Inj. = Injury crashes.
  4. PDO = Property Damage Only crashes.

Figures 3.7c and 3.7d

When designed in accordance with these guidelines, a roundabout can offer a number of efficiency advantages over a traditional signalized intersection. Based upon its smooth and constant vehicular flow, a roundabout generally provides better operational performance than an intersection with a signal in terms of stops, delay times, fuel consumption, and pollution emissions.<sup>17</sup>

Properly-designed roundabouts also tend to be significantly safer than more traditional intersections. As Figure 3.7c shows, the geometry of a roundabout allows for far fewer potential points of vehicle-to-vehicle or vehicle-to-pedestrian conflict than a standard intersection. Additionally, drivers’ slower speeds within the roundabout – caused by



Figure 3.7e

the combination of curved lanes and split approach and exit lanes – both minimize the probability of accidents and limit the damage caused in any accidents that do occur. Figure 3.7d shows the average annual crash frequency of eleven U.S. intersections both before and after they were converted into roundabouts. As the figure illustrates, post-conversion intersections showed a decrease in average annual crash frequency of 37 percent, and the frequency of crashes involving injury decreased by over 50 percent.

The safety benefits of roundabouts extend to pedestrians as well. With splitter islands to serve as pedestrian sanctuaries and yield lines located beyond points of pedestrian crossing, well-designed roundabouts typically feel safer to cross than traditional signalized intersections. This intuition is supported by statistical research, such as a study of 181 intersections in Norway converted to roundabouts that showed a reduction in pedestrian casualties by 89-percent.<sup>18</sup>

In addition to efficiency and safety, a roundabout – particularly in a highly-visible or gateway location – can provide ample clarity. With distinct splitter lanes and a unidirectional (counter-clockwise) traffic pattern, a roundabout presents motorists with more intelligible, less ambiguous choices than most standard intersections. This clarity can also extend to the surrounding area. An attractive roundabout often creates a visual focal point, signaling to drivers that they have reached an important junction. If located in a highly-traveled location, such a roundabout may even grow to serve as a symbol of the area for which it serves as a gateway.

*Recommendation 7a: Create a Gateway to the Town Center with a dramatic roundabout.*

The Northern Gateway intersection is a promising candidate for conversion into a roundabout. One potential configuration of such a roundabout is illustrated in Figure 3.7e. If Chapel Street were not present, this intersection would be perfect for a standard single-lane urban roundabout. With a few minimal expansions into the abutting properties the intersection can accommodate the minimum 100' curb-to-curb radius required that such a roundabout requires, and the geometry of May Street and Highland Avenue would work well with a prototypical roundabout layout. The acute angles of entry between Chapel and its immediate neighbors (May and Highland) complicate things somewhat, but a well-designed roundabout could manage these issues in a number of ways. The most direct approach is shown in the figure, which maintains the existing dedicated right turn lane from Chapel to Highland (located just south of the roundabout) and forbids direct right turns from May onto Chapel (indicated through clear signage).

Other than these special – and relatively minor – accommodations, the configuration of a roundabout in the Northern Gateway intersection would likely be relatively straightforward. The green circle in the middle of the roundabout indicates a grass-covered central island, which could incorporate plantings or additional landscaping if desired. The red circle around the center island denotes a paved truck apron, which would be off-limits to standard cars, but would allow larger trucks to navigate the intersection's turning radii.

A Northern Gateway roundabout would profit from all of the benefits of roundabouts previously described. It would enjoy a more efficient flow of traffic, prove safer for both automobiles and pedestrians, and provide an attractive visual approach for Needham Center's residents, workers, commuters, and consumers. If Needham wishes to establish a strong "sense of place" to differentiate itself from surrounding towns, a roundabout could contribute strongly to this endeavor.



## **4. IMPLEMENTATION STRATEGIES**

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### **4.1 Enhancement and Programming of the Town Common**

One of the most attractive aspects to physical and programming improvements to the Common is their low cost. Compared to other strategies outlined in this report, the proposed redesign of the Common would be quite inexpensive, involving only a few additions of paving and a number of removals. Perhaps the most difficult part of the physical changes would be the removal of the signal box—none of the other corners on that block would provide an ideal location for the structure and an underground utility box could be quite expensive.

Another attractive aspect to the proposed changes is their immediacy. While hardscape construction would take time to fund and implement, removal of visual barriers such as hedges and the telephone booths could begin immediately. Programming could also be quickly implemented. By using existing town resources to plan events on the Common (much as other town events are planned), the process of revitalizing the district could begin even before the end of this year. By summertime, the Common could become a hub of periodic activity, and could even become a fundraising venue for its own improvements. Additional funding could be acquired through the Community Preservation Act initiative, from a Public Works Economic Development Grant or through funding raised through a Business Improvement District (descriptions of these programs are provided in Appendix B).

### **4.2 Creation of a Performing Arts Center**

Without the presence of a private benefactor, a more compelling fundraising strategy for Needham is to tie the Needham Performing Arts Center with zoning regulations in town. By establishing a Community Arts Overlay District, the Town can provide a density bonus to developers willing to contribute to an Arts fund. This endeavor would also require significant outside fundraising if a new facility were to be constructed. In the short-term,

Revenue Sources of Local Government (Percentage analysis)

	<i>Intergovernmental Grants</i>	<i>Local Taxes</i>	<i>Charges and General Revenue</i>	<i>Total</i>
County	37%	38%	25%	100%
Municipality	28%	44%	28%	100%
<b>Township</b>	<b>24%</b>	<b>60%</b>	<b>16%</b>	<b>100%</b>

Source: U.S. Bureau of the Census, Compendium of Government Finances, No. 5 (Washington D.C.: U.S. Government Printing Office, 1997)

Figure 4.3a

profits from the Arts Overlay District can be capitalized to provide seed funding for a new facility.

Additionally, the residents should revive the performing arts collaborative and engage in fundraising. If this project is piggy-backed with a larger development

either at Needham Junction or in the Town Center, a benevolent developer may opt—or be persuaded by the Town—to incorporate the Arts Center facility into the development project. The organizations are prepared to pay minimal operating fees in line with existing costs of janitors and utilities; however, they cannot own and manage a space full time. Thus, the Arts Fund created by the overlay district will facilitate the daily operation of the Center while the numerous community organizations fill the space.

### 4.3 Marketing and Business Development

Figure 4.3a shows the statistics of revenue sources of different levels of local government in the United States. According to this table, the most important revenue source for the town government should be local taxes, which accounts for 60% of all the revenues; intergovernmental grants account for 34% and charges or general revenue account for 16%. The financial sources of the designed scenario, which requires an investment of around \$740,000, could be:

- (1) Local Taxes: around \$444,000
- (2) Intergovernmental Grants: around \$177,600
- (3) Charges and General Revenue: around \$118,400

Local taxes include property tax, sales tax, income tax and other taxes. Figure 4.3b shows that most of the taxes will come from property tax and sales tax in Needham. Intergovernmental Grants offered by the Commonwealth include unconditional grants,

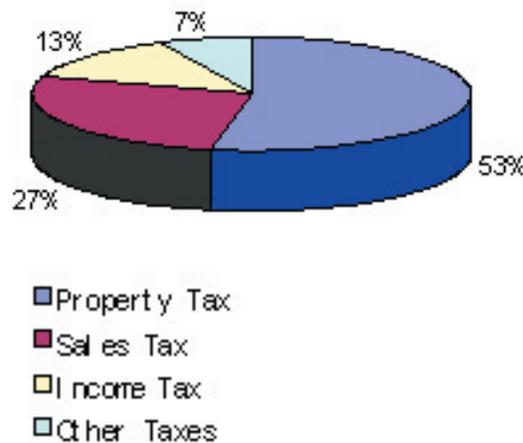


Figure 4.3b

which are grants from the state with no strings attached, and categorical grants, which are grants from the state that must be spent on specific projects in Needham. Needham should look into programs offered by MassDevelopment (see Appendix B) for business development programs. Additionally, if the town decides to form a Business Improvement District (see also Appendix B) the structure of that organization can include a marketing program used to attract desired businesses to Needham. The Business Improvement District also provides aesthetic services to make Needham a more desirable place for businesses to locate.

#### **4.4 Streetscape Improvements**

Funding for streetscape improvements could come from a number of sources. For traffic calming, sidewalk widening, and streetscaping, Public Works Economic Development (PWED) Grants and ISTEA funding are both appropriate. Improvements above and beyond traffic calming and typical public works projects can qualify for funding through the Transportation Enhancement Program. Traffic calming may also qualify for state reimbursement under Chapter 90.

Needham has already implemented a set of design guidelines that reflects many of the observations made in this report. A streamlined and consistent applied design review process could give more developers incentive to improve their streetside appearance. A streamlined process would shorten processing times, while consistent and reliable criteria for approval allows building owners the confidence that their proposals will have a good chance of getting approved. If the community creates a Business Improvement District (BID), the funds collected could be used towards those streetscape improvements not covered by transportation funding—signs, street furniture, and decorative elements among them.

Finally, changes in height restrictions would not only have the benefit of improving the scale of the street, as is described elsewhere in this report, additional stories are essential to making downtown development even minimally financially feasible. The zoning

ordinance should reflect this reality of development and create more aggressive incentives and bonuses towards the construction of multi-story buildings.

#### **4.5 Housing Strategy**

While the land exists for development and the above suggestions indicate that housing development is possible, current zoning regulations and economic conditions offer few incentives for developers to consider housing development in Needham. Current zoning regulations and development requirements reduce the potential returns developers will achieve making development entirely uneconomical. Incentives are needed. Needham must provide an impetus for projects it supports. This can be done using a number of vehicles.

##### *Relax Current maximum Floor Area Ratios*

First, the zoning regulations must be carefully analyzed. An FAR of 0.7 – 1.0 in Needham Center should be relaxed for certain projects that will benefit the community. Mixed-use projects in the Center that will encourage better land use should be supported by Needham; therefore bonuses for these projects should be offered. Development of the Theatre Block and Chapel Street Lot is not profitable without an increased FAR. The returns earned from the initial development cost, while below that described earlier, are not high enough when the maximum buildable area is below or equivalent to the land reserved for the proposed development. However, if the FAR were increased to 2 or even higher, economies of scale will be realized and returns will be greater as result of more profit from unit sales and/or rental revenue.

##### *Waive or reduce Development Fees*

Additionally, certain fees associated with development can be waived or reduced to provide incentives for developers. Certain impact fees such as utility connection fees often are too expensive. Moreover, fees are often established by the peak use of the new development rather than by the average use. In areas where development is encouraged by the town, fees can be relaxed to decrease upfront costs incurred by private developers.

*Reduce or eliminate Performance securities*

Performance security and/or bonds can be eliminated and or reduced. Currently, Needham deserves the right to impose a security to guarantee that certain conditions set forth in the grant of approval are met. By using other methods to guarantee conditions, such as denying occupancy permits in lieu of performance securities, developer’s up-front costs will be reduced.

*Streamline Permitting/Approval Process*

The development process should be streamlined. A more efficient approval process will allow developers to meet market conditions more accurately, achieve necessary returns, and thus make development profitable. All too often, the approval process is lengthy. Achieving approvals through the Design Review Board and Planning Board can take more than 6 months. If applications were categorized by community support rather than by order of filing, encouraged projects could be reviewed in order of importance and the lengthy approval and permitting process can decreased.

### 4.6 Parking and Transit-Oriented Development (TOD)

Tackling the interrelated transportation issues at both Needham Center and Needham Junction should involve an incremental process. The easiest and least expensive option would be the redesign of parking uses around Needham Center, starting with the Eaton Street Lot and adjacent private lots. The recent changes to the Chestnut Street lot provide the Town with experience in this type of project. As with that project, certain transfers of responsibilities and ownership rights may be necessary to establish the most effective construction and management structure. It is important that private owners of parking facilities, particularly those along Garden Street, are involved in the process from the very beginning. The project should not be perceived as an encroachment upon private property, rather it should be viewed as a collaborative effort that creates more usable space for all stakeholders. Due to the complexity of the area, a variety of different parking and access scenarios should be developed before arriving at the final plan. Even a relatively simple scenario, such as the one depicted in Figures 4.6a and 4.6b, can demonstrate the potential

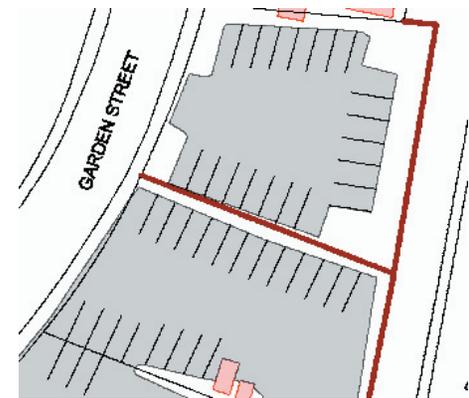


Figure 4.6a: Parking Existing Conditions

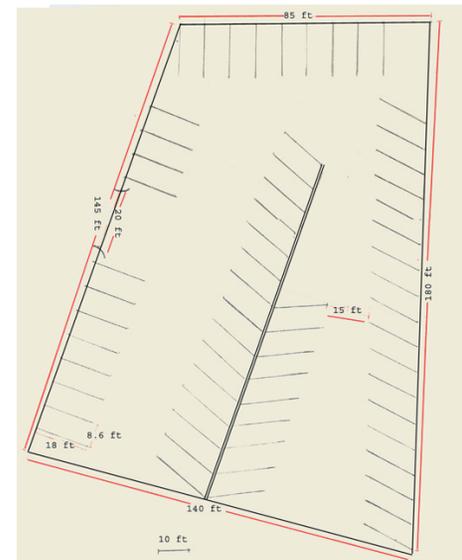


Figure 4.6b: Reconfiguration of Parking (40% capacity increase)

gains from a re-envisioning of vehicle storage space. The goal is not to create even larger, unattractive swaths of parking lots. Instead, a successful project will focus on areas that are already paved and identify creative ways to increase their efficiency.

It is expected that a redevelopment of the space around Needham Junction will be most feasible if it is enabled by a partnership of various public, private, and non-profit stakeholders. The risks and costs can then be more broadly distributed and ultimately the benefits should be felt by all. Potential partners include:

- YMCA: Own property directly adjacent to Junction station. An organization with a long history of providing community services and housing, the YMCA has expertise in structures and identifying funding for projects of this nature. See Appendix B for a description of recent projects.
- VFW: Current owner of a significant portion of the parking area surrounding the Junction and already involved in a number of parking lease arrangements. The developer of the affordable retirement units at 141 Chestnut Street currently rents ten spaces from the VFW and there is an indication of a similar arrangement with the Roche Bros. grocery store across the street. The VFW could benefit from the revenue generated from an outright sale or long-term ground lease.
- MBTA: Potential rises in parking revenues due to parking capacity increases will be of particular interest to the T. The opportunity to become involved in profitable redevelopment of adjacent parcels and the further ridership increases from housing construction will also be viewed favorably by the transit agency. Currently, the Junction Station boasts the highest ridership among all stations along the Needham line. However, parking capacity has reached its limit. Clearly, the MBTA would benefit from increased parking capacity.
- Roche Bros. Grocery: Directly across Chestnut Street from the development area, this business could benefit substantially from any increase in residential units.

In light of the above, a creative capital structure including the MBTA, VFW, YMCA, Roche Bros. (possibly), a private developer, and most importantly – Needham – can

bring the a Transit-Oriented Development to fruition. As mentioned earlier, the Overlake Project in King County, WA provides one example of the type of structure that may be necessary. The St. Francis Medical Center parking structure in Los Angeles County provides an example of how a relatively small scale parking facility can be constructed in an economical manner. (See Appendix B for a brief description of this case). A mixed-use development will dramatically improve the Junction area and alleviate the parking crunch felt by Needham Center by encouraging commuters to utilize the revised parking scenario near the Junction Station.

#### **4.7 Enhancement of the Northern Gateway Roundabout**

Regardless of the final intersection configuration, converting a major intersection like the Northern Gateway into a roundabout would be a major task, requiring considerable planning and financial resources. The intent of this plan is not to provide a detailed design proposal for a roundabout. Rather, it is to make a compelling case for the merits of a Northern Gateway roundabout, the details of which would be determined by a further planning, traffic, and engineering study. If Needham wishes to proceed down this path, it will also benefit from an open planning process that actively engages abutting landowners, who – depending upon the specific intersection design – may need to part with a small amount of their land to allow for sufficient room for both roundabout and the surrounding sidewalk.

It is unlikely that Needham will be able to internally supply the funding required to finance the creation of a roundabout. The most promising source of external funds is the Federal Intermodal Surface Transportation Act (ISTEA), particularly including its Transportation and Community and System Preservation Pilot Program (TCSP). At the moment, ISTEA is going through the process of reauthorization, and consequently few funds of any kind are immediately available. However, reauthorization appears likely within the near future, and a reauthorized ISTEA and TCSP should have funding for projects of this type.



## CONCLUSIONS

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Needham is a quintessential New England town, characterized by a long history in agriculture and manufacturing. Its residents are hard-working individuals, many who have returned to their childhood home to raise their families. The Town Center is functional as it is; but Needham residents don't stay for long and they could spend more money there. As in any town, the physical development of Needham is a constant work in progress. This plan serves to highlight some of the areas spotlighted for the next change. Realizing that the one big development does not often serve as the appropriate catalyst, we have proposed incremental changes in the hopes of effecting real change. These simple projects—the form and programming of the Town Common, street furniture and building facades, business development—are modest, inexpensive, and easily obtained goals. Starting at the heart, the Town Center, you create a sense of place and an understanding of what it is to be Needham. Larger recommendations—improved parking schemes, a northern gateway, infill and housing in the Town Center, a Performing Arts Center, and development at Needham Junction—take more time and resources. However, they fill holes in the physical landscape, calling out underutilized spaces and making them more attractive, more desirable. Together these projects help to strengthen the identity of Needham, by creating a more dynamic place for residents to live, learn, work, and play.



**(Endnotes)**

<sup>1</sup> 2000 U.S. Census

<sup>2</sup> Needham Community Profile, Massachusetts Department of Housing and Community Development.

<sup>3</sup> 2000 U.S. Census

<sup>4</sup> Needham Housing Study, September 23, 2003

<sup>5</sup> Needham Housing Study, September 23, 2003

<sup>6</sup> The Warren Group, September, 2003.

<sup>7</sup> Multiple Listing Service, Sept. 2003

<sup>8</sup> FIRE stands for finance, insurance, and real estate, accounting for most professional services.

<sup>9</sup> Boston Consumer Expenditure Survey, 1990

<sup>10</sup> Newton/Needham Chamber of Commerce, 1992

<sup>11</sup> Conversation with Michael Bailit, Board of Directors President, Needham Community Theater (10/1/03)

<sup>12</sup> Interview with Michael Bailit, Board of Directors President, Needham Community Theater (10/1/03)

<sup>13</sup> Because of the level of data available, this analysis occurred at the level of Town of Needham and is not specific to Needham Center. However, the results are particularly applicable to the Town Center because of the desire to encourage greater activity in the area.

<sup>14</sup>  $1.71 * 220,000 + 1.15 * 200,000 + 1.42 * 320,000 = \$1,060,600$

<sup>15</sup> "Roundabouts: An Informational Guide." U.S. Department of Transportation, Federal Highway Administration. Publication No. FHWA-RD-00-067. 2.

<sup>16</sup> Teitelman, Eric M. "Broad Street Roundabout – Position Paper." New England Chronicle of the Institute of Transportation Engineers. Volume 43, Number 3. September 2003. 1.

<sup>17</sup> Roundabouts: An Informational Guide. 67.

<sup>18</sup> Teitelman. 5.



## **APPENDIX A:**

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Though categorized for ease of understanding, many of these tools are applicable to more than one program. Please see Section 4: Recommendations for the applicability of each tool.

### **Zoning Changes**

According to the current Zoning By-Law, no building constructed within the CBD or CSD is constrained by the *maximum building bulk* provisions. However, the existing maximum FAR of 1.0 and 0.7 is a parameter that entirely eliminates proposed 2-story structures in Needham Center. Because of the small lot sizes, constructing a 2- to 3-story structure under current FAR constraints yields floor-plates that are extremely inefficient. Clearly, in order to achieve a better sense of scale as discussed earlier in Section 3.4 this language must be revised. Increasing the FAR from 1.0 to 2.0 (or higher) in the CBD, regardless of the inclusion of a residential program, will drastically improve the pedestrian feel while walking down the main corridors.

Additionally, the current Zoning By-Law limits the height of new buildings within the CBD and CSD to 2 ½ stories or 35 ft. This provision coupled with the above FAR constraints only provides landowners and developers with one viable option – a single story structure utilizing as much of the land area as possible by still meeting current parking requirements. Therefore, like the suggestion stated earlier regarding increasing the maximum FAR, the height limitations should be increased.

The By-Law requires that off-street parking be required for all new structures meeting the following (but not limited to) provisions:

USE	NUMBER of OFF-STREET PARKING SPACES
Theatre, gym, auditorium, or place of public assembly	One space per three seats of total seating capacity
Retail stores or services	One space per 300sf of floor area
Offices and banks	One space per 300sf of floor area
Restaurant	One space per 3 seats plus 10 spaces for take-out service

While off-street parking is and should remain a requirement, certain parcels of land cannot meet these requirements when the economics preclude development of structures with small floor plates. Therefore, parking provisions should be more specific – location and type of service should be considered. Empty lots bounded by municipal parking should not need to meet parking requirements if the additional parking demand can be assumed by current supply. Moreover, one retail store may require only little transient parking while others depend on parking capacity meeting the current provisions.

Apartments or multifamily dwelling units are only allowed within the CBD and CSD by Special Permit. Special Permit approval requires applicants to provide more material and expend additional resources making the permitting and approval process more time consuming. This restriction should be lifted; however, the process can be policed by added language that ensures downtown residential development is executed in an agreeable fashion.

## **APPENDIX B:**

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### Business Development Tools

#### **MassDevelopment Program**

MassDevelopment provides financial tools and real estate expertise to stimulate economic growth across the state of Massachusetts by working with businesses and local officials to address blighted areas, help create jobs, and address overarching issues that impact economic development. Though most MassDevelopment programs are aimed at blighted and economically disadvantaged communities, if Needham increases its low-income population some of these resources may be available. More details can be found at <http://www.massdevelopment.com>.

**Mass Community Capital Fund (MCCF):** the Massachusetts Community Capital Fund (MCCF), a component of the Massachusetts Community Development Block Grant Program (CDBG), offers businesses, located within eligible municipalities, flexible debt financing. MCCF targets those businesses which create and /or retain jobs for low-and moderate-income residents in the Commonwealth. If Needham can show that a project meets a critical community need, they may be eligible for MCCF funds; otherwise, these funds are provided for low- to moderate-income communities or blighted areas. More details about this program can be found at [http://www.state.ma.us/dhcd/publications/fact\\_sheets/MCCF.pdf](http://www.state.ma.us/dhcd/publications/fact_sheets/MCCF.pdf).

**Grants from the Division of Municipal Development at DHCD:** The Massachusetts Department of Housing and Community Development offers their expertise to help communities access grants, training, and technical assistance. This is an excellent Massachusetts state government resource for Needham to find relevant and up-to-date information. Details about this program can be found at <http://www.state.ma.us/dhcd/components/dcs/default.htm>.

“The BID model represents a flexible form of governance that allows participants to craft solutions in a way that is sensitive to the local context and where state and local funding is limited; provides an opportunity for multiple stakeholders to organize, operate with autonomy, and manage programs to improve the physical, economic and social conditions within their geographical jurisdiction; allows commercial interests to aggressively promote downtown areas, by managing sophisticated marketing campaigns and outdoor events that attract visitors.”

Hoyt, Lorlene *The Business Improvement District: An Internationally Diffused Model for Revitalization*, October 2003.

### **Business Improvement District (BID)**

According to the Division of Municipal Development (DMD), a BID is a “downtown management strategy and financing tool that allows commercial districts to develop, fund and administer programs and services targeted solely within the district.” A self-taxing mechanism generates the revenue on which the BID operates; The BID is financed by property owners within the district who agree to an additional assessment on their real estate property taxes which is solely for BID operations. These services include: improved maintenance, physical streetscape improvements, enhanced safety and security, business retention and recruitment, marketing, and professional management. There are BID organizations throughout the country. In Massachusetts, the first BID is located in Springfield and one is currently forming in Hyannis. The downside to the BID concept as legislated in Massachusetts is that businesses in the geographically defined area have the option to opt out of the self-taxing mechanism at two points: once when the BID is initiated and again when the property changes hands. The generally idea behind the BID concept is that everyone puts a little into the pot for the shared common benefit; once some members opt out, the BID loses its integrity because all still receive the same benefit while only some pay. However, if done appropriately, creating a BID in Needham town center can be a very effective means to make many of the recommendations provided in this plan, from streetscape improvements, business development, to the ever important maintenance and operation of the area. The legislation can be found at <http://www.state.ma.us/legis/laws/mgl/400-7.htm> and DHCD’s guide to establishing a BID is located at <http://www.state.ma.us/dhcd/publications/bid398.pdf>.

### Streetscape

#### **Transportation Enhancement Program**

A component of the Intermodal Surface Transportation Efficiency Act (ISTEA), the Transportation Enhancement Program (TEP) provides opportunities to preserve, restore, and enhance components of the surface transportation system by providing added features to standard transportation facilities and programs. According to MassHighway, “eligible projects include development of bicycle and pedestrian facilities, educational programs, landscaping, acquisition of scenic easements, historic preservation, restoration of buildings

and structures, removal of outdoor advertising, archaeological research, environmental mitigation of stormwater pollution, and establishment of transportation museums.” To access TEP funding, Needham would need to hire an engineer or designer to facilitate the planning process.

Though it can be a long process (two to three years) to secure TEP funding, the result is an improved environment in the downtown for both pedestrians and automobiles. Generally, TEP will fund amenities beyond typical improvements provided by the Public Works Department; For example, the TEP will fund the brick pavers on a new sidewalk, but not concrete. The TEP funds projects in excess of \$50,000, in an 80% federal, 10% state, and 10% local share.

The implementation guide is found at <http://www.state.ma.us/mhd/planning/impguide.pdf> and more general information can be found at MassHighway’s website <http://www.state.ma.us/mhd/publications/other.htm>.

## Housing Tools

### **MassHousing**

Needham and any partner developers would be wise to harness the resources available through MassHousing, the leading provider of affordable housing in the state. Over the past 34 years, MassHousing has provided more than \$7.5 billion in financing, resulting in the construction of over 79,000 units. Currently, the political goals of the Romney administration could ensure that transit oriented projects gain priority status. Recent projects include:

- Amory Street Residences (Roxbury, Boston): \$4.2 million loan commitment for the construction of 64-unit mixed-income rental development. Within walking distance of MBTA Orange Line (Jackson Square Station).
- Greenwood Meadows (Andover): \$3.5 million loan commitment for the construction of 20 mixed-income single family homes.

More information is available at [www.masshousing.com](http://www.masshousing.com)

### **HOME program**

In developing a plan for low-income housing development, Needham can also take advantage of its membership in the Newton HOME consortium. The combination of the original four members (Newton, Brookline, Waltham and Watertown and Belmont) with the more recent members (Bedford, Lincoln, and Needham) means that the consortium is eligible for approximately \$1.5 million annually in HOME funding. This funding is specifically earmarked for the construction, purchase, and/or rehabilitation of affordable housing (either for rent or homeownership). It can also be used as rental assistance to low-income households. More information is available at <http://www.hud.gov/offices/cpd/affordablehousing/programs/home/>.

### **Executive Order 418**

Needham should finalize and approve a housing strategy through Section 2 of Executive Order 418 (EO418). Needham has been certified under EO418 in past years; however the requirements changed for the year 2004. From this point forward, the Town needs to have an approved housing strategy in place and must show progress towards the housing goals stated in the housing strategy to be certified under EO418. The goal of EO418, which is administered by the Department of Housing and Community Development (DHCD) is to increase the supply of housing to families across a wide range of incomes. Benefits of EO418 certification included priority towards over \$364 million in discretionary funds administered by DCHD, the Executive Office of Transportation and Construction (EOTC), the Executive Office of Environmental Affairs (EOEA), and the Department of Economic Development (DED). More details about Executive Order 418 can be found at:

DHCD's website - <http://www.massdhcd.com/eo418/homepage2.htm>

EO418 fact sheet - [http://www.state.ma.us/dhcd/publications/fact\\_sheets/EO418.pdf](http://www.state.ma.us/dhcd/publications/fact_sheets/EO418.pdf).

### **Community Preservation Act**

Under the Massachusetts Community Preservation Act, cities and towns can vote to dedicate up to a 3% increase in property taxes to a locally managed Community Preservation Fund. These surcharges tend to have a minor impact on individual tax payments (often as little as \$4 dollars a month) and both low-income and elderly households can be exempt. The State

then matches (generally a 100% match) the funds raised through the surcharge. This money can then be used for projects that preserve or create open space, support the development of affordable housing, or protect historic buildings and landscapes. In 2003, an average of \$502,988 was raised per town through the CPA surcharge. When including the matches provided by the State, this resulted in an average \$1,005,975 in total added funds for community infrastructure. Currently, 54 cities and towns participate. More information is available at <http://www.communitypreservation.org/> .

### **Tax Increment Financing (TIF)**

TIF may be an option for certain projects if the argument can be made that the properties could have significant increased value as a result of the development. By establishing a TIF district incorporating these properties, Needham would be enabling this increased value to actually finance further development within the district. A TIF could work in the following manner: The Town establishes a TIF district and a baseline tax level is set. As redevelopment occurs, the values of properties will increase and taxes will incrementally move beyond the baseline level. Any taxes generated above this level will be reinvested in the TIF district, either to repay development debt (bonds, etc.) or fund future projects. This process continues for the predetermined life of the TIF district during which time all development costs should be adequately covered. After this period is over (generally 10-20 years) and the TIF district expires, all future above-baseline taxes revert back to the municipality and result in a budget windfall for the Town. More details can be found at: <http://www.state.ma.us/dhcd/regulations/760022.htm>

### **Recent YMCA Family Housing Initiatives**

- Brockton, MA: Constructed a 13-unit affordable housing complex with on-site services designed to stabilize families in transition. It is a collaboration of 16 human service providers and has been led by South Shore Housing, Catholic Charities, St. Patrick's Church and the Old Colony YMCA. See <http://www.oldcolonymca.org/newspress121002.html> for more information.
- Lindsay Heights, MN: In order to provide \$1.7 million for affordable housing efforts, established the Lindsay Heights TID (Tax Incremental Financing District) as a public/

private partnership including the City of Milwaukee, the Local Initiatives Support Corporation (LISC), the Wisconsin Housing and Economic Development Authority (WHEDA), the YMCA, and other local stakeholders. See <http://www.mkedcd.org/news/2001/LindsayHeightsTID.html> for more information.

### Transit-Oriented Development Tools

Although a wide variety of potential examples exist, the following two cases serve as brief illustrations of the types of projects that may be appropriate for the study area.

#### **The Village at Overlake Station: Key Components**

This project, located in King County, Washington, was fully completed in 200.. Overlake is the first project in the nation to combine transit park-and-ride (two-level structure with 536 total parking stalls), affordable housing, and day care. The final product resulted in 308 new units affordable to households earning 60% of the area's median income. This provided employees of local companies with greater opportunity to actually live in the community. One of the perks of residency is a free monthly bus pass, provided as part of a regional initiative to encourage alternative transportation modes. Financing was provided through a joint development of King County, the King County Housing Authority, and a private developer. Both tax-exempt financing and federal housing credits were utilized. More information is available at <http://www.metrokc.gov/kcdot/alts/tod/overlake.htm>.

#### **St Francis Parking Structure: Key Components**

In response to increased outpatient activity, St Francis Medical Center in Los Angeles County opted to construct a new 471-car parking facility. Although limited by site characteristics and maximum obtainable floorplate size, the designers were still able to achieve an impressive level of efficiency (316 square feet per parking space) for the 95,766 square foot structure. Financial and spatial savings were achieved through the use of a clear span structural system, which eliminates structural columns from the parking area. Such a structural system is also known to create a safer user environment. All development costs were covered by Pacific Medical Buildings, a private company that has retained ownership of the structure and leases the land from the hospital. The hospital, in turn, has

control over the structure through an additional operations lease. The parking fee structure is such that all major costs (lease payments, operating fees, and management fees) are completely covered. See <http://www.pacificmedicalbuildings.com/hospital-parking.html> for more details.

### **The Public Works Economic Development Program**

The state of Massachusetts established the PWED program fund both the design and construction of roads and related roadway-related projects deemed necessary for economic development. Projects include, but are not limited to existing and new public access roads, streets and bridges, sidewalks, curbing, streetlights, traffic signals and controls, and drainage systems and culverts, so long as the projects correspond with local economic development efforts. Local governments petition the Secretary of Transportation for economic development projects that meet the following criteria:

- retain, establish, expand or otherwise revitalize industrial or commercial plants or facilities
- create or retain long-term employment opportunities;
- have a positive impact on local tax base;
- leverage high ration private investments, and;
- strengthen the partnership between public and private sectors.

Although the requested amount cannot exceed \$1 million, the regulations are designed to provide maximum flexibility and discretion to the recipient. Sewage systems, water delivery systems, administrative costs and projects on which construction has been initiated are all ineligible for PWED grant funding.

For further information:

[http://www.state.ma.us/eotc/programs/programs\\_pwedpg1.html](http://www.state.ma.us/eotc/programs/programs_pwedpg1.html)

**Chapter 90**

The Chapter 90 program entitles municipalities to reimbursement of expenditures on projects that create or extend the life of capital facilities such as roads, bridges, and related engineering services and expenses. In order to receive funds, the municipality must file a request for each project. Reimbursements are issued in the fiscal year in which the costs were incurred. Funds can be used for any project eligible for funding as “transportation enhancement” as described in the Intermodal Surface Transportation Efficiency Act (ISTEA). This includes projects such as bikeways, mass transportation, engineering services, and the erection and maintenance of direction signs and warning signs.

For further information: <http://www.state.ma.us/mhd/stateaid/chap90.htm>



Exhibit 2

Chapel Street												
Lot Size:	4500											
Floor Area Ratio:	2.3											
Allowable Construction:	10350											
Floors:	3											
<b>Property Data:</b>												
<b>Residential</b>		<b>Discount Rate Data</b>				<b>Cap Rate Data</b>						
Leasable(sf)		Calculation of Current Discount Rate				Going In Cap Rate						
Market Rent:		Risk Free (T-Bills) 4.20%				Discount Rate 10.45%						
Rent/yr.: \$ 87,750.00		RE Risk Premium 6%				- Growth 2.33%						
Vacancy Rate 5%		Additional RP 0.25%				Calculated CR 8.12%						
Rent Growth 3%		Discount Rate 10.45%				Going Out Cap Rate						
<b>Commercial</b>		<b>Purchase/Sales Data</b>				Discount Rate 10.45%						
Leasable (sf)		Due Diligence etc. \$ 50,000				- AVG Δ PBTCF 1.19%						
Market Rent:		Sales Comission 2.00%				Calculated CR 9.26%						
Rent/yr. \$ 112,500.00		Construction \$ 1,521,000.00										
Vacancy Rate 2%												
Rent Growth 1%												
<b>Other</b>												
OE and P Taxes incl Rsrve. (f/ft) \$ 7.00												
Annual Growth of above 3%												
<b>Years</b>												
	0	1	2	3	4	5	6	7	8	9	10	11
<b>Residential Rent Income</b>	\$ 87,750	\$ 90,383	\$ 93,094	\$ 95,887	\$ 98,763	\$ 101,726	\$ 104,778	\$ 107,921	\$ 111,159	\$ 114,494	\$ 117,929	
<b>Commercial Rent Income</b>	\$ 112,500	\$ 113,625	\$ 114,761	\$ 115,909	\$ 117,068	\$ 118,239	\$ 119,421	\$ 120,615	\$ 121,821	\$ 123,040	\$ 124,270	
<b>Gross Revenues</b>	\$ 200,250	\$ 204,008	\$ 207,855	\$ 211,796	\$ 215,831	\$ 219,965	\$ 224,199	\$ 228,537	\$ 232,980	\$ 237,533	\$ 242,199	
<b>Less Vacancy</b>	\$ (6,638)	\$ (6,792)	\$ (6,950)	\$ (7,113)	\$ (7,280)	\$ (7,451)	\$ (7,627)	\$ (7,808)	\$ (7,994)	\$ (8,185)	\$ (8,382)	
<b>Effective Gross Income</b>	\$ 193,613	\$ 197,216	\$ 200,905	\$ 204,683	\$ 208,552	\$ 212,514	\$ 216,572	\$ 220,728	\$ 224,986	\$ 229,348	\$ 233,817	
<b>Less Operating/Tax Expense</b>	\$ (72,450)	\$ (74,624)	\$ (76,862)	\$ (79,168)	\$ (81,543)	\$ (83,989)	\$ (86,509)	\$ (89,104)	\$ (91,777)	\$ (94,531)	\$ (97,367)	
<b>Net Operating Income</b>	\$ 121,163	\$ 122,592	\$ 124,043	\$ 125,515	\$ 127,009	\$ 128,524	\$ 130,063	\$ 131,624	\$ 133,209	\$ 134,817	\$ 136,450	
<b>Development/Reversion</b>	\$ 1,492,762										\$ 1,474,114	
<b>Cost of Purchase/Sale</b>	\$ (50,000)										\$ (29,482)	
<b>Property Before-Tax Cash Flow</b>	\$ (1,442,762)	\$ 121,163	\$ 122,592	\$ 124,043	\$ 125,515	\$ 127,009	\$ 128,524	\$ 130,063	\$ 131,624	\$ 133,209	\$ 1,579,449	
<b>Internal Rate of Return</b>	8.80%											

Exhibit 3

Junction Station												
Garage Area	29,000											
Parking Spaces	276											
<b>Property Data:</b>		<b>Discount Rate Data</b>				<b>Cap Rate Data</b>						
<b>Residential</b>		<b>Calculation of Current Discount Rate</b>				<b>Going In Cap Rate</b>						
Units	70	Risk Free (T-Bills)	4.20%	Discount Rate	10.45%	Discount Rate	10.45%	- Growth	3.67%			
Affordable Sales	200000	RE Risk Premium	6%	Additional RP	0.25%	<b>Calculated CR</b>		<b>6.78%</b>				
Growth	5%	<b>Discount Rate</b>	<b>10.45%</b>			<b>Going Out Cap Rate</b>						
<b>Commercial</b>		<b>Purchase/Sales Data</b>				<b>Discount Rate</b>						
Leasable (sf)	20000	Due Diligence etc.	\$ 50,000	Discount Rate	10.45%	- AVG Δ PBTCF	2.33%	<b>Calculated CR</b>		<b>8.12%</b>		
Market Rent:	19	Sales Comission	2.00%									
Rent/yr:	\$ 380,000.00	<b>Construction</b>	<b>\$ 17,136,000.00</b>									
Vacancy Rate	5%											
Rent Growth	1%											
<b>Garage</b>												
Deeded Spaces	105											
Sales	\$ 11,000.00											
Remaining Spaces	171											
Commuter Fee(\$/day)	\$ 7.00											
Revenue (per yr)	\$ 225,000.00											
Growth	1%											
<b>Other</b>												
OE and P Taxes incl Rsrve.(/sf)	\$ 7.00											
Annual Growth of above	2.00%											
<b>Years</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>Residential Sales</b>		\$ 4,666,667	\$ 5,145,000	\$ 2,431,013	\$ 2,552,563							
<b>Garage Sales</b>		\$ 365,000	\$ 424,463	\$ 200,559	\$ 210,586							
<b>Commercial Rent</b>		\$ 380,000	\$ 387,638	\$ 399,384	\$ 415,600	\$ 436,800	\$ 463,672	\$ 497,119	\$ 538,309	\$ 588,741	\$ 650,336	\$ 725,559
<b>Less Vacacy</b>		\$ (19,000)	\$ (19,382)	\$ (19,969)	\$ (20,780)	\$ (21,840)	\$ (23,184)	\$ (24,856)	\$ (26,915)	\$ (29,437)	\$ (32,517)	\$ (36,278)
<b>Garage Rent</b>		\$ 225,000	\$ 229,523	\$ 236,477	\$ 246,079	\$ 258,632	\$ 274,543	\$ 294,347	\$ 318,736	\$ 348,596	\$ 385,067	\$ 429,607
<b>Effective Gross Income</b>		\$ 5,637,667	\$ 6,167,241	\$ 3,247,463	\$ 3,404,049	\$ 673,592	\$ 715,031	\$ 766,610	\$ 830,129	\$ 907,900	\$ 1,002,887	\$ 1,118,889
<b>Operating Expenses/Cap. Expenses</b>		\$ (167,600)	\$ (174,371)	\$ (185,044)	\$ (200,298)	\$ (221,145)	\$ (249,045)	\$ (286,074)	\$ (335,181)	\$ (400,573)	\$ (488,296)	\$ (607,135)
<b>Net Operating Income</b>		\$ 5,470,067	\$ 5,992,870	\$ 3,062,419	\$ 3,203,752	\$ 452,447	\$ 465,987	\$ 480,536	\$ 494,948	\$ 507,327	\$ 514,590	\$ 511,754
<b>Development/Reversion</b>	\$ 17,136,000											\$ 6,299,204
<b>Cost of Purchase/Sale</b>	\$ (60,000)											\$ (125,984)
<b>Property Before-Tax Cash Flow</b>	\$ (17,086,000)	\$ 5,470,067	\$ 5,992,870	\$ 3,062,419	\$ 3,203,752	\$ 452,447	\$ 465,987	\$ 480,536	\$ 494,948	\$ 507,327	\$ 6,687,810	
<b>Internal Rate of Return</b>	<b>12.07%</b>											

Exhibit 4

**Needham Junction Parking Scenarios**

Current Scenario		
	Approximate # of Spaces	Footprint
Commuter Parking		
Lot A (east of VFW)	70	29,000
Lot B (corner of Junction Rd. & Chestnut)	50	18,900
Lot C (scattered along Junction Rd.)	60	11,690
Existing Residential	5	n/a
VFW Parking	35	14,000
YMCA Attached	20	7,760
YMCA Auxiliary Parking	25	9,500
<b>Total</b>	<b>265</b>	<b>90,850</b>

		Footprint	Efficiency of garage (sq ft per vehicle)	Levels
Scenario 1 (two story garage)				
Garage replace Lot A	184	29,000	315	2
Lot B	0	0		
Lot C	60	11,686		
Existing Residential	5	n/a		
VFW Lot	0	0		
YMCA Attached	20	7,760		
YMCA Auxiliary	25	9,500		
<b>Total</b>	<b>294</b>	<b>57,946</b>		
Available Land for Development		51,200		
Proposed Greenspace		14,000		

		Footprint	Efficiency of garage (sq ft per vehicle)	Levels
Scenario 2 (three story garage)				
Garage replace Lot A	276	29,000	315	3
Lot B	0	0		
Lot C	60	11,690		
Existing Residential	5	n/a		
VFW Lot	0	0		
YMCA Attached	20	7,760		
YMCA Auxiliary	0	0		
Total	<b>361</b>	48,450		
Available Land for Development		60,700		
Proposed Greenspace		14,000		

