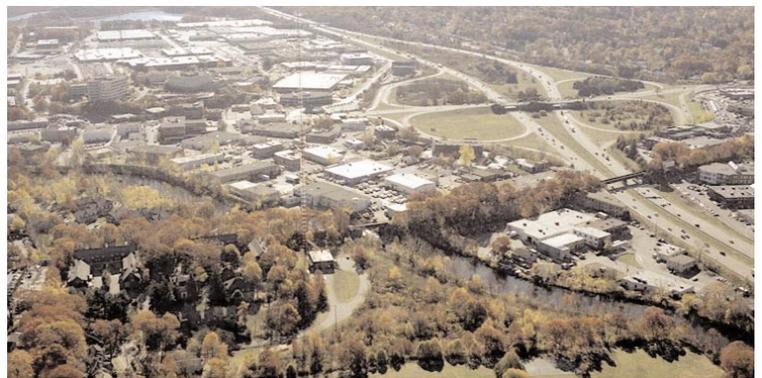


**A**s a largely residential community, Needham relies on a limited number of commercial areas for its nonresidential tax revenue. Among the most important of these is the New England Business Center/ Highland Avenue Corridor/Wexford Charles Street Industrial District, located on the eastern edge of town between the Charles River and Route 128. The 215-acre site comprises a mix of industrial, office, and retail uses; it represents 8 percent of the town's total assessed valuation and yields approximately 12 percent of all property tax revenue. Managing growth in this emerging office district is essential, as the pace of development threatens to overwhelm the site's capacity for traffic, parking and infrastructure.

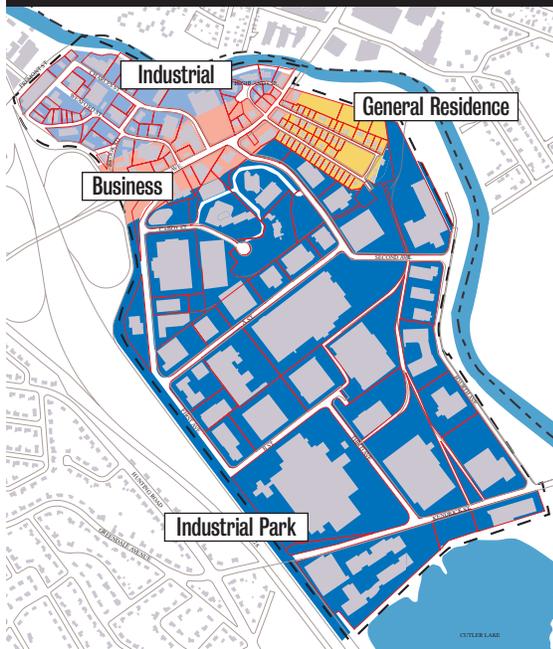
The need for coordinated and comprehensive planning is given added urgency by the convergence of residential neighborhoods, open space, industrial, commercial and office uses in a compact space that also serves as a major thoroughfare and key entryway to the town.

## Executive Summary

Land Use, Zoning and Traffic Study:  
New England Business Center/  
Highland Avenue Corridor/ Wexford  
Charles Street Industrial District



## EXISTING ZONING DISTRICTS



In response to these issues, the town issued a request for proposals in January 1999 for a land use, zoning and traffic study to plan the future of this area. With financial support from local business and property owners, the town commissioned a consultant team led by Goody, Clancy & Associates to complete the study. The consultant team also included the Louis Berger Group (traffic and transportation), Connery Associates (land use and zoning), and Byrne McKinney & Associates (market analysis). Since March 1999, the consultant team and Planning Board have worked with a 21-member Study Committee, including business and property owners, residents, and town officials, to develop this master plan and rezoning proposal.

## Project Goals

The overarching goal of the plan is to unlock the site's economic potential and create significant benefits for town residents, business and property owners, and employees. At the same time, the plan seeks to control the impact of development on adjacent neighborhoods and to address increasing regional traffic on major

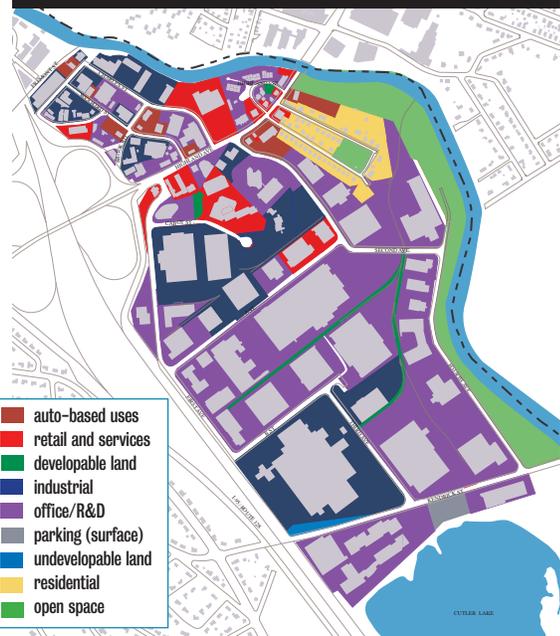
roadways. To achieve this, the plan and zoning are designed to:

- give the town greater control over development;
- create new funding to help resolve long-standing traffic problems;
- provide incentives for the private sector to create public benefits;
- improve environmental quality;
- create an attractive gateway to the town; and
- develop a unified sense of character for each of the districts and sub-areas within the site.

## The Site Today

The New England Business Center, Highland Avenue Corridor and Wexford/ Charles Street Industrial District are undergoing a transformation from manufacturing and industrial park to highly sought-after regional office district. This transformation reflects larger shifts in the regional economy, most notably strong demand for Class A office space along Route 128. The demand is most apparent south of Highland Avenue in the Industrial Park district, where several large redevelopment projects are currently under way, including the new Parametrics headquarters at 140 Kendrick Street and the Level 3 Communications

## EXISTING LAND USE



building at Cabot and A streets. The Highland Avenue corridor, traditionally dominated by smaller-scale office, retail and restaurant uses, is also experiencing development pressure. The recent construction of a Staples/Petco store is evidence of the strong demand for retail as well as office space. The Wexford/Charles Street Industrial district, although subject to the same regional economic pressures, has not yet experienced significant redevelopment. This is due in part to lot sizes in the district, which are too small to accommodate new office uses. In total, the study area contains five million square feet of commercial space, of which two million is Class A office/ R&D.

In an era when corporate offices and research facilities seek attractively landscaped sites with a variety of amenities and services, current zoning encourages large, low buildings with extensive surface parking and little open space. As a result, buildings and asphalt cover approximately 90 percent of the site, creating an unappealing visual environment and contributing to storm-water runoff. Under existing zoning, written more than 40 years ago, no building can rise higher than three stories or cover more than 35 percent of its lot. This is a significant obstacle to change, since greater densities are required to offset the cost of redevelopment. For those few lots where new construction can occur, the existing zoning provides no guidelines or incentives to ensure good site design. Finally, despite its immediate proximity to the Charles River and Cutler Lake, the area has little usable open space and offers few attractive routes for pedestrians and cyclists.

Under current zoning, the town lacks the authority to deny permits for new development. If the zoning is not amended, approximately 600,000 square feet of new development is likely to occur over the next five to ten years. The town will not be able to prevent this new development, despite the additional traffic impacts it would create. At the same time, the

town lacks the financial resources to pay for traffic improvements that would be needed to accommodate this growth.

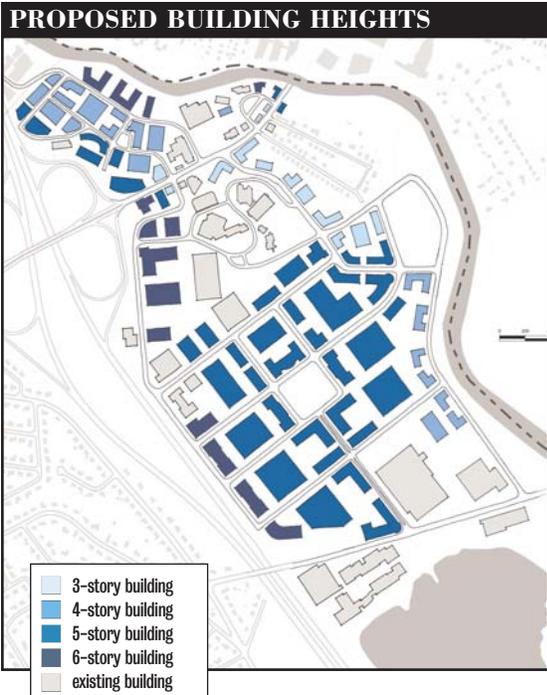
In order to address these problems—as well as the large volume of regional traffic affecting the site and adjacent neighborhoods—new development must be linked to traffic improvements. In particular, dedicated funding is required to expedite the construction of the Route 128 Add-a-Lane project in Needham, which would include a new interchange at Kendrick Street. This project, which will not be completed in the near term without additional funding, is the single most important measure that can be taken to improve local traffic conditions, keep commuter traffic off of neighborhood streets, and unlock additional development capacity on the site.

## Zoning Recommendations

The proposed zoning includes three new districts that address the needs and objectives of the study area. Each district has a unique character and market potential, based on the existing land use mix, lot sizes and property ownership pattern.

- **New England Business Center (NEBC):**  
A high-quality office park with a campus-like character.





- **Highland Commercial 128 (HC-128):** An attractive commercial street serving local employees and residents.
- **Mixed-use 128 (MU-128):** A lively mixed-use center that encourages pedestrian activity.

Use, density and dimensional requirements for each of the three districts are summarized in the table on page 9.

### Incentives for Creating Public Benefits

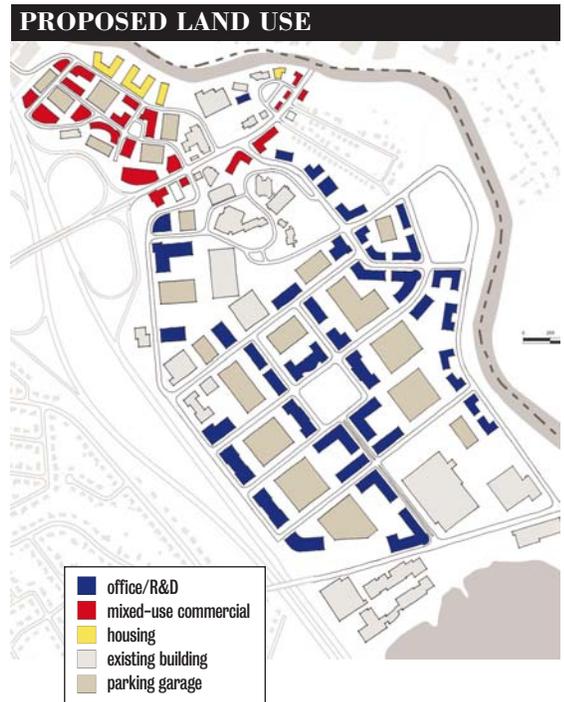
The proposed zoning includes a variety of incentives for creating public benefits, including new roads and open space. Since most of the area is privately owned, these improvements will occur only if property owners choose to take advantage of these incentives. At the same time, there is a common recognition that new roads and open space would benefit all businesses in the park and contribute to increasing property values.

In the NEBC and MU-128 districts, property owners receive an FAR bonus of 1.5 square feet by right for every 1.0 foot dedicated to public open space or roads, up to a maximum of 15,000 square feet of development. If a project is designed so that at least 65 percent

of the required landscaped area immediately abuts at least 65 percent of the required landscaped area of an adjoining lot, maximum lot coverage can be increased by 10 percent. In the HC-128 district, property owners receive an FAR bonus of 2.0 square feet for every 1.0 foot dedicated to public open space or roads, up to a maximum of 15,000 square feet of development.

### Special Permit Process

The special permit feature is one of the most important aspects of the proposed zoning. The special permit fulfills two of the plan's key objectives: to give the town greater control over development, and to create new funding to help resolve long-standing traffic problems. In essence, the proposed zoning establishes a two-tiered system, with lower densities allowed by right and higher densities allowed by special permit. As-of-right densities are slightly lower than what is possible under current zoning, while special-permit densities are higher to create a strong incentive for redevelopment that conforms to traffic improvement and site requirements. In order to grant a special permit, the Planning Board must determine



that the benefits to the town outweigh the costs after considering infrastructure, traffic, and fiscal and environmental impacts.

The special permit zoning also creates a direct link between new development and traffic improvements. Under the proposed zoning, the town can assess a special permit fee for all new development above the as-of-right density (based on FAR). For every parking space above those associated with the as-of-right portion of a development, the town will assess a special permit fee of \$1,500—equivalent to approximately \$5 per square foot of additional floor area allowed under the special permit. The fee is paid into a Traffic Mitigation Fund, to be used by the town to implement long-term traffic improvements. Payment of the fee does not exempt developers from on-site or access-related improvements, or from costs associated with other forms of infrastructure improvements, such as water, sewer, and drainage.

### **Traffic Mitigation Fund**

The Traffic Mitigation Fund, to be established as part of this zoning proposal, creates a dedicated funding source for traffic improvements in the study area and adjacent intersections. Special permit fees from new development constitute the fund's primary source of support. Monies in the fund are to be used exclusively for traffic improvements recommended in the plan and/or other traffic improvements directly related to the study area and adjacent intersections, as approved by the Planning Board. Expenditures from the fund require a majority vote of Town Meeting, in response to recommendations from the Board of Selectmen. Individuals or private groups may also donate money to the fund to be used for the same purposes and under the same conditions as the special permit fees. The town of Needham may also transfer public monies into the fund to expedite traffic improvements. The town treasurer will be the custodian of the fund, and may deposit the proceeds in a bank or invest all or part of the fund.

## **Build-out Analysis**

To determine the amount of new development that could be created under the proposed zoning, a build-out analysis was conducted for the study area. This analysis, which includes a detailed inventory of all parcels, shows that approximately 65 percent of existing properties are likely to be redeveloped in the next ten to fifteen years. Redevelopment of these properties would yield a maximum net increase of approximately 2.7 million square feet, bringing



AN AERIAL PERSPECTIVE (ABOVE) SHOWS THE EXISTING SITE; THE SAME VIEW (BELOW) SHOWS HOW FUTURE DEVELOPMENT MIGHT LOOK UNDER THE PROPOSED ZONING.



the site total to approximately 7.7 million square feet and increasing overall density from an FAR of 0.55 to approximately 0.85.

In addition to the zoning requirements, traffic capacity and market absorption will also affect the maximum build-out. The traffic improvements recommended in this plan would add capacity for approximately 2.5 million square

feet of new development, which is consistent with the expected build-out. The market survey shows that 1.0 to 3.0 million square feet could be developed over the next ten years, based on the site's projected share of regional commercial development.

## Fiscal Impact

Assuming 2.5 million square feet of new development, the project area could generate more than \$5 million per year in new taxes at full build-out. Using approximately 25 percent of the net yield to cover normal cost increases of local government, and assuming a net fiscal return of 4 to 1, the town could issue a series of \$3.5 million bonds over ten years without changing the tax rate. The total value of these bonds could be in the range of \$30 million to

\$35 million. In addition to increased tax revenue, the proposed project would generate approximately \$6.25 million in special permit fees over a ten-year period, which would be used to fund site-related traffic improvements. Finally, the projected new development would add at least \$250 million to the town's total assessed valuation over ten years, or an increase of approximately 6 percent. This would bring significant benefits for residential property owners, since the commercial tax base could shift from 17 percent of total assessed valuation to approximately 22 percent of assessed valuation. The tax yield from non-residential development could increase from 24 percent to approximately 31 percent. Any such shift would considerably reduce the relative residential tax burden and significantly broaden the local tax base, increasing Needham's ability to provide quality services.

### Recommended Traffic Improvements

PHASE	RECOMMENDATION	NEW USABLE VOLUME*	NEW DEVELOPMENT ACCOMMODATED**
1.1	Undertake traffic mitigation in adjacent neighborhoods		
1.2	Build Route 128 northbound off-ramp		
1.3	Upgrade Highland Avenue/Second Avenue intersection		
1.4	Consolidate curb cuts on Highland Avenue		
<b>TOTAL PHASE 1</b>		<b>650 trips</b>	<b>500,000 sf</b>
2.1	Conduct comprehensive traffic study		
2.2	Build Kendrick Street ramp to Route 128 southbound		
2.3	Undertake planned Highland Avenue reconstruction		
2.4	Undertake planned Kendrick Street reconstruction		
<b>TOTAL PHASE 2</b>		<b>975 trips</b>	<b>750,000 sf</b>
3.1	Carry out Route 128 Transportation Improvement Project		
3.2	Install Signal at Fourth Avenue and Kendrick Street		
3.3	Connect Wexford Street to Reservoir Street		
3.4	Realign First Avenue and Wexford Street		
<b>TOTAL PHASE 3</b>		<b>1,625 trips</b>	<b>1,250,000 sf</b>
<b>TOTAL ALL PHASES</b>		<b>3,250 trips</b>	<b>2,500,000 sf</b>

\* ADDED CAPACITY IN TERMS OF A.M. ENTERING TRIPS

\*\* NEW DEVELOPMENT THAT COULD BE SUPPORTED BASED ON A.M. PEAK HOUR TRIP-GENERATION RATES FOR PROJECTED LAND USE MIX

## Recommended Traffic Improvements

This report identifies a series of traffic improvements designed to address both current problems and future capacity needs. Recognizing that more funding will be available later in the redevelopment process, these improvements are divided into three phases, with the least expensive and most immediately feasible occurring earlier in the process. These improvements are summarized in the chart on the previous page. In addition to these recommended improvements, the town already plans to undertake a number of signal, intersection, and roadway improvements in nearby neighborhoods.

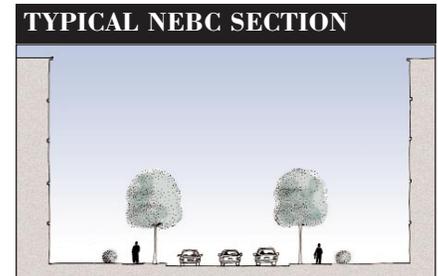
Development potential within the site is constrained by the number of trips occurring during the critical peak hour. Based on the findings of previous studies, the morning peak (7:30 to 8:30 am) is the critical time for the area. Since most site-related trips enter in the morning and leave in the evening, AM peak entering trips were used to measure capacity. This study reflects the assumption that the mode split and the ratio of through traffic to site traffic would remain constant over time. To translate traffic capacity into development capacity, ITE trip generation rates were applied to the projected land use mix. The calculation of new development capacity includes the increase in vehicle trips due to the conversion of existing uses.

## Design Guidelines

### Streetscape

Comprehensive streetscape improvements can play a critical role in improving the character and identity of each district, and enhancing pedestrian and cycle access through the site. In general, new sidewalks, curbs, street trees, and lights are recommended throughout the area.

The existing public rights of way could accommodate these improvements without any land takings. Providing designated on-street parking in some locations would reduce the need for visitor parking on individual sites, and would serve the short-



term parking needs of nearby retail and service businesses. North of Highland Avenue, where the existing rights of way are narrower, creating one-way streets in key locations would ease traffic flow and provide more space for pedestrians. The street sections illustrated here show how these improvements could be implemented, contributing to a more walkable and attractive site.

### Road Network

In addition to streetscape improvements, the site would benefit from the creation of new streets linked to the existing network. These will only be created, however, if property owners choose to take advantage of the zoning incentives for their construction. The recommended roads are intended to create a more logical development pattern and create new opportunities for street frontage. If appropriately

## RECOMMENDED NEW STREETS



designed, these streets could improve access for vehicles, pedestrians, and cyclists, and add value to adjacent properties. Adding new streets would also improve traffic flow by distributing trips through a larger system. As shown in the plan, new roads should run along existing property lines or through the center of larger sites to avoid the creation of splinter parcels.

## Open Space

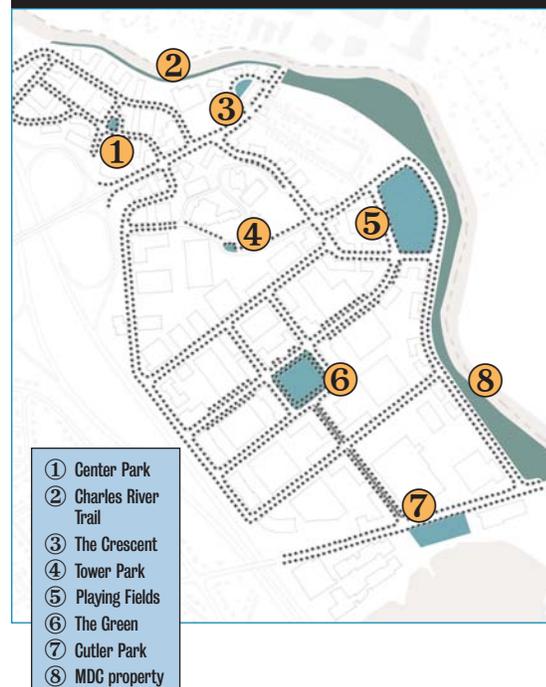
Creating new open spaces throughout the site will contribute significantly to environmental quality and increase the area's attractiveness for residents, workers, and visitors. In particular, new open spaces adjacent to the river and lake can help to create a comprehensive system of parks, pathways and trails linking the entire site. New open spaces will also significantly increase property values for adjacent sites. As with new public streets, the decision to create new open spaces will be made by individual property owners in consultation with the town.

The recommendations for open space include a variety of options, from large formal parks to smaller greens, recreational fields, and an interpretive park describing the history of the

site. The open space plan shows potential location for these sites; however, other locations may be equally suitable, particularly as opportunities arise through the redevelopment process.

To enhance and highlight the river as a unique amenity, improvements are needed to the existing MDC pathway in the New England Business Center. These improvements should maintain the existing natural quality of the area and preserve the river's edge as a riparian corridor. Several small river overlooks could also be created, providing better visual connections to the water. On the north side of Highland Avenue, a new pathway could be created next to the river if adjacent property owners choose to grant an easement on their land. Ideally, the entire river's edge should be accessible to pedestrians and cyclists, creating a continuous path from Kendrick Street north to the elevated rail bridge.

## RECOMMENDED OPEN SPACE



**NEBC DISTRICT**

**HC-128 DISTRICT**

**MU-128 DISTRICT**

LAND USE	NEBC DISTRICT	HC-128 DISTRICT	MU-128 DISTRICT
Entire district Within 350' of river	Office, R&D, accessory retail n/a	Office, R&D, retail, restaurant n/a	Office, R&D, retail, restaurant, light industrial Residential overlay permits multifamily housing
<b>BUILDING HEIGHT</b> Standard requirement Within 350' of Rte. 128 Within 350' of General Residence District Within 350' of river and/or lake Within 150' of General Residence District Within 150' of Charles River	5 stories 6 stories 3 stories 4 stories 3 stories 4 stories	3 stories 5 stories n/a n/a 3 stories 4 stories	4 stories 5 stories n/a 6 stories for residential; other uses 4 stories n/a 6 stories for residential; other uses 4 stories
<b>LOT COVERAGE</b>	50%	80%	60%
<b>MINIMUM LOT SIZE</b>	40,000 SF	15,000 SF	20,000 SF
<b>AS-OF-RIGHT F.A.R.</b>	0.4	0.3	Housing: 1.0; all other uses 0.3
<b>SPECIAL PERMIT F.A.R.</b>	Low-traffic-generation use 1.5; all other uses 1.1	1.5	Housing 2.0; all other uses 1.5
<b>SETBACKS</b>	20-foot front, rear and side setbacks. 30-foot front and side setbacks for 6-story buildings along Route 128. 50-foot front setback for parking structures. No side or rear setback required for shared-parking structures between adjoining properties.	5-foot front setback, 10-foot side and rear setbacks. 50-foot front setback from General Residence zoning district line. No side or rear setback required for shared-parking structures between adjoining properties.	5-foot front setback, 10-foot side and rear setbacks. 20-foot front and side setbacks for 5-story buildings along Route 128. No side or rear setback required for shared-parking structures between adjoining properties.
<b>MINIMUM LOT FRONTAGE</b>	100'	100'	100'
<b>PARKING REQUIREMENTS</b>	Parking structures and surface lots may not be located on corners or fronting on public parks. Surface parking may not be located directly fronting a public street.	Parking structures must have an active ground-floor use. Surface parking may not be located directly fronting a public street.	Parking structures and surface lots may not be located fronting on public parks. Parking structures must be located a minimum of 20 feet from adjacent buildings.
<b>LANDSCAPING</b>	Minimum 40% of lot area must be pervious surface. Minimum 30% of lot area must be landscaped.	Minimum 10% of lot area must be pervious surface. Minimum 10% of lot area must be landscaped.	Minimum 20% of lot area must be pervious surface. Minimum 10% of lot area must be landscaped.
<b>BUILDING ENTRANCES</b>	Street-facing facades must have at least one public entrance.	Street-facing facades must have at least one public entrance.	Street-facing facades must have at least one public entrance.
<b>BUILDING FAÇADES</b> Standard requirement Within 350' of residential district Within 350' of river and/or lake	Maximum façade length = 300' Maximum façade length = 200' Maximum façade length = 200'	Maximum façade length = 300' Maximum façade length = 200' Maximum façade length = 200'	Maximum façade length = 300' Maximum façade length = 200' Maximum façade length = 200'

THE ILLUSTRATIONS ON THE FOLLOWING PAGES SHOW POTENTIAL FUTURE DEVELOPMENT UNDER THE PROPOSED ZONING FOR EACH OF THE THREE DISTRICTS.

# New England Business Center

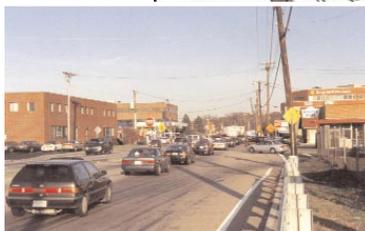


**THIRD AVENUE COULD BE TRANSFORMED INTO A GREEN BOULEVARD LINED WITH NEW COMMERCIAL OFFICE BUILDINGS.**



**POTENTIAL NEW DEVELOPMENT ALONG FIRST AVENUE COULD CREATE AN ATTRACTIVE FACE TO ROUTE 128.**

# Highland Commercial 128



**STREETSCAPE IMPROVEMENTS ON HIGHLAND AVENUE CAN ENHANCE THIS GATEWAY TO NEEDHAM.**



**HIGHLAND CIRCLE COULD BE DEVELOPED WITH NEW RESTAURANTS AND HOUSING ADJACENT TO THE RIVER.**

# Mixed-Use 128



**ZONING INCENTIVES FOR OPEN SPACE COULD HELP TO CREATE A NEW WALKWAY ALONG THE RIVER NORTH OF HIGHLAND AVENUE.**



**THE INDUSTRIAL DISTRICT COULD BE TRANSFORMED INTO A WALKABLE MIXED-USE CENTER ANCHORED BY A NEW PARK.**