

# *THE DRUM HILL AREA* *CONCEPTUAL MASTER PLAN*



Prepared for the  
City of Lowell and the Town of Chelmsford

by the  
Northern Middlesex Council of Governments  
Lowell, MA

July 2000

Funded by the  
Massachusetts Department of  
Housing and Community Development

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## **EXECUTIVE SUMMARY**

The City of Lowell and the Town of Chelmsford asked the Northern Middlesex Council of Governments (NMCOG) to prepare a conceptual master plan for improvements to the Drum Hill area in both municipalities near Route 3 and the Drum Hill rotary highway interchange.

### **PLANNING AREA**

The planning area is a 471-acre district of mixed uses bordered by Route 3, Stedman Street, Princeton Boulevard, and North Road (Route 4). Land uses include retail strip development, rental offices, office condominiums, research and development facilities, medical-surgical offices, over-55 residential uses ranging from independent living to Alzheimer's care, a business hotel, a day care center, the UMass-Lowell West Campus, the capped Lowell landfill, and both single family and multi-family residences. There are several development and redevelopment sites in the study area.

### **PUBLIC PROCESS**

The planning process was guided by the Drum Hill Advisory Committee, made up of municipal staff, Planning Board members, business owners, and residents. Community concerns and goals for the Drum Hill study area were solicited through the discussions of the Committee, two public meetings, a display of exhibit boards accompanied by a questionnaire, and interviews with business people and community leaders.

### **PLANNING ISSUES**

The principal concerns about the current condition of the study area focused on traffic and circulation, parking management, the pedestrian environment, poor streetscape and landscape standards, and the area's lack of aesthetic appeal, particularly in the case of Drum Hill Road and Westford Street.

### **RECOMMENDATIONS**

Both public and private actions are needed to create a more coherent, functional, and appealing Drum Hill area, and collaboration by the two municipalities is essential to the success of the plan.

#### **Drum Hill Overlay District**

The addition of a common overlay district to the zoning ordinances of Chelmsford and Lowell will provide for enhanced development and redevelopment character without changing the underlying zoning requirements. The regulations could be used to promote pedestrian amenities, aesthetic and environmental improvements, traffic congestion management, and improved relationships between residential and non-residential uses.

### **Traffic, Circulation and Parking**

Transportation and parking management studies should be commissioned by the two municipalities to include pedestrian and bicycle mobility and Traffic Demand Management measures for local businesses. Among the elements to be studied are:

- Access control through closing selected curb cuts and improving internal circulation
- Signalization studies
- Parking needs assessment and requirements
- Parking signage and security plan
- Shared parking management plan

### **Design Improvements and Design Guidelines**

Design improvements to the public realm and voluntary design guidelines for site design, buildings, and signage will promote a more functional and harmonious environment, raising property values and improving the experience of people who live, work, and shop in the area. Design guidelines should include the following elements:

- Pedestrian amenities
- Landscape standards
- Parking lot site design
- Façade design
- Signage design

### **Recreation**

The Drum Hill area contains substantial wetlands and green open spaces. A trail and pedestrian pathway network for walking and jogging through Technology Center will reduce the number of vehicle trips in the area and improve the environment for residents and employees. Wetland areas should be suitably managed to provide visual amenities. The capped Lowell landfill should be studied for the feasibility of low-impact recreation and nature appreciation uses, such as winter sledding and a viewing tower. A design competition for the viewing tower and other uses would attract interest and excitement about the potential of the Drum Hill area.

### **Development and Redevelopment Opportunities**

Optimum uses should be identified for large sites that are currently undeveloped or will probably be redeveloped in the near future. Uses that generate low levels of traffic, particularly at peak hours, are to be preferred.

## CHAPTER 1 - A MASTER PLAN FOR DRUM HILL

The Drum Hill area at the Chelmsford-Lowell border is a classic example of development spurred by the proximity of a limited-access highway. Growing in a somewhat haphazard fashion over the last 30 years, the area has lacked a consistent approach to planning and land use development. With the opportunity presented by the new Route 3 Improvement Project, planning officials in the Town of Chelmsford and the City of Lowell asked the Northern Middlesex Council of Governments (NMCOG) to prepare a conceptual master plan to guide future development and redevelopment in the area for greater harmony and compatibility. The core of the 471-acre planning area is the Drum Hill Road / Westford Street commercial district, but it also includes the Drum Hill Technology Center and surrounding blocks of residential, office, industrial, retail, and open space land uses. Funding for the plan was obtained by NMCOG through a Municipal Incentive Grant from the Massachusetts Department of Housing and



Community Development.

### What is a Conceptual Master Plan?

A master plan provides guidance for the future development of an area or community. Based on an analysis of existing conditions and discussion with community stakeholders, a master plan articulates goals and objectives, implementation strategies, and an action plan. A conceptual master plan differs from a standard master plan in that it provides a framework of policy directions and implementation strategies rather than a more detailed approach to specific sites within the larger whole. The analysis and recommendations in the Drum Hill Conceptual Master Plan are intended to guide Chelmsford and Lowell to set up an inter-municipal structure for pursuing more detailed studies and implementation options for the Drum Hill Area. Through this master plan, Lowell and Chelmsford will have the ability to coordinate actions in reviewing development site plans, solving traffic problems, and making design improvements. By requesting the preparation of this plan, the two communities have demonstrated a mutual interest in taking a common planning approach to the Drum Hill Area.

### Why Drum Hill Needs a Master Plan

When Chelmsford and Lowell residents hear the words “Drum Hill,” what kind of place comes to mind? A commercial strip and shopping center; a capped landfill; a jumble of retail, office, and residential buildings; a former gravel pit; a difficult interchange on Route 3; lots of traffic. The Drum Hill area, which straddles the Chelmsford-Lowell border, displays the classic elements of a town border area. As the urbanist Kevin Lynch wrote in *Wasting Away*, “when searching for the public dump or for nuisance industry in any New England town, look first along its boundaries with

adjacent towns." The city dump, gravel pits, and farms occupied the Drum Hill area, an outlying edge of both the city and the town, when Route 3 was constructed in the 1950s.

The proximity of Route 3, which reached Drum Hill with the construction of the rotary interchange in 1957, has since dominated development, attracting the automobile-dependent land uses and life styles that typify the area. The existence of the landfill, which was in use from 1947 to 1992, encouraged zoning for industrial uses and less concern with the aesthetic character of development. During the 1960s and 1970s, when traditional manufacturing was declining in this region, the industrially zoned land did not tend to attract industrial uses. Over the years, small strip malls and a neighborhood shopping center, stand-alone fast food outlets and other convenience stores, auto-oriented businesses, low-rise office buildings and apartments -- all with fields of surface parking at the street -- located in the Drum Hill area.

As the new technological economy emerged, office and industrial developers began to be more attracted to the Drum Hill area by the Route 3 connection. A 120-acre site west and north of the Drum Hill Road commercial strip and straddling the municipal border was approved for office/industrial development in the early 1980s. Named Drum Hill Technology Center, this area is nearing buildout some twenty years



later. The Lowell side of the office park (36 acres) was developed in the 1980s. The economic recession of the late 80s and early 90s resulted in the sale of 20 acres of planned office sites on the Chelmsford side of Technology Center to a developer of housing for the over-55 market. Another 20 acres on an abutting, separately owned site were added for the over-55 projects. Construction of the elderly-care facilities and housing began in the late 1990s and the final segment of the project is now nearing completion. In addition to the housing, a hotel was added to the Technology Center program. Other development on the Chelmsford side of the office park during

the 1990s includes medical offices, research and development, day care facilities, and other office uses.

### **A Case Study of Sprawl**

Through the vagaries of the business cycle over the course of the last three decades, the Drum Hill study area has become more diverse, more populous in both residential and employee populations, and more heterogeneous in land uses and design of the environment. Though still serving an important function for people in the surrounding area, the Drum Hill area exhibits all the problems increasingly associated with suburban sprawl. The combined influence of the highway, the landfill, and the lack of industrial interest in the land during the sixties and seventies tended to produce an "anything goes" development climate in the area until the last few decades. Although planners today generally favor a mixture of land uses in urbanized

areas because they provide more vitality, the way land uses are mixed in the Drum Hill area is not what planners usually have in mind. This is not a coherent and well-integrated mixed-use center. The varying uses, although often side by side, tend to be isolated from their neighbors, so that there is no contextual harmony to the area. The lack of consistent sidewalks and other pedestrian amenities promotes driving for extremely short trips, thus exacerbating existing traffic congestion. The visual incoherence and lack of "imageability" -- sufficient pattern, order, and vividness to create a sense of place -- in the Drum Hill area make it impossible at this point to encourage "contextual" development because there is no understandable context. Each parcel is developed as if in a vacuum, except for the umbilical traffic lifeline to the street.

### Challenges and Opportunities

The new Route 3 Improvement Project offers the occasion for local officials in Chelmsford and Lowell to look at the Drum Hill area again. The new interchange configuration will provide a different entrance experience at Drum Hill Road. Planning changes to the commercial district and thinking carefully about preferred redevelopment options in conjunction with the road project may open opportunities that would otherwise not be available.

There are many difficult challenges in this project. Success depends on both public and private actions and on pursuing incremental change within a clear overall concept and vision. Redesigning and retrofitting an existing area can be difficult



because of the layers of decisions already made and the inevitable inertia and assumptions built up over the years both by property owners and users. Working together across a municipal boundary is complex, particularly when it is important to balance suburban and urban ways of life in design and function. Leadership from the public sector in making investments in the public realm will give confidence to private interests that their investments will be supported by overall improvements in the area. If both the town and the city require common new standards, properties can be improved over time as they come before the town or city

planning board. Where direct regulation is not appropriate, guidelines and incentives can influence the actions of private property owners towards fulfilling the overall vision. The critical task is to coordinate activities within the context of inter-municipal and public-private partnerships.

## CHAPTER 2 – EXISTING CONDITIONS

### The Study Area and Its Context

The Drum Hill study area contains 471 acres and is bordered by Drum Hill rotary and Route 3 to the south; Stedman Street to the east; Princeton Street to the north; and North Road (Route 4) to the west. These study area boundaries were chosen to reflect circulation patterns and the proximity of a variety of land uses. The boundary between Lowell and Chelmsford bisects the study area from the northwest to the southeast.

To the north of the study area, there are Lowell residential neighborhoods at urban densities and scales made up of single-family and multi-family housing. In Chelmsford, immediately to the south of the Drum Hill rotary there is a condominium complex and a group of schools. Students from these schools sometimes make the dangerous crossing, on foot, of the Drum Hill rotary in order to reach the fast food outlets on Drum Hill Road. There are single-family residential neighborhoods on the Chelmsford edges of the study area.

### Land Uses

Zoning in the Drum Hill planning area allows a great variety of land uses. Industrial and business zoning districts permit some residential uses, and there are also exclusively residential districts in the area. There is no provision to insure locational coherence so that compatible uses and use mixes are in proximity. Land uses in the study planning area include:

- The retail strip malls and shopping centers mixed with office and apartments along Drum Hill Road and Westford Street. Retailers report that business is very good.
- Drum Hill Technology Center, originally conceived as an office, research and development, and light industrial park, now contains a variety of uses:
  - offices and R & D
  - medical-surgical offices
  - over-55 residential uses ranging from an Alzheimer's care facility to independent living condominium apartments to single-family condominium units
  - a business hotel
  - a day care center
  - two remaining development sites

The total buildout is expected to be 1.005 million square feet in office uses, 105 hotel rooms in a 70,000 square-foot hotel, and 319 units of over-55 housing.

- A sand and gravel operation now being capped with Big Dig spoils. Massachusetts Environmental Associates, formerly known as Glenview Sand & Gravel, plans eventually to offer the site for development as a brownfields project.
- The former reform school property now occupied by the UMass-Lowell Graduate School of Education. The University is expected to dispose of this property in the relatively near future.
- The capped Lowell landfill, now functioning as a limited Department of Public Works storage site, methane gas field, and urban wild.
- Low-density retail and services along Westford Street east of Wood Street.
- Office condominiums, retail stores and services along Parkhurst Road, with an athletic club at the rear of the office condo development.
- Single-family and multi-family residential land uses along the perimeters of the study area.

#### *Current Development Activity*

Three parcels on the Chelmsford side of Drum Hill Technology Center are currently under development:

- On Technology Drive, the US Environmental Protection Agency is constructing its Northeast Regional Laboratory with 66,770 square feet of building, 154 parking spaces (less than the 228 that would normally be required for an office because a laboratory use generates less traffic per square foot) and 2 truck parking spaces.
- The Wayside condominium apartment complex on Technology Drive is an independent living facility for people over 55. It consists of 72 units in three 3-story buildings plus a community center and fitness room. There will be 159 underground parking spaces.
- Across from the Hawthorne Suites Hotel on Research Drive, Stonegate Development is building a three-story 43,272 square-foot

office building. There will be office suites for up to 6 tenants and 177 surface parking spaces.



There are two remaining parcels in Technology Center, one at the corner of North Road and Technology Drive and one across from the EPA site. These are among the last significant development parcels in Chelmsford. Both are likely to be developed for office use.

In Lowell, Princeton Properties, a major developer and owner of rental apartments, is constructing a headquarters building at 115 Westford Street. The four-story building will have 33,988 square feet, with retail or services in part of the first floor and the remainder of the building in offices. There will be 32 parking spaces on the surface underneath part of the building.

### *Recent Land Use Changes*

Recent development and redevelopment includes the arrival of Wal-Mart in the former Caldor store at the Shop 'n' Save shopping center on Drum Hill Road in Chelmsford. Located in an existing mall, the Wal-Mart store has less than 100,000 square feet. A 24-unit, three-story apartment complex with 36 surface parking spaces was recently built at 39 Carl Street.

### Transportation, Traffic and Circulation

The Drum Hill Area is notorious for traffic congestion, particularly at the morning and afternoon rush hours, because of traffic exiting and entering the Drum Hill rotary at Route 3. Although traffic is not expected to grow as fast in the next 20 years as it did during the last two decades, traffic studies during the 1990s



projected that, absent any road improvements, there would be complete failure conditions at the rotary during both peak hours by 2018. The Route 3 North Transportation Improvements Project, which has been approved by the state, will widen Route 3 and reconfigure this interchange, but the precise design of the reconfiguration had not yet been chosen at the time this master plan report is being written. Although its likely impact on the Drum Hill study area cannot be predicted at this time, this major project can provide an opportunity for improving other aspects of the area. The Route 3 improvements are scheduled for completion by 2005.

## *Vehicle Circulation*

There are several congested intersections in the study area: Drum Hill Road at the rotary; Technology Drive and Westford Street; and Wood Street and Westford Street. Stedman Street also experiences high traffic volumes at peak hours. Signals were recently installed or improved at Wood/Westford and at Technology Drive/North Road. Upon full buildout of Technology Center, the developer has committed in its environmental impact filing with the state to monitor the Technology Drive/Westford Street intersection to see whether the traffic there meets a signal warrant. A 1998 study at this intersection reported that drivers on Technology Drive find it difficult to make left turns onto Westford Road to go into Lowell.

The congestion on Westford Street and Drum Hill Road encourages through drivers to search for alternate routes. Drivers coming from Technology Center and headed towards Drum Hill Rotary avoid the Technology Drive/Westford Street intersection. Local drivers from Lowell coming down Westford Street use Technology Drive as a cut-through route to get to North Road, the rotary and Route 3, and local drivers from Chelmsford going north will also avoid Drum Hill Road by traveling on Parkhurst Road and North Road.

General traffic growth in this region has been at approximately one percent annually. The change in land uses from office to residential during the buildout of Technology Center will reduce projected traffic congestion because residential uses produce less traffic than office uses. Moreover, because the new residential population tends to be retired, elderly, and less mobile, these uses will not contribute to peak hour traffic.

As noted earlier, Drum Hill Road, with its strip retail buildings served by numerous and, often, wide curb cuts and several traffic signals, has significant traffic congestion.



Although retailers benefit from slower-moving traffic that gives drivers the chance to see stores, a reputation for gridlock can also deter potential shoppers. The proliferation of curb cuts and lack of access control along much of Drum Hill Road exacerbate traffic congestion. In the short distance from the rotary to the Technology Drive intersection, Drum Hill Road has 14 separate curb cuts on the north side of the street and 10 on the south side. The opening of Wal-Mart in a space that had been vacant for many months is reported to be attracting more traffic. Parkhurst Road is a cut-through route that is likely to become more heavily traveled as a result of the opening of Wal-Mart and the Route 3 improvement project.

Transportation Demand Management (TDM) is a method of mitigating traffic congestion, parking needs, and pollution through programs that provide

commuting options to employees and other constituencies within a defined area. It is presented in the MEPA (Massachusetts Environmental Protection Act) filings for recent developments at Technology Center as mitigation for traffic impacts and is required by Chelmsford's Planning Board and Engineering Department. Currently, no businesses in Technology Center are members of the Greater Lowell Transportation Management Association and there is no indication of implementation of any other TDM measures.

The Lowell Regional Transit Authority (LRTA) operates a bus line along Drum Hill Road – Westford Street. There is a bus stop in front of the Shop 'n' Save supermarket mall.

### *Pedestrian Circulation and Safety*

Despite a sign announcing Chelmsford's enforcement of pedestrian rights in crosswalks, there are no crosswalks on Drum Hill Road – nor are there on Westford Road in Lowell. Sidewalks are very inconsistently provided in the entire planning area. On Drum Hill Road there are street edges that have an isolated ten feet of sidewalk, 30-foot curb cuts, raised strips of bituminous concrete intended to simulate sidewalks, and short landscape strips covered in mulch but without walkways. Developments along Technology Drive have been required to build sidewalks, which currently exist along that road except on the two remaining undeveloped parcels. The only pedestrian connection from Technology Center with the Drum Hill commercial area is a sidewalk on Research Drive by the Hawthorne Suites hotel that ends at the parking lot for Chelmsford Plaza, a strip mall, before reaching Drum Hill Road.

Although the study area is organized to be very vehicle-dependent, the variety of land uses leads to a surprising amount of pedestrian use. Joggers can be seen on Technology Drive during lunch hour. On Drum Hill Road and Westford Street, office workers going to lunch and to do errands, residents from nearby apartment houses, and bus passengers walking to and from the LRTA bus stop in front of the Shop 'n' Save mall are forced to walk in the street where there are no sidewalks.

The Chelmsford Planning Board has established a fund from developer contributions for Drum Hill pedestrian and sidewalk improvements. The Board now also requires property owners who are redeveloping their parcels along Drum Hill Road to construct sidewalks and actively promotes amenities that discourage vehicle use for short errands during the day by employees in the Drum Hill area.

### **Environment**

Because of its auto-dependent character and boundary location (which traditionally has attracted industrial and "unwanted" land uses), the Drum Hill Area

has several sites subject to Chapter 21E environmental regulation, most of which involve potential contamination by oil. The largest environmentally significant sites in the study area are the former Lowell landfill and the former Glenview Sand & Gravel site, now known as Massachusetts Environmental Associates.

In operation from 1947 to 1992, with final closure in 1995, the former Lowell landfill has been capped and has steep three-to-one slopes on all sides. The City has a 15-year lease with a company that monitors methane gas wells on the site, files monitoring reports with the state Department of Environmental Management, extracts the methane, and sells it to the Massachusetts Electric Company. In addition, a tank truck removes any leachate once a month and the landfill is monitored once a year for any effects on Black Brook. The Lowell Department of Public Works has a yard and shed for road salt storage on the former landfill and a composting area that is no longer used. The area is also used by the City and the National Park Service for summer storage of storm guards for bridges and curbing during road reconstruction projects. None of these activities generates much traffic on the former landfill. The DPW maintains the small road network on the landfill and mows the grass twice a year.



Though once an environmental problem, the former landfill now plays a very positive environmental role as a 56-acre grassland with two ponds. Large expanses of grassland have become a rare landscape type in eastern Massachusetts because of the decline of farming and livestock raising in this region. Isolated by its steep slopes and with limited human activity, the landfill now functions as an urban wild, home to coyotes, woodchucks and other small mammals, as well as a variety of birds, such as hawks, egrets, white and blue herons, cormorants, and geese. Turtles and other amphibians use the ponds in addition to the waterfowl.

The 32-acre former Glenview Sand and Gravel site located adjacent to Route 3 is being filled in with spoils from the Central Artery/Tunnel Project. Representatives of the owner, Massachusetts Environmental Associates, report that when the site is filled, they expect to develop it as a brownfields site.

There are substantial wetlands throughout the planning area. A Lowell neighborhood resident reported that as a child she skated on a pond on the UMass-Lowell site. Wetlands exist on many of the parcels in Technology Center. The ponds near the commercial area could function as visual or recreational amenities but now do not contribute much to the area's appearance or functionality. The most obvious example of a problematic presentation and treatment of a wetland is the pond surrounded by paving and a chain link fence in front of a strip mall on Parkhurst Road at Drum Hill Road.

Trash and litter are also a serious problem, particularly on the major non-residential streets such as Drum Hill Road, Carl Street, Westford Street, and

Parkhurst Street. The lack of sidewalks and pedestrian amenities along most of the roads in the Drum Hill Area has resulted in many "lost" strips of land that are magnets for trash and debris which never gets cleaned up. The front, side, and rear setbacks of a number of buildings are full of litter.

## Design



The Drum Hill Area retail area lacks visual coherence, yet it also fails to express the over-the-top commercial exuberance by which some suburban strips make a virtue of their lack of aesthetic harmony. The retail area along Drum Hill Road is a jumble of architectural variations on the basic one-story shed, different types of signage, varying setbacks, poorly designed parking lots without dedicated pedestrian ways, and occasional landscaped strips notable for dependence on mounds of mulch rather than planted ground covers. Many of the retail buildings date from thirty to forty years ago and do not represent the design amenities or aesthetic values found in the newest suburban retail buildings. This design obsolescence has market effects. Old-fashioned strip malls may lose shoppers to competing retail areas that offer a more appealing and convenient environment for shopping.

Landscape design in the retail areas ranges from completely absent to reasonably good. The Burger King on Drum Hill Road is an example of a substantial investment made to good effect in perennial plantings including shrubs and flowering trees, ground cover, and lawn. On other parcels, tiny plants and trees struggle to survive and have little beneficial impact. In many places, there is little or no vegetation and mounds of mulch take the place of landscaping. The tendency to over-mulch is widespread. Even where there are trees or plants, too much mulch can eventually kill the plants.

Many, though not all, of the office and R & D buildings in Technology Center are designed in a similar, red-brick idiom of no more than two floors. This is particularly true of the buildings in the Lowell part of the Park, which were designed and built at approximately the same time. The Chelmsford side of the Park has had a longer and more variegated buildout, which is reflected in the design character of the area. The non-residential buildings show less design consistency than is seen on the Lowell side, and the assisted living and residential buildings have a design character that evokes a rural New England style. The landscape design of the Technology Center buildings is variable in quality but generally superior to what is seen in most of the commercial areas.





Chelmsford has landscape requirements for new projects and redevelopment, but in general there are few design guidelines for the study area – in either municipality – except for limited signage regulations. Because much of the development is old, many sites are not subject to the new regulations.

### **Business Conditions**

The commercial district on Drum Hill Road is anchored by a supermarket (Shop 'n' Save) and a discount department store (Wal-Mart), both of which are located in the same shopping center. The Sears Hardware store is also sufficiently large to function as an anchor store, attracting customers who then may also patronize the smaller businesses. These are medium-sized stores generally serving as “neighborhood centers” for an area of about three miles radius, not major regional retail destinations. There is another supermarket nearby on Wood Street in Lowell, just north of the study area.



The remainder of the retail district is composed of five small strip malls (three one-story and two two-story buildings) with modest-sized store floorplates, and a number of stand-alone buildings containing chain food and retail outlets, a bank branch, and auto-related businesses. The small strip malls contain a mixture of independent and chain consumer retail and service establishments. Although the former Caldor Store remained vacant for many months before being taken over by Wal-Mart, there is no indication of a problem with store vacancies. The strip malls are fully occupied.

Business and property owners report that business is good. There is activity all through the day, with peaks at lunchtime – indicating the importance of the employee market to Drum Hill businesses – and in the early evening. Nonetheless, the linear and auto-oriented character of the commercial district can be a deterrent to shoppers making multiple purchases. Shoppers who have to get in their cars and enter and exit Drum Hill Road to go from one strip mall or stand-alone business to another report that they will often forgo the less important errand if moving around the commercial district looks to be too time consuming. This means fewer potential sales for Drum Hill businesses. Because through traffic avoids Drum Hill Road, spontaneous shopping is less likely to occur. The commercial district is also widely perceived as ugly. Although shoppers also find it useful and continue to patronize the stores, competing centers that can offer more appealing and up to date shopping environments will eventually attract customers away from Drum Hill unless there are design improvements.

## **CHAPTER 3 – COMMUNITY CONCERNS AND GOALS**

Community concerns and goals for the Drum Hill study area emerged through the discussions of an advisory committee, in public meetings, from a short questionnaire, and through interviews. Flyers announcing the public meetings were mailed out to property owners and residents of the area, as well as being distributed by hand to businesses.

- A Drum Hill Advisory Committee met four times during the planning period to provide information, guidance and feedback on the project. Municipal staff, Planning Board members, residents, business owners, and property owners were invited to participate.
- The first public meeting to present existing conditions and solicit concerns, ideas, and hopes for the study area was held on May 25, 2000, at The Meadow Lodge at Drum Hill, the assisted living facility in Technology Center. Twenty-five people attended, including business owners, property owners, residents, and municipal officials.
- Display boards from the public meeting were left in the meeting space, along with a brief questionnaire, so that persons who were unable to attend the meeting could find out about the master planning project and provide input.
- Property-owners, neighborhood leaders, and business owners were contacted for interviews.
- A final public meeting to present the recommendations was held on June 29, 2000 at the same location.

Community response to this project was very positive. One person who filled out a questionnaire wrote: "As a business owner [it's] great to see the two communities begin this initiative to improve the Drum Hill Area. With a co-funding improvement program I would seriously consider improving my property."

### **What's Good About Drum Hill?**

When asked to identify positive aspects of the Drum Hill study area, local stakeholders focused on its name recognition, proximity to Route 3 and easy road access, and the variety and convenience of the many stores, offering goods and services at reasonable prices, in the shopping area. They also found it positive that the balance of land uses makes Drum Hill active throughout the day and evening. It is not just a nine-to-five place. Finally, despite the traffic and activity in the Drum Hill area, it also has significant natural open spaces.

## What's Not So Good About Drum Hill?

Stakeholders had a number of specific criticisms of Drum Hill focusing primarily on traffic and circulation; parking management; pedestrian environment; design standards; and cleanliness.

### *Traffic and circulation*

There were many complaints about traffic congestion and traffic flow problems, particularly during rush hours. Many people noted that it is difficult to make left turns into Drum Hill Road. The narrowness of Westford Street makes it a bottleneck during peak traffic periods.

### *Parking management*

There appears to be sufficient parking in the Drum Hill area. However, one strip mall landlord said that there is a scarcity of sufficient quick "in-and-out" parking spaces for people who want to park directly in front of their destinations. There was also a perception that store employees sometimes take the prime parking spots, leaving many parking spots open farther away from store entrances.

### *Pedestrian environment*

Stakeholders commented that not only is the area harsh, unappealing, and unsafe for pedestrians, it is designed to actively discourage pedestrians. Many people feel that they must use a car to move between stores. Sometimes this inconvenience deters them from stopping in at other stores in the area once they have shopped at their primary destination. The lack of continuous sidewalks and of crosswalks is dangerous.

### *Streetscape and landscaping*

Related to the poor pedestrian environment is the lack of any streetscape design and the very poor landscape standards, especially along Drum Hill Road and Westford Street.

### *Aesthetic and design standards*

Most people's opinion of the design quality of the area can be summed up in this comment from one of the questionnaires: "looks like a mishmash without any overall design." Many of the building facades and signage are tired and old-fashioned (but not quaint). Individual buildings with newer design or landscape improvements cannot overcome the general appearance of obsolescence.

### *Trash and litter*

The overall aesthetic shortcomings of the area combined with its dominance by vehicles produce an impression of a place where people do not care very much about high maintenance standards. Certain properties are very well maintained and those have few litter problems. Other

properties in the area and many roadside strips are full of debris and litter, a condition which tends to attract more of the same.

## Goals and Suggested Improvements

### *Traffic, circulation, and parking*

Because traffic congestion and circulation problems are a major focus of attention, particularly on Drum Hill Road, many of the suggestions for improvements were traffic-related:

- Widen Drum Hill Road and add travel lanes and/or turning lanes
- Improve the sight distance from Technology Drive intersecting Westford Street
- Find a better method for exiting the Drum Hill area because traffic easily backs up
- Improve egress from the shopping plazas – left turns onto Drum Hill Road are impossible
- Improve the traffic flow within lots and plazas
- Close curb cuts, but make sure businesses still have good access
- Create a master plan for parking and traffic circulation
- Install a traffic signal at Technology Drive and Westford Street
- Study the need for a traffic signal at Parkhurst and North Roads

### *Pedestrian environment, streetscape and landscaping*

The need for a more pedestrian-friendly environment, particularly on Drum Hill Road and Westford Street, was mentioned by many people, with the following suggestions:

- Provide sidewalks on both sides of Drum Hill Road and connect with crosswalks
- Add trees and landscaping – establish uniform landscaping requirements (e.g. 10-15% green space on each business lot)
- Place utilities underground

### *Aesthetic improvements and design standards*

In addition to the need for a better pedestrian environment and more landscaping, other design improvements were also suggested:

- Create a central focus point and theme with some public open space and provide benches, statues, art, etc.
- Improve store facades – establish design criteria and models to guide façade improvements
- Provide low-interest loans as an incentive to private owners to make design improvements

- Seek grants to make improvements to the area
- Redevelop the landfill into a public park

### **Building Support for Positive Changes**

Development in Drum Hill has proceeded in a haphazard way over the years. Like many areas that straddle municipal borders, the Drum Hill area has attracted land uses like the Chelmsford gravel pits and the Lowell landfill. The proximity of Route 3 first attracted auto-oriented retail for the “easy-on, easy-off” location, rental apartments expanding from Lowell neighborhoods, and later made undeveloped land in the area – Technology Center -- attractive for business development. However, due to the vagaries of the business cycle, undeveloped parcels became attractive to a burgeoning residential type, the over-55 development. The two municipalities have tended to focus on growth and land use issues in other parts of town.

Drum Hill has been successful in meeting important needs for the two communities, but no one finds it a particularly attractive or functional place. With the Route 3 improvement project nearly underway, this is an opportune moment to focus on bringing Drum Hill into the 21<sup>st</sup> century.

## CHAPTER 4 – RECOMMENDATIONS

Because so much of the Drum Hill area is already developed, improvements will take place incrementally over time. However, it is essential that the Town of Chelmsford and the City of Lowell join together to spell out the details of the concepts in this master plan, so that both public improvements and private redevelopment can be guided to produce a coherent, integrated, functional, and aesthetically pleasing Drum Hill area in the next generation. The program for improvements to the Drum Hill area should include regulatory measures, incentives, voluntary guidelines, and a joint approach to Drum Hill's relationship to the Route 3 improvement project. The recommendations presented below will have most success if pursued as an integrated program. In particular the recommendations on public realm improvements, regulatory changes, transportation, pedestrian networks, and parking are designed to be mutually reinforcing.

### Improvements to the Public Realm



By making public investments in improving an area, municipal governments give confidence to private property owners that it is worth it for them to invest in their own properties. The public realm of the Drum Hill study area – streets, sidewalks, and public spaces – needs to be upgraded. A streetscape improvement plan and project in conjunction with the transportation and parking plan recommended below for the study area as a whole would provide the leadership needed to change the appearance and image of the Drum Hill area. Simple measures, such as sidewalks and street trees, can have great impact in softening the visual effect of large parking lots, as can be seen in this photo of the Linden Street shopping center in Wellesley.

The public realm improvements to Drum Hill Road and Westford Street should include:

- Continuous concrete sidewalks
- Street trees
- Bus shelter and benches at the bus stop
- Pedestrian scale lighting
- District identification at the entry to Drum Hill Road from Route 3, through special landscaping or other treatments
- Buried utilities

Another important role for local government is improving public trash and litter control and enforcing clean site management by private entities. Trash collection and litter pickup, placement and emptying of trash barrels where

appropriate, and enforcement of local regulations can help improve the visual image of Drum Hill.

### **Regulations – Joint Drum Hill Zoning Overlay District**

Addition of a common overlay district to the zoning ordinances of Chelmsford and Lowell can provide for a more coherent, harmonious and functional environment on Drum Hill Road, Westford Street, and Wood Street. Overlay districts are zoning mechanisms that add requirements in a specific area without changing the underlying zoning. As properties are redeveloped by their owners, they would be required to include elements that would enhance the pedestrian environment and create pedestrian networks; manage traffic circulation and mitigate congestion; and provide for environmental and design improvements. These improvements should be designed to make Drum Hill a much more functional mixed-use area where the different land uses in close proximity add value to one another, rather than creating a sense of disharmony and confusion.

One model for such an overlay district is the Highway Overlay District Regulations enacted by both Framingham and Natick for their common Route 9 corridor. Essential elements of those regulations are as follows:

- *Purposes*

The regulations provide parallel and consistent zoning in both municipalities. The goals that the regulations are intended to achieve are a harmonious and coherent development character, better management of development intensity, mitigation of congestion, and enhancement and promotion of environmental and aesthetic quality.

- *Method*

The regulations offer greater density than allowed by right in return for providing amenities that benefit the public and compensate for one or more specific effects of increased density.

- *Incentives: Density Bonuses*

Greater development density – measured in FAR (Floor Area Ratio) -- is permitted when additional public amenities are provided such as parks, excess pervious landscaping, off-site sidewalks, and bikeways. Increased FAR is also possible where coordinated development is designed to improve access, reduce the number of curb cuts, improve signage, and unify landscaping. Factors used in the consideration of increasing the maximum FAR include the impacts on traffic, municipal services and facilities, and the character of the neighborhood.

- *Open Space Requirements*

The requirements are applied to any structure which requires a minimum of 10 parking spaces or when changes to the building or its use would require the addition of 10 parking spaces. The regulation requires a minimum ratio (according to use types) of land surface to be in pervious landscaping or natural vegetation, excluding wetlands in both components of the ratio.

- *Dimensional Regulations*

Dimensional regulations are related to distance from residential districts.

- *Landscape Requirements*

The regulations set performance objectives to enhance the visual quality of the area, to encourage the creation and protection of open spaces, to avoid increases in impervious surfaces, to protect and preserve the area's ecological balance and to ensure that landscaping is an integral part of development. Among the methods stipulated to meet the performance standards are buffer strips to create treelined roadways, visual barriers between uses, visual relief from broad expanses of pavement and parking, and definition of logical areas for pedestrian and vehicular circulation. Standards include specifications for the depth of buffer strips and the composition, arrangement and other standards for plant materials as well as specific detailed requirements for opaque screens, berms, and mulches. Requirements for parking lot landscaping in order to break open parking fields into buffered sections receive special attention.

According to Framingham planners, new or redeveloped properties along Route 9 since the enactment of these regulations presents a much higher aesthetic standard and is easily distinguishable from parcels developed the old way. The improvements have occurred without any developer asking for increased density. This demonstrates that developers will often respond positively if they are given clear direction and standards to meet. In the case of Route 9, developers and retailers have understood that creating a more attractive shopping environment has business benefits. (See the Appendix for a copy of the Framingham Highway Overlay District Regulations.)

### **Moving Around – Mobility for Vehicles and Pedestrians**

Traffic congestion, pedestrian safety, and circulation problems were among the most important concerns voiced by community members. In order to address these concerns the two municipalities should commission a transportation study for the Drum Hill area that includes attention to providing for and promoting

pedestrian and bicycle mobility and to Traffic Demand Management measures for the businesses in the study area. Among the issues that should be included are:

- Location of crosswalks and pedestrian-activated red lights
- Access control through closing selected curb cuts (with associated improvements to internal circulation within and among linked parking lots)
- Design of a trail, pathway, and sidewalk system through Technology Center and to connect Technology Center properties to the Drum Hill commercial district
- Methods of organizing, implementing and maintaining such a system on parcels with multiple ownership
- Study possible signal at Technology Drive and Westford Street
- Study possible signal at Parkhurst and North Roads
- Study possible closing of Carl Street at the Technology Drive end so that all traffic on Carl Street is local to the street, eliminating cut-through traffic on this narrow street
- Creation of a Drum Hill Traffic Management Association or a sub-group within the Greater Lowell Traffic Management Association to provide alternatives to single-vehicle occupancy commuting for employees in the Drum Hill area

Some community members suggested widening Drum Hill Road as a way to improve traffic circulation. Although this might seem the logical solution to traffic jams, it has disadvantages. Widening the road would not cure the bottlenecks at locations such as Wood and Westford Streets, which contribute to the traffic on Drum Hill Road. Traffic moving at much greater speeds would not enhance the pedestrian experience. Because much of the congestion is caused by vehicles constantly entering and exiting through the many curb cuts, a more functional and controlled access system, combined with the reconfiguration of the Route 3 ramp system, might prove to be a satisfactory way of keeping traffic moving steadily but at a moderate rate of speed.

### Parking

Although there are probably enough spaces in the aggregate to satisfy parking needs in the Drum Hill area, improvements in the organization, management, and design of parking lots also need to be put into place. A parking study in conjunction with the transportation study recommended above should include the following:

- Parking needs assessment and requirements
- Parking signage plan
- Shared parking plan with attention to internal circulation, management issues such as liability and snow storage, and how to accommodate changes in land use with different parking requirements

- Security issues including lighting

Shared parking and improved parking management would be an integral part of a plan to make curb cut elimination and better access control successful. An improved pedestrian environment along the street and within parking lots will also increase shoppers' willingness to walk between stores and reduce the perceived need for excessive "convenience" parking directly in front of every store.

### **Open Space, Environmental and Recreational Resources**

The open spaces and wetland resources in the Drum Hill study area could be more effectively used to contribute to the appearance and amenities of the area. As noted earlier, a trail or pathway network for walking and jogging through Technology Center parcels and connecting to sidewalks and the retail district would be a valuable amenity for both residents and employees of Technology Center and reduce the number of vehicle trips around the area. This system would require organization of a series of easements and a management plan. The ponds and wetlands in Technology Center and visible from Drum Hill Road and Westford Street should be restored as visual and recreational amenities.



In addition, long-term recreational opportunities at the capped landfill compatible with its environmental value should be investigated. At present this 56-acre site has limited use by the Lowell Department of Public Works and the City has a contract to sell the methane gas vented from the landfill. The landfill was in use until the end of 1992 and final closure occurred in 1995. Because of the limited human activity on the site and its steep slopes, it now functions as an urban wild, providing grassland, pond, and scrub forest habitat for birds, small mammals, amphibians and other animals. The former landfill has become an "urban wild" providing a refuge for nature in an urbanized environment, particularly because of the large expanse of grasslands which are becoming rare in eastern Massachusetts. The habitat value of this site is worth conserving.

Some recreational use of the former landfill would also be appropriate. The use of capped landfills for recreational purposes is becoming increasingly common, especially in urban areas where open space is scarce. A successful example of this kind of project is Danehy Park in Cambridge, MA. Active recreational uses must contend with the potential for settling and other problems. The Lowell site is currently appropriate for passive uses, such as nature appreciation and winter sledding on selected slopes. The high elevation of the site combined with the potential for nature appreciation activities would make it ideal for a viewing tower. A functional and aesthetically interesting tower could become a symbol of the Drum Hill area, provide a way for local residents to use the landfill site without affecting the methane gas collection contract which will continue for some years, and leave the habitat values intact. A competition for design of the

tower would create an opportunity to publicize the Drum Hill improvement initiative and to help create a new identity for the area.

### **Design Guidelines**

In addition to the regulatory requirements of the overlay district, Chelmsford and Lowell should provide property owners with common design guidelines for site design and amenities, landscaping, and façade and signage design. In the form of a packet or booklet, the design guidelines should show examples of desirable and undesirable design solutions in drawings or photographs, and explain the reasons for the preference. Most developers and property owners appreciate clear guidelines that tell them what the community wants. The guidelines help property owners make decisions about improvements that contribute to a more harmonious overall aesthetic effect. If they need to get planning board approval for changes, they are more likely to present acceptable plans if they have followed preexisting guidelines. Local financial institutions should be asked to offer loans at advantageous rates to businesses and property owners who wish to make improvements that comply with the design guidelines and the master plan.

### **Development Opportunities**

The Drum Hill study area still contains development potential on several large parcels and there are also significant redevelopment opportunities. The last parcels in Technology Center, the UMass-Lowell West Campus, and the former gravel pit are the major sites. In addition, the commercial strip along Drum Hill Road and Westford Street is ripe for redevelopment.

#### *Technology Center*

Of the two remaining parcels in Technology Center, one is expected to be developed for office use in the near future. The final parcel, which is located on the corner of Technology Drive and North Road, could attract a variety of uses. It is across Technology Drive from the Alzheimer's facility. Given the traffic issues in the area, a use with relatively low traffic generation at peak hours would be preferable. R & D facilities would fit that profile, since they typically have fewer employees per square foot than regular office uses. Alternatively, another independent living complex for the over-55 population would also be appropriate, adding to a critical mass of residential uses at the Chelmsford end of Technology Center.

#### *UMass-Lowell West Campus*

In the northern section of the Chelmsford section of the study area, the West Campus occupies a site off Princeton Boulevard overlooking Technology Center on a hill that provides wide views. A former reform school, the site has two



ponds, mature trees in spacious lawns, five large nineteenth-century red brick institutional buildings, and a few additions and structures from later periods. Princeton Boulevard in this location is a two-lane, relatively narrow road that is predominantly residential in character. To the south, at the foot of the hill, is another residential area – the single-family condominium subdivision for over-55 residents. (The subdivision's

location used to be a gravel pit, which accounts for the somewhat abrupt slope from the West Campus site.) One of the large red brick buildings remains boarded up and other site conditions indicate that the university is not interested in making investments there. The university plans to dispose of the site in the relatively near term.

Redevelopment of this site requires sensitivity because of the surrounding residential communities, the limited capacity of Princeton Boulevard, and the character of the site itself. Institutional or residential uses would be preferable. Adaptive reuse of the historic buildings should be given consideration and preservation of important landscape elements, such as the mature trees, the ponds, and the topography should be given high priority.

*Brownfields Site*



The former Glenview Sand & Gravel gravel pit now owned by Massachusetts Environmental Associates will be a significant brownfields site available for development south of the former landfill and adjacent to Route 3. At this time, the owners have not indicated that they have a specific use in mind, but are waiting for the redesign of the Route 3 interchange at Drum Hill. Access to the site is from Stedman Street, which has a mixture of relatively low-density business and residential land uses. Preferred uses would not overburden the roads during peak hours but would still

take advantage of the proximity to Route 3 while contributing to upgrading the character of the Drum Hill study area. The perennial low-traffic favorite, R & D, would be a possibility. Another potentially compatible use for the area would be a family entertainment use that could work well with the retail district.

*Redevelopment of the strip shopping centers*



Most of the shopping centers and strip malls on Drum Hill Road and Westford Street are over twenty-five years old and are ripe for redevelopment. Their building and site design represent an old-fashioned sprawl-style retail character that is hostile to pedestrians. Parking lots are inefficiently laid out and have little or no landscape amenities. All over the country, shopping centers of this

type are increasingly being redesigned to create a more pedestrian-friendly, human-scale ambiance reminiscent of a village or small town. This can be accomplished by repositioning retail buildings towards the street edge and relocating most parking to the side and rear; providing attractive, dedicated walkways for pedestrians to get from their cars to the shops and to move from shop to shop; and providing generous landscaping on both public and private property to mitigate the effects of traffic and parking. (The Appendix includes diagrams on shopping center redevelopment.)

*"Many suburban strips, based on outdated 'whatever, wherever' plans do not take into account changing demographics and consumer demand for more ... walkable facilities."*

Eugene Fox, Kohn Pedersen Fox,  
ULI Reinventing America's  
Commercial Strips Charrette

Public improvements combined with design guidelines and incentives such as loans can encourage private property and business owners to redevelop their properties. By keeping the design guidelines and the overall vision and goals for the Drum Hill area in mind when advising on redevelopment projects that require permits, municipal officials and boards can encourage owners to make design changes that will enhance the area.

The Urban Land Institute (ULI) recently held a charrette on "Reinventing America's Commercial Strips" bringing together experts in architecture, urban design, land planning, transportation, real estate development, marketing and public policy. The conference resulted in a series of guidelines for redevelopment of strip retail environments, many of which are relevant to the Drum Hill area:

- "Ignite the public leadership of the area and nurture public/private cooperation, using a marketing plan that fosters communication between all parties, including area residents
- Anticipate evolution of the market, in terms of demographic demand and changes in the retail sector
- Know the market well enough to properly plan for revitalization covering short- and long-term needs
- "Prune" the retail-zoned land. A surplus of retail-zoned land makes it easy to simply abandon existing structures and build others, contributing to sprawl
- "Pulse" the development, creating specific focal points for intense development connected by less densely developed areas or by open space
- Tame traffic, using roads as seams to connect various portions of the development, and providing pedestrian routes that minimize conflict with traffic. If possible, try to avoid using roads as edges that divide development and encourage faster driving speeds
- Create a "place," or a sense of community that is appealing from a variety of perspectives, including safety, comfort, dining and physical attractiveness
- Diversify the character of the development, providing a variety of uses beyond retail
- Eradicate ugliness by focusing on wide median strips with mature trees, ample lighting and well-landscaped parking areas

- For public officials – put your money and regulations where your policy is, with zoning that complements, rather than inhibits, development strategies; and by leveraging public investments such as government offices or post offices into large-scale, mixed-use developments.”<sup>1</sup>

With this Master Plan, the City of Lowell and the Town of Chelmsford have already begun to follow ULI’s principles. Highlighted in this list is the critical importance of engaging the private sector to work with the public sector.

**Joint Activities**

Improvement of the Drum Hill study area depends on successful cooperation between the Town of Chelmsford and the City of Lowell. The creation of this master plan is just the first step. Continuing communication and coordination are essential to accomplish the goals of this plan. It is recommended that the ad hoc advisory committee for this project be formalized as the Joint Lowell/Chelmsford Drum Hill Advisory Committee. Members of the Committee should include representatives from the following groups:

- Chelmsford Planning Board
- Lowell Planning Board
- Chelmsford Conservation Commission
- Lowell Conservation Commission
- Chelmsford municipal staff (planning and engineering as needed)
- Lowell municipal staff (planning and engineering as needed)
- Business owners
- Property owners
- Residents

In addition, subcommittees or working groups on circulation and parking, design guidelines, zoning, and funding options for the next steps of the planning process would be desirable.

More private sector participation should be solicited by asking the business organizations in the two municipalities, the Chelmsford Business Association and the Greater Lowell Chamber of Commerce to designate members of the Joint Committee. Property and business owners were asked to be members of the ad hoc advisory committee for this project, but although many of them were willing to be interviewed and to come to the public meetings, they did not participate actively in the committee meetings. They are interested in seeing improvements to the area, but are waiting to see the public sector take the leadership role. As the two municipalities begin to follow through on the

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<sup>1</sup> “ULI Experts Look at Reinventing America’s Commercial Strips,” Washington, DC: Urban Land Institute, June 7, 2000.

recommendations of this Master Plan, the business community will undoubtedly become more interested in participating.

<b>ACTION PLAN: WHAT – WHEN - WHO</b>		
<i>What</i>	<i>Who</i>	<i>When</i>
Formally designate Joint Lowell/Chelmsford Drum Hill Advisory Committee to study joint actions and funding possibilities for <ul style="list-style-type: none"> <li>▪ Regulatory changes (zoning)</li> <li>▪ Parking, traffic and pedestrian safety and circulation</li> <li>▪ Transportation demand management</li> <li>▪ Streetscape and other public real improvements</li> <li>▪ Design guidelines</li> <li>▪ Open space uses and improvements</li> </ul>	Lowell City Manager; Chelmsford City Manager; Chelmsford Business Assoc. (CBA); Lowell Chamber	Fall 2000
Convene business and commercial property owner meetings	CBA and Lowell Chamber	Fall 2000
Solicit participation by local financial institutions for private redevelopment assistance	Lowell and Chelmsford City Managers	Fall 2000
Parking and circulation master plan to include analysis and recommendations on <ul style="list-style-type: none"> <li>▪ Location of crosswalks</li> <li>▪ New traffic signals</li> <li>▪ Pedestrian-activated red lights</li> <li>▪ Access control and closing of curb cuts</li> <li>▪ Pedestrian circulation system</li> <li>▪ Parking management</li> <li>▪ Transportation Demand Management</li> </ul>	Joint Committee to see funding and prepare RFP	RFP: early 2001  Plan: late 2001
Improve public trash collection and litter pickup, provide trash barrels and empty them, enforce clean site management by business owners and/or upgrade local ordinances to ensure owners are responsible for cleanliness on their sites	Local governments – DPW, Board of Health	Ongoing
Prepare façade, site design, and landscape design guidelines	Joint Committee seek funding/assistance and prepare RFP	RFP: early 2001 Report: late 2001
Prepare zoning overlay language and present for approval	Municipal staff for approval of Joint Committee, Planning Boards and City Council/Town Meeting with assistance of staff	Fall 2000 – Fall 2001
Pursue funding for district entry enhancements (landscaping, markers) through Route 3 project	Joint Committee; Planning and Engineering Depts.	Fall – Winter 2000
Pursue funding for Drum Hill Road and Westford Street streetscape improvements	Joint Committee; Planning and Engineering Depts.	2000-2001
Promote TMA participation by businesses	Greater Lowell TMA	Fall 2000 and ongoing
Encourage Lowell landfill recreational use in Lowell open space planning – organize a design competition for a viewing tower and other low-impact uses	Lowell Planning Department	2000-2001; Open Space Plan Update cycle
Landfill recreational use feasibility and design plan	Lowell Planning Department	3 years before end of landfill gas contract
Building and site improvements and repositioning of retail buildings to the street edge with most parking to side, rear, or in internal fields	Private owners	As redevelopment occurs

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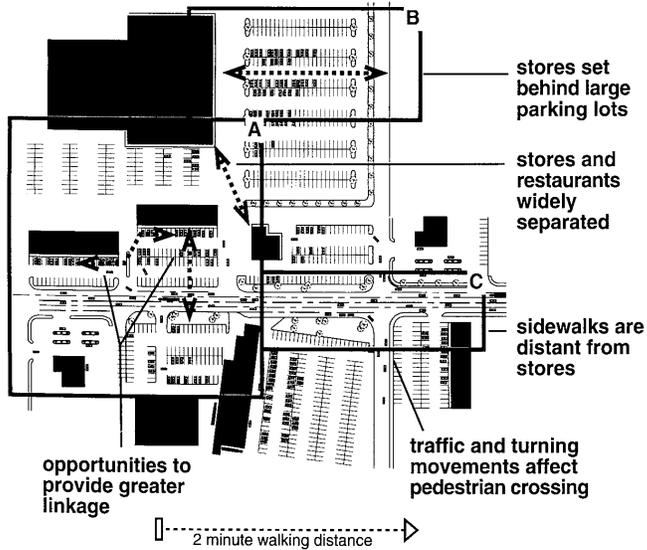
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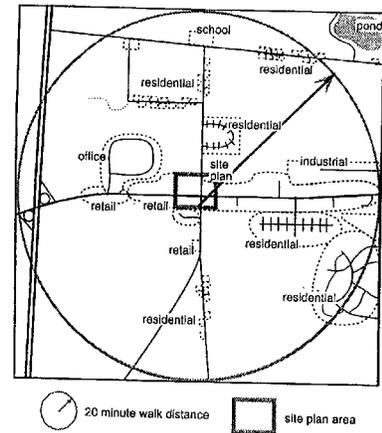
## APPENDIX

- Pedestrian-Friendly Redevelopment Diagrams
- Framingham Highway Overlay District Regulations
- Inventory of Drum Hill Study Area Non-Residential Parcels

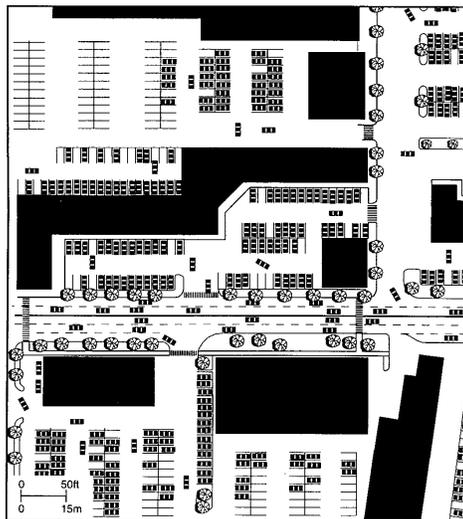
# Making Commercial Strip Development More Pedestrian-Friendly



**Land Uses Surrounding Commercial Strip**



Commercial strips exist along the highway with residential or office land uses often located adjacent, behind the commercial zone.



A – Shopping plazas can be retrofitted to provide increased density and opportunities to park once and walk between stores. Redevelopment should occur at the sidewalk edge with parking in the rear. Shared parking lots should be encouraged.

DRUM HILL MASTER PLAN PARCEL INVENTORY

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI			
Parcel Information							Location of Parking					Number of Structures					Signage Types					Amenities and Condition															
Address	Map	Lot - Parcel	Zoning	Parcel Size - acres	Paved Area - acres	# Curb Cuts	Spaces #	Front	Back	Side(s)	Structure	# of Stories	Total Sq. ft.	Use	Sq. Ft.	# Loading Docks	Free standing	Illuminated	Projecting from Blimp	Roof	Billboards	Pedestrian scale lighting	Waterproofing	Waypoints	Sidewalks	Crosswalks	Traffic Signals	Landscaping	Good	Average	Poor						
<b>CHELMSFORD PARCELS</b>																																					
Augusta Way (Private Way)	20	74-11	1A	25.330		3	142				72	2	Condo/ 38 Units age restricted																						Village at Meadowood, 55+ Condos		
Research Place Lot 6B	26	101-1	1A	2.200		2	141				1	2	office		1																				Linear Tech		
Technology Drive 1	26	101-1	1A	8.488			0						Undeveloped Land across from the Atrium																						Vacant; Owner: Drum Hill Development 4 Park Dr. Westford		
Technology Drive 2	26	74-10	1A	4.630		2	32				1	1	adult care		0	X																			A Atrium at Drum Hill/ Allis. Facility; chain link fence around we+Alltland		
Research Place 11	26	101	1A	2.2 AC		1	110				1	1	Child Care		0	X																			A Knowledge Beginnings Day Care		
Research Place 15	26	101-2	1A	2.950		1	60				1	2			1	X																			G Vacant		
Technology Drive 4	26	74-6	1A	8.520		3	99			30	1	1	55+ Residential			X																			G Meadow Lodge at Drum Hill/ Assisted Living Community		
Technology Drive 11	27	101-1	1A	11.970		1	227				1	2	Vacant		1	X																			A Vacant		
Drum Hill Road 17	27	101-4	CB	0.920	0.8	2	72				1	2	Fast Food		1																				G McDonalds		
Drum Hill Road 20	27	109-2	CC	0.335			73				1	1	Bank		1	X																			G Enterprise Bank		
Drum Hill Road 21 - 29	27	101-5	CB	0.775			128	60	55		1	1	Retail			X																			G Strip Mall with Classic Flowers		
Drum Hill Road 41 - 65	27	101-6	CB	3.010			20				1	1	Retail																						Strip Mall		
Technology Drive 6	27	74-2	1A	10.200		1	154				1	1	Office/Lab		1																				EPA building; under construction		
Drum Hill Road 71	27	101-9	CB	2.920	0.57	2	10	10			1	1	service station			X																			P Sidewalk continues to Tech Drive/Cumberland Farms		
Drum Hill Road 71	27	101-9	CB	0.970			66	22	22	22	1	2	Gasoline station																							3 retail shops, 2 services upstairs, driveway and parking are connected to Drum Hill Plaza	
Drum Hill Road 77	27	101-7	CB/1A	2.860	2		80	40	40	3 in 1	1	1	12 retailers		1+	X																			Sidewalks are paved, no landscaping		
Parkhurst 85	27	101-8	CB	3.440		2	177				1	3	Office/Lab		1																				Shopping Mall/ Lowell Blueprint		
Research Place Lot 22	27	101-8	1A	2.820		2	10		10		1	1	Service Station with Store			X																			A Cumberland Farms, Landscaping efforts - too much mulch.		
Technology Drive lot 4B	27	101-2	1A	4.200		2	35			20	1	2	Medical building																						Lowell General hospital at drum Hill		
Drum Hill Road 40	32		1A	18.500		2	941				4	1	Shopping Center		5																				P Shop and Save, Wal-Mart		
Tech Drive	27	74-1	1A	4.130			199				1	1	Retail		0																				Vacant		
Tech Drive	27	74-3	1A	3.435			0																												Vacant for sale		
Dalton Road 175	52	222-4	RB				168				4	3	Retail																						Stores, Apartment Complex		
Courthouse Lane 1	32	110-7	CB	1.607		2	170				1	2	Retail		1																				Condo/ Office		
Wesley Street 10	82A	7-1387	CC	0.270		3	115				1	3	Retail		1	X																			G Service Station/ Shop		





