



OSGOOD CORRIDOR REDEVELOPMENT PLAN

North Andover, Massachusetts

Prepared for the Town of North Andover by

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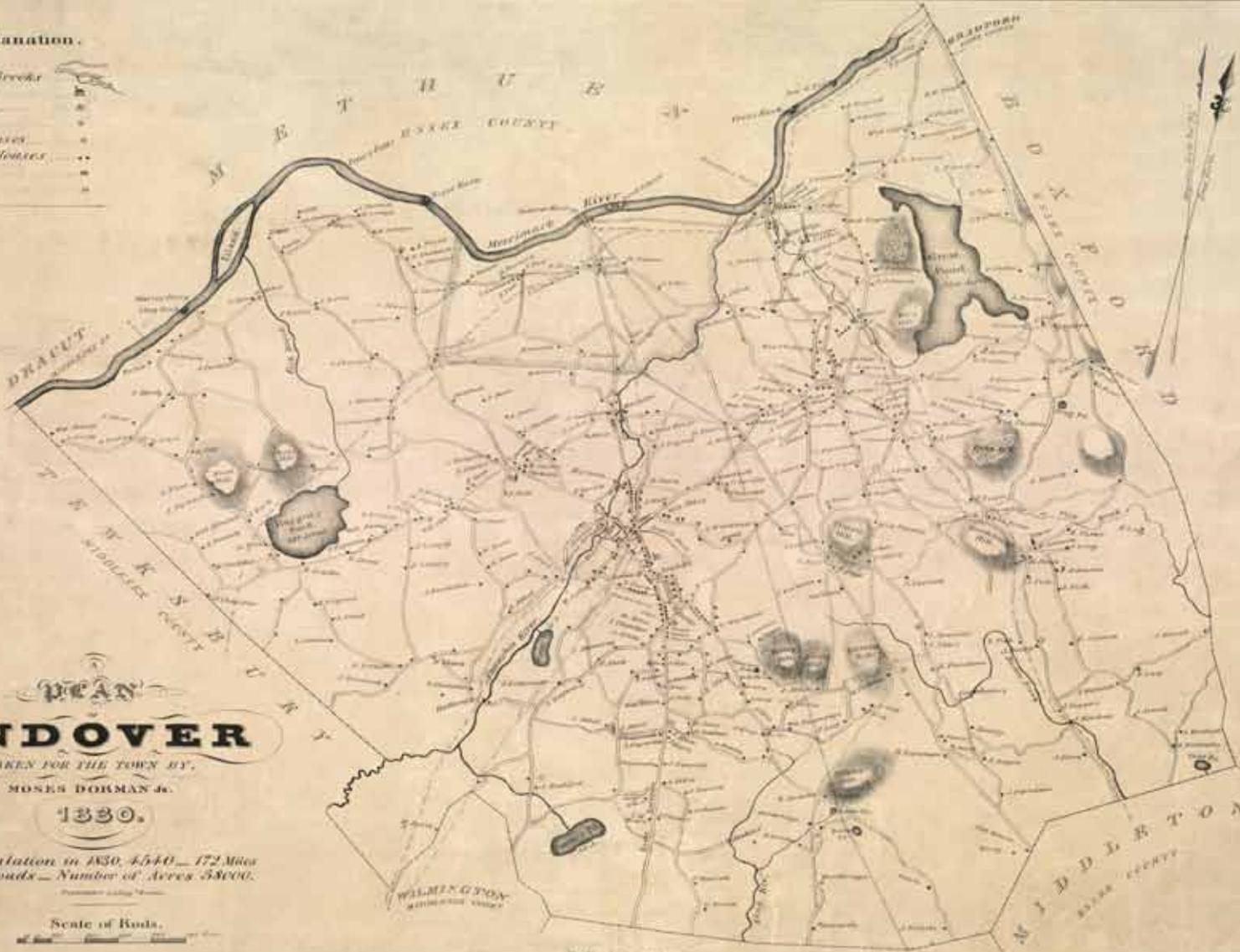
Department of Landscape Architecture and Regional Planning
Economic Development Practicum September 2013

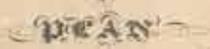
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Explanation.

- Roads
- Rivers & Brooks
- Churches
- Academies
- Bank
- School Houses
- Meeting Houses
- Factories
- Mills




ANDOVER
 TAKEN FOR THE TOWN BY
 MOSES DORMAN JR.
 1830.

Population in 1830. 4,540. — 172 Miles
 of Roads — Number of Acres 58,000.

Scale of Rods.


I. INTRODUCTION

Project Background and Process

The Osgood Corridor sits astride a two-mile stretch of Route 125 in the northern corner of North Andover, Massachusetts. It begins at Osgood Street's intersection with Sutton Street, and proceeds northerly to the town's border with the City of Haverhill. The Corridor includes all parcels along Osgood Street, as well as some larger parcels to the east and west which are set back from the road. Today, the Corridor is home to a variety of uses, including an airport, agriculture, private sanitation and recycling companies, housing, light industry, and commercial interests.

The purpose of this project is to create an economic development plan for the Osgood Corridor that will capitalize on the area's existing infrastructure, transportation access, and potential as a live-work destination. Throughout the spring of 2013, a team of graduate students from the University of Massachusetts Amherst assessed the social and economic potential of the Corridor within the town. As part of the Economic Development Practicum, the team was tasked with identifying and analyzing key issues and developing recommendations for revitalization and preservation in accordance with North Andover's values.

The project team has gathered information from a number of sources: documents and reports; town officials; and industry professionals. Documents from municipal, regional, and state agencies were reviewed alongside reports from civic groups and non-profit organizations. Town officials were consulted for insights pertaining to the town, and the feasibility of potential recommendations. The team contacted industry professionals for in-depth guidance on larger-scale issues, in order to place particulars in their appropriate context.

Figure 1 (opposite): *A Plan of Andover*. Pendleton's Lithography, 1830. Credit: Norman B. Leventhal Map Center.

Following initial meetings with economic development officials in North Andover, the team drafted a project scope. The project was completed in three phases: inventory, assessment, and implementation. This report presents the output of each of these phases. The inventory examines the physical, social, cultural, legal, and commercial elements in the project area. The assessment identifies the major issues pertaining to the redevelopment potential of the site, gathered from the inventory. Guided by the assessment, the implementation phase presents the team's recommendations, and strategies for realizing them.



Figure 2: Detail from the 1830 *Plan* shows street layouts and settlement patterns that still exist today.

II. INVENTORY

Overview of North Andover

» HISTORY

All of what is now called North Andover was first part of the Andover settlement. By the 1640s, what is now known as the Old Town Center had been established, and is today home to the Commons, the First Burying Ground, and the Historical Society. On account of its abundant water, and flat, fertile soil, the area was settled early in colonial times, and the radial patterns of early agricultural cart routes determined road patterns that persist to this day. By the 19th century industrial activity encouraged the growth of settlements closer to the flowing water of Merrimack River and Cochichewick Brook. In mid-century the City of Lawrence was established, and Andover was divided in three parts, with “North Parish” becoming North Andover. While Lawrence’s industry developed along the Merrimack, North Andover’s mills found enough power along the Cochichewick Brook for wool spinning, using ponds to regulate flow (Town of North Andover 2000, 3). Figures 1 and 2, on the previous page, document the emergence of industry in the town.

When industry, housing and commerce shifted towards the river and brook areas in the 18th century, the Old Town Center fell into disuse. In the 20th century, industrial era development patterns were reinforced by the placement of highways and the development of state roads in the town’s northeastern quadrant, helping to preserve the rural character of the less accessible portions of North Andover (North Andover 2000, 2). Today the area of North Andover between Cochichewick Brook and the Merrimack River is thickly settled, with shops and public buildings found amongst the neighborhoods. The town center features rehabilitated mill structures, a walkable commercial center, diverse housing, and commercial structures.

However, the vast majority of North Andover’s land lies south and east of the post-industrial areas, and is characterized by forests and some farmland. Over the past fifty years, many acres of farmland have been converted to suburban large-lot residential development, and today almost 90% of the town’s tax base is residential. With the construction of Interstates 93 and 495 in the 1960s, the population doubled between 1950 and 1970, to over 16,000 (North Andover Open Space 2010, 10). By 1990, the population had grown by 44 percent, to 23,700. Although the rate of growth slowed considerably in the past decade, the 2010 US Census set the town’s population at 28,352 (US Census 2010). The dominant transportation infrastructure within and around the town, the low-density residential development outside the town center, and the large tracts of protected space in the south are visible in Figure 3, below.

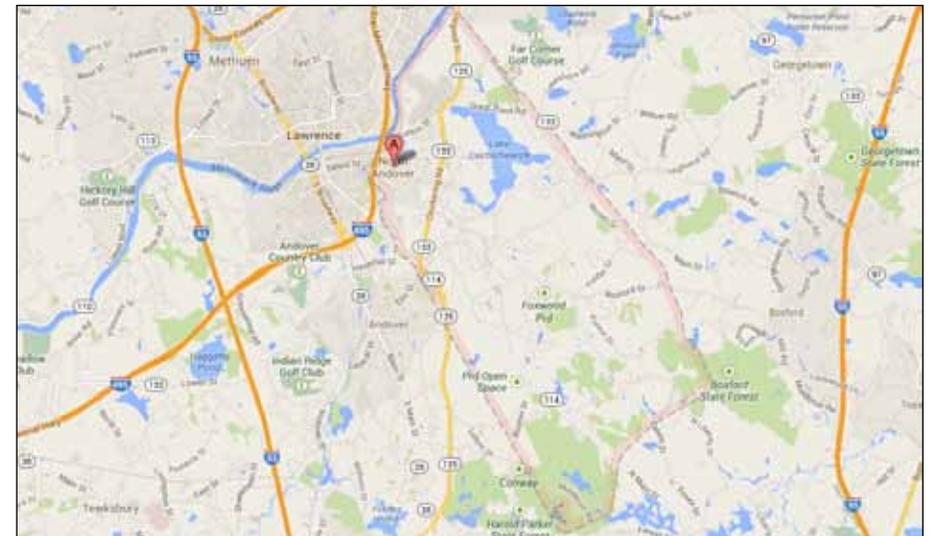


Figure 3: North Andover and environs. Credit: Google Maps, 2013.

» DEMOGRAPHICS

North Andover’s educational attainment rates exceed the Massachusetts averages for all post-secondary degrees. As Table 1 illustrates, well over half of the eligible population in North Andover has completed at least a bachelor’s degree, and slightly over a quarter possess graduate degrees. In addition to those cohorts exceeding state averages, North Andover’s percentages are significantly below statewide numbers for educational attainment at or below the high school level.

The median age in North Andover is 40.1, which is very close to the median age of 39.1 for Massachusetts. The largest age bracket in North Andover according to the 2010 Census is the 45-49 years cohort, which accounts for 9.1 percent of the population

Educational Attainment	TOTAL North Andover	PCT North Andover	PCT Statewide
Population ≥ 25	18,294	100%	100%
No high school	222	1.2	4.9
Some high school	601	3.3	6.2
High school or GED	3,256	17.8	26.3
Some college	2,552	13.9	16.2
Associate’s	1,421	7.8	7.6
Bachelor’s	5,582	30.5	22.1
Graduate or professional	4,660	25.5	16.6

North Andover also exceeds or falls short of state averages in a number of other cohorts, which are noticeably grouped together. A large share of North Andover’s population, 29.5 percent, is under the age of twenty; the statewide share is 24.8 percent. Conversely, North Andover has relatively few adults under the age of 35: only 13.6 percent, compared to a statewide share of 20.2 percent.

According to the most recent 5-year American Community Survey (ACS), the median household income in North

Table 1: North Andover Educational Attainment *Source: American Community Survey, 2011.*

Andover is \$95,199 per year. Compared to the median income of both Essex County (\$65,785), and Massachusetts (\$65,981), the households of North Andover earn a significantly higher income. The percent of households with yearly incomes over \$200,000 is 17.3% in North Andover, whereas Essex County is 7.5% and Massachusetts is 7.2%. Conversely, North Andover has a low percentage of its population under the federal poverty rate, 3.4%, in comparison to Essex County, 10.6%, and Massachusetts, 10.7% (ACS 2011).

North Andover’s housing stock is relatively new, with about eighty percent of its homes built after 1940 (McGregor 2007, 5). Of the 10,964 total housing units in North Andover, 2,747 units were renter-occupied as of the 2010 U.S. Census. According to one 2011 count, 6.4 percent (approximately 700 units) were designated as affordable under the Chapter 40B Massachusetts definition (Norton 2011). Table 2, below, contains an ACS comparison estimate of housing units per structure in North Andover and Essex County. As it shows, North Andover has a significantly higher percentage of single unit structures than the county, and relatively few structures with a smaller number of units.

» LOCATION AND KEY FEATURES

North Andover stretches several miles inland from the southern bank of the Merrimack River. The town’s earliest colonial settlement is southwest of Lake Cochichewick, along Salem Street. The densest settlement is adjacent to the industrial City of Lawrence to the northwest, by the confluence of the Shawsheen and Merrimack rivers.

Units in Structure	North Andover	Essex County
Single unit	7,123 (67.1%)	172,375 (56.3%)
2 units	742 (7%)	37,652 (12.3%)
3-4 units	495 (4.7%)	34,117 (11.1%)
5-9 units	660 (6.2%)	17,047 (5.6%)
10-19 units	825 (7.8%)	12,732 (4.2%)
20+ units	780 (7.3%)	30,084 (9.8%)

Table 2: North Andover Housing Units. *Source: ACS, 2011.*

The development pattern shifts from dense and industrial in the northeast to rural and residential in the southern and eastern portions of town. Here, the large forests, agricultural activity, and remarkable drumlin topography are in keeping with the neighboring towns of Middleton and Boxford. These areas are punctuated by large-lot residential developments, and are accessed from the town's rural byways.

As a former plantation town of the early colonial period, with an industrial heritage that includes two eras of manufacturing, North Andover is a mixture of preservation and progress. The following list of North Andover's key features is evidence of the extent to which Massachusetts communities have made and remade themselves in the past four centuries (MassDCR 2005, 5-9):

- The **Old Center** was the town's first hub of civic life. It is anchored by the Fifth Meeting House of the North Parish Church (built in 1836), and the ten-acre North Andover Common. It is also home to a Masonic Lodge, a former Grange Hall, the First Burying Ground, the Museum of Printing, and a number of the town's oldest residences.
- The 585-acre **Lake Cochichewick** is one of the largest freshwater bodies in Essex County, and the town's primary source for drinking water. A number of conservation areas protect the lake's inflow, including Osgood Hill, Half Mile Hill, and Weir Hill.
- **Protected Open Space** is found throughout North Andover. In addition to the Lake Cochichewick area to the north, thousands of forest and wetland acres to the south are protected by state, municipal, and non-profit or private landowners. The largest tracts are part of the Harold Parker and Boxford State Forests. Conservation areas under non-profit stewardship include Ward Reservation, Bruin Hill, and Purgatory Swamp.
- **Agricultural Production** has had a presence in North Andover since the land was known as the Cochichewick Plantation. The Barker Farm, in operation since 1642 and still in the family, is one of the country's oldest companies. Other operations include Mazurenko Farm, Smolak Farms, Foster Farm, Windrush Farm, and sections of the Town Farm.
- **Machine Shop Village** has been on the National Register since 1982, and preserves the remnants of North Andover's industrial heritage. The village takes its name from the Davis & Furber complex, built in the first half of the 19th century to manufacture textile machinery. Several of the buildings on the nearby streets were erected as company houses for mill workers and their families. North Andover created a Neighborhood Conservation District for Machine Shop Village in 2006.
- **Downtown North Andover** developed as Machine Shop Village grew, and is now the busiest part of town. Although it is primarily residential, a number of small businesses and national franchises are established there. In addition to the commercial enterprises, the downtown is also home to civic uses, including Town Hall, the senior center, a fire station, a post office, the library, and several churches.

» SUMMARY OF TOWN MASTER PLANS IN THE AREA

The latest Master Plan in North Andover was completed in 2000, and was useful in gaining an understanding of what issues persist (high reliance on the residential tax base, concern for costs of infrastructure), and what issues have shifted (demand for commercial space has been reduced, new ideas about airport land development). The more recent 2004 Community Development Plan (CDP) presents a more current overview of the town's priorities and outlook, and identifies six key goals (p 34):

- To shift tax burden from residential to commercial
- To transform airport land to create 'highest best use'
- To encourage clean, industrial development consistent with town character
- To promote economic development and resolve traffic issues on Routes 114 and 125
- To strengthen downtown as civic and cultural center
- To establish neighborhood service centers in residential areas

Outside of North Andover, the Lawrence Gateway Project calls for a variety of research, inventory, and design initiatives to target sub-plans developed by the State Executive Office of Environmental Affairs, MassDevelopment, and the City of Lawrence. The centerpiece of this project is in the city's Gateway/Canal neighborhood, on the northern bank of the Merrimack, across from South Lawrence. The industrial buildings here are being redeveloped for housing, live-work, and commercial space.

In Haverhill, economic development is front and center. Many historic structures were demolished during the urban renewal era (Hammersmith 2007, 3; Gruen 2007), and the town has focused on attracting large employers to shore up its tax base. The economic development office drives their planning initiatives, and there has been marketing research directed at the downtown as well as the village of Bradford, 3.5 miles north of the Lucent site (Conti 2011).

Boxford has a Master Plan from 2008. It begins with an image of a farm, and the plan embraces the small town rural character. Its priorities reflect a concern for agriculture, housing appropriateness and affordability particularly for an aging population, development pressures and a need for more civic infrastructure (Town of Boxford 2008, 7). The only mention of Boxford in North Andover planning documents is in the 2010 Open Space and Recreation Plan which points out that 14%

of the Lake Cochichewick watershed (upon which much of North Andover relies for drinking water) is in Boxford (North Andover Open Space 2010, 8). North Andover has addressed development within its boundaries, and also upgraded water facilities in response to giardia outbreaks in the 1990s, but has concerns for the portion of watershed in Boxford that may not be subject to sufficient protection.

» RECENT ECONOMIC CHANGES

North Andover has a labor force of 14,572 people. Of these working age people, 50.3% hold an undergraduate, graduate, or professional degree, compared 39% in the state of Massachusetts. As of the 2010 U.S. Census, North Andover had 861 work places and a total of 18,343 jobs within these workplaces. However, less than one-fourth of the population was employed locally, and the mean amount of time commuters traveled each day is 29.7 minutes. Of the town’s commuters, 83% drive alone to work and only 8.5% uses some type of public transportation. The town’s most significant employers are the Eagle Tribune, a local newspaper, and Merrimack College.

According to the *2012 Performance Report* of the Merrimack Valley Planning Commission (MVPC), the labor force in North Andover has steadily increased since 2009 (MVPC 2012, 6). At the same time, the number of employed residents has increased, and the unemployment rate has decreased. Below, Table 3 lists the figures from the years 2009-2012.

North Andover’s economy, however, is recovering more than it is growing. For decades, the Merrimack Valley Works on Osgood Street manufactured telecommunications components, first for the Western Electric Company, then AT&T Technologies, and lastly for Lucent Technologies. This facility, on 169 acres by the Merrimack River, was built in 1953, with accommodations for over 10,000 workers (North Andover 2004, 10). At its peak in the mid-1980s, employment reached 12,000; by 2002, fewer than 3,000 were still working there, amidst 2 million square feet of building space. Production ceased in 2006, and smaller enterprises have taken root in portions of the facility in the years since, in both the main structure and various outbuildings.

North Andover	Labor Force	EMP	UNEMP	UNEMP Rate
April 2012	14,072	13,376	696	4.9
April 2011	13,954	13,153	801	5.7
April 2010	13,986	13,016	970	6.9
April 2009	13,419	12,478	941	7.0

Table 3: North Andover Employment and Unemployment. Source: MVPC, 2012.

To the southwest, the former Davis & Furber Machine Shop in North Andover’s downtown has seen several changes in the past five years, as the town has moved to preserve Machine Shop Village. Utilizing a \$250,000 grant obtained through the Community Preservation Act, streetscape repairs and long-term planning has helped revitalize the mills as mixed-use centers of activity. The 250,000 square-foot East Mill, which was 80 percent vacant when it last changed hands in 2007, was at 93 percent capacity in late 2011 (Bloom 2011). Prior to the East Mill’s renaissance, the larger West Mill had housed two of the town’s largest employers, Converse, Inc. and Schneider Electric, for several years. However, Converse has recently announced plans to move its corporate headquarters out of the mill in 2015, and relocate to Boston (Metzger 2013). Similarly, Schneider will move its North Andover workforce to a new facility in neighboring Andover in mid-2013 (Ailworth 2013).

As a result, North Andover generates the majority of its revenue through residential property taxes, which account for 82 percent of the town’s tax revenue. In comparison to neighboring Lawrence and Haverhill, North Andover receives a significantly larger portion of its revenue through its residential tax levies, and a significantly lower percentage of revenue through state aid. That said, North Andover features a strong set of bond ratings from Moody’s (Aa2: “subject to very low credit risk”), and Standard & Poor’s (AA: “very strong capacity to meet its financial commitments”) (MassDOR 2011).

Overview of Massachusetts Route 125

» CONTEXT

Massachusetts Route 125 is a north-south route, which extends from exit 41 off Interstate 93 in Wilmington to Haverhill’s border with Plaistow, NH. It shares concurrences with the other state routes in North Andover: Route 133, which connects Lowell to Gloucester; and Route 114, which connects Lawrence to Marblehead, via Salem. Just north of town, in the Ward Hill section of Haverhill, the Industrial Avenue connector road links Route 125 with Interstate 495.

According to the Massachusetts Department of Transportation (MassDOT), the entirety of Route 125 in North Andover is under MassDOT jurisdiction, as is the Haverhill section leading to I-495. The Osgood Street stretch of Route 125 is classified by MassDOT as an “Urban Principal Arterial.” This designation describes

roads in “densely settled territory” that “provide the highest level of mobility at the greatest vehicular speed for the longest uninterrupted distances,” which are “not intended to provide access to specific locations.” Accordingly, this roadway is eligible to receive federal funding as part of the National Highway System. (Recent projects at intersections with roadways not within the NHS have been funded through the Surface Transportation Program.) Route 125 is a state-designated truck route, available to 48-foot tractor-trailers and twin 28-foot tractor-semi-trailer-trailers combinations (MassDOT 2012).

The section of Route 125 along Osgood Street is a 40-foot wide, four-lane road of bituminous concrete in what MassDOT terms “fair” condition. The roadway widens to accommodate additional turning lanes at the Lucent site (southbound only), Holt Road (both directions), the market north of Great Pond Road (southbound only), and Great Pond Road (northbound only). The southbound section briefly expands to three lanes north and south of Holt Road. An additional lane in front of 1600 Osgood serves as a stop on the MVRTA’s Bradford/Ward Hill bus route. At Holt Road and north of Great Pond Road, a slightly-elevated concrete strip serves as a median.

Annual averages for daily traffic along Route 125 at the Haverhill/North Andover line were obtained for seven of the ten years between 2000 and 2009. The average daily

traffic (ADT) was highest in 2002, with a count of 30,000. In 2009, the ADT was 14,400, the lowest since 2003, after Lucent Technologies drastically scaled back its operations (MassDOT 2009).

Underneath Osgood Street is a 12-inch ductile iron cement-lined pipe that provides drinking water from Lake Cochichewick to the area. Two 10-inch cast iron connections have been installed to draw water from the main to the former Lucent site (Coughlin 2005). There is no municipal sewer along Osgood Street, and the 2008 Comprehensive Wastewater Management Plan identified the Osgood Corridor as the second of five areas in need of sewer service (North Andover 2008, 2). To complete the plan, SEA Consulting examined a series of alternatives for providing the Corridor with sewer service. “Town Option A” (Figure 4) extended existing service on Sutton Street northward to new pipe along Osgood and Holt, at an estimated cost of \$5.79 million. “Town Option B” (Figure 5) connected new pipe along Osgood and Holt into the private sewer service at 1600 Osgood, at an estimated cost of \$3.95 million. In 2010, the engineering firm of Woodard & Curran concurred with the SEA estimate for Town Option A, but adjusted Town Option B to \$4.49 million (Woodard 2010). National Grid supplies electrical power through lines running overhead, primarily on the northbound side of Osgood Street, and Columbia Gas provides natural gas.

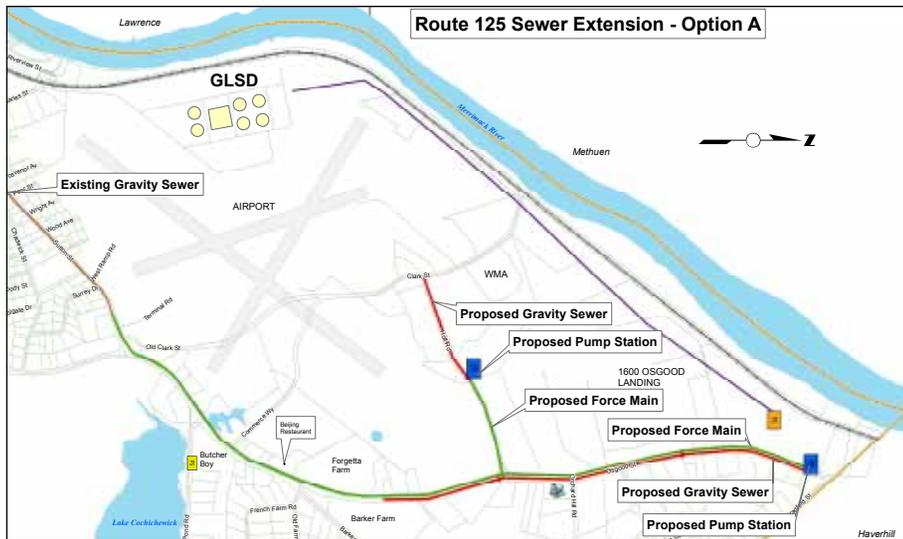


Figure 4: Sewer extension proposal from Sutton Street. Credit: Town of North Andover, 2013.

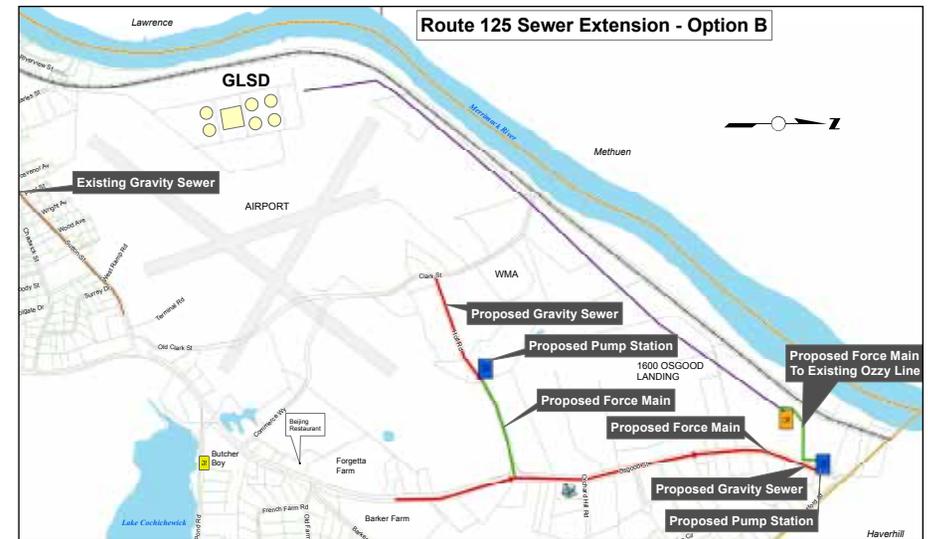


Figure 5: Sewer extension proposal through 1600 Osgood. Credit: Town of North Andover, 2013.

» LAND USES

The Osgood Corridor between Sutton and Bradford streets is home to a variety of land uses. At the southern end of this stretch is a mile or so of commercial-style development, which includes markets, restaurants, gas stations, and a number of undeveloped tracts. To the west, beyond Osgood Street, is airport-owned land, the Greater Lawrence Sanitary District, and a number of waste and recycling industries. To the east is a mix of town-owned lands, farmland, and some suburban residential development. Northward, an area of industrial development features suburban-style office parks to the east and the 169-acre Osgood property to the west. Recreational fields at the northern tip of the Osgood property provide the only outdoor gathering space.

» WETLANDS

Two streams flow northwesterly across the property, meeting just east of the train tracks before flowing into the Merrimack. Most of the wetlands in the area surround the airport. MassGIS software was used to identify the surrounding wetland types and their acreage in the airport's vicinity:

- Deep Marsh
- Shallow Marsh
- Shrub Swamp
- Wooded Swamp
- Open Water



Figure 6: Wetlands delineation by the airport. Credit: MassGIS, 2013.

The total square acreage of the twenty wetlands is 20.64 acres. As Figure 6 shows, most of the wetlands are to the east and north of the airport. The majority of the wetland vegetation is forested and shrubby. According to the airport's master plan, dominant species include red maples, gray birches, speckled alders, and the invasive glossy buckthorn (Dufresne-Henry 2004, 64).

» ZONING

There are several zoning designations in the Osgood Corridor, accommodating a variety of industrial, commercial, and residential uses. Residential zoning is confined to the eastern side of the street, reaching to the Boxford town line. Fronting the northern portion of that district is a Corridor Development District, one of three in North Andover. The section west of Osgood Street is zoned industrial. To the south, on both sides of Osgood Street, are small pockets of Business zoning. There are also four overlay districts in the area: a Smart Growth district coterminous with the 1600 Osgood Street property; an Expedited Permitting district associated with the Lucent site itself; an Adult Entertainment district between the Lucent site and the airport; and a Water Protection district at the southern end of the Corridor (North Andover 2010). Figure 7, below, illustrates the unexpected variety of districts and overlays in this relatively under-developed area.

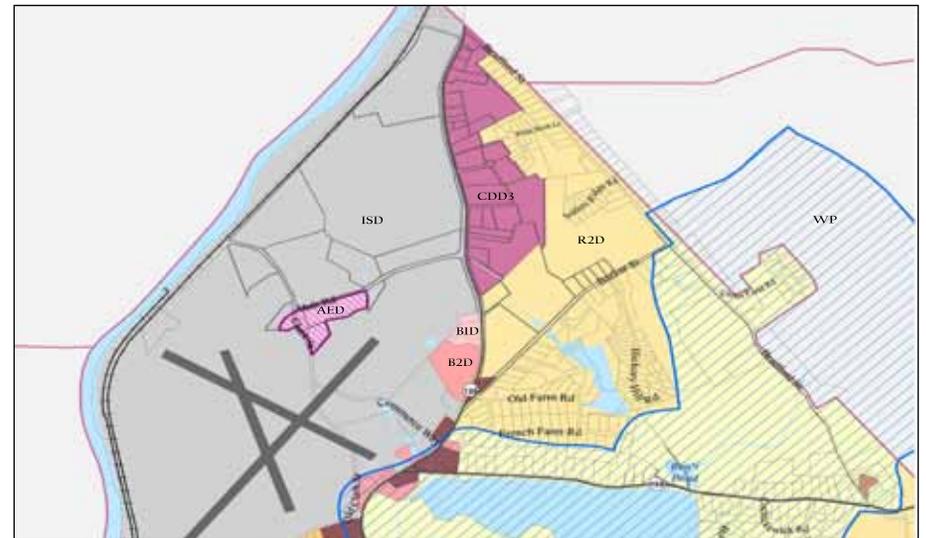


Figure 7: Zoning in the Corridor. Credit: Ivette Banoub, 2013.

» 1600 OSGOOD STREET

Located at 1600 Osgood Street, Osgood Landing is a 169-acre parcel, forty of which are given over to roadways and over 6,000 parking spaces. The main building, in Figure 8 below, is 1.5 million square feet. Built in 1955 by Western Electric, its presence transitioned North Andover from the declining mill and textile industry to a modern high-tech economy. For decades, it produced telecommunications components for the industry's cutting edge technology: copper coils, transistors, fiber-optic switches, and Internet routers. The facility, first built to house a wholly owned subsidiary of AT&T, came to operate as a contract manufacturer under Lucent Technologies in the late 1990s. The rise of automated manufacturing reduced the demand for labor, and the era of global acquisitions and mergers at the dawn of the 21st century made the facility expendable. In 2003, Lucent sold the property to the current owners for \$13.86 million (North Andover 2004, 10).

Given the scale of the facility and its land, the town's Community Development Plan includes several case studies of large-scale site reuse. It is interesting to note that while other town planning documents propose taking back the Lawrence Airport land for redevelopment, the CDP discusses the airport as an important asset for attracting a



Figure 8: 1600 Osgood Street, facing southwest. Credit: Ozzy Properties, 2011.

possible distribution-oriented company (p 16). However, according to the CDP, the airport had at that time recently released, repackaged and permitted some airport land. In terms of commercial redevelopment, this paragraph from page 16 still holds true:

These projects offer the potential for cooperative marketing and packaging of area sites and amenities. A strategic campaign with amenity packages offering sewer, power, communications, rail transit, air transportation, and tax incentives to target complimentary businesses, could build the necessary mass for a sustainable business community in North Andover's area. Without this kind of cooperation, it is highly possible that potential tenants will exploit the glut of new space, the result being deflated rental rates across the board. A coordinated and strategic plan for marketing and leasing space in all three developments, improved inter-site transportation including new access roads between the airport and 1600 Osgood Street, and the sharing of resources such as utilities, transportation, warehousing, etc., could yield tremendous economic benefits for the individual property owners and the entire region.

Completed in 2005, the *1600 Osgood Commerce Center Redevelopment Master Plan* by Huntress Associates evaluated the potential for mixed-use development at the former Lucent site. Its findings include the following goals:

- To maintain the existing building with upgrades to façade, driveways, parking lots
- To add townhouses and mixed uses on the north side
- To add commercial space in the undeveloped sections to the south

The scale and intensity of the plan's recommendations hinged upon the following conditions:

- The capacity of on-site infrastructure to handle significant increases to current uses.
- Use of Comprehensive Permitting Act (Chapter 40B) to incentivize housing development (and the town's need to reach 10%)
- Bringing Commuter Rail and Transit Oriented Development to the site through program incentives and subsidies
- Advancing a business model predicated on generating enough demand for retail and restaurants and a small number of on-site residences
- Working within existing infrastructure capacities as much as possible
- Town-wide desire to prevent significant increases to school enrollment totals

» LAWRENCE MUNICIPAL AIRPORT

Lawrence Municipal Airport (LWM) is a publicly-owned airport, classified by the Federal Aviation Administration as a Reliever Airport. Relievers serve two major purposes: to relieve congestion at larger Commercial Service Airports; and to provide access to general aviation. Originally constructed in 1934, LWM is one of the town’s largest operations, with 220 employees. LWM has a number of aviation assets, including a 5001-foot runway, paved runways and taxiways with lighting, an air traffic control tower, and 24-hour access to Jet-A and Avgas fuels. As of 2009, 230 aircraft were based out of LWM, the highest number in the state’s system of 37 airports, most of which were used for law enforcement, flight training, charter/tourism, and medically-oriented “angel” flights. That same year, the 53,720 aircraft operations at LWM were the tenth-highest in the system, accounting for 3.6 percent of the statewide total (MassDOT 2010, 2-33).

LWM is expected to grow in the coming years. According to MassDOT’s 2010 *Statewide Airport System Plan* (SASP), the number of based aircraft is projected to remain the state’s largest, increasing by approximately 20 percent by 2030, to a total of 278. Aircraft operations are expected to grow significantly in the same period, by 63 percent. At 88,048 operations per year, this projected total would bring LWM to the fifth-highest total in the system, or 4.5 percent of the 2030 statewide total. LWM’s current level



Figure 9: View of the airport, facing northeast. Sutton and Osgood streets to the right. Credit: MassDOT, 2010.

of activity is less than 40 percent of its designed capacity, and the growth forecast by MassDOT would easily be accommodated by the airport (MassDOT 2010 4-10, 4-13.)

Similarly, Dufresne-Henry’s 2004 *Airport Master Plan Update* (AMPU) for Lawrence Municipal Airport anticipated growth at LWM. The report inventoried existing and upcoming projects (such as the construction of 6 new hangars), and recommended 11 improvements for the intermediate-term (2010-2014), and 8 improvements for the long-term (2014-2024) (Dufresne 2004, 153). Several of the intermediate-term recommendations represent either an upgrade to existing service, or the addition of new services. For example, the AMPU recommends that 77 acres in the northeast corner of LWM be cleared of obstructions in order to accommodate a more advanced, GPS-based precision approach system for Runway 23 (p 130). Another recommendation calls for remodeling the airport terminal, to double the facility’s size, provide ADA access, and upgrade the building’s electrical and mechanical systems (p 146). A third recommends that LWM increase automobile parking by more than 200 percent, from 98 spaces to 309 (p 150).

Finally, the AMPU includes a noise analysis for existing and anticipated conditions. Table 4 contains the result of that analysis, in which it was determined that 15 residences are currently within a sound level considered incompatible with residential use, none of which are along Osgood Street. Given the orientation of the airport’s runways, the 60 decibel contour reaches as far as the southwest corner of Osgood Street’s intersection with Holt Road; parcels along the eastern side of Osgood, and parcels north of Holt Road, are not significantly affected by the aviation activities at LWM. Notably, the area encompassed by the contours is expected to decrease, even as operations increase: this is due to the increased regulations for jet engine manufacturing (Dufresne 2004, 161).

RESIDENTIAL EXPOSURE TO LAWRENCE MUNICIPAL AIRPORT NOISE		
CONTOUR	EXISTING CONDITIONS	FUTURE CONDITIONS
60 DNL	15 residences/283 acres	9 residences/253 acres
65 DNL	0 residences/136 acres	0 residences/112 acres
70 DNL	0 residences/68 acres	0 residences/48 acres

Notes: Summary of residential lots within various noise contours for existing and future conditions. Numbers of residential lots have been estimated. Acreages given represent full extent of individual noise contours. Numbers assume no land acquisition.

Table 4: Residential impacts of airport noise, existing and projected. Source: Dufresne-Henry, 2004.

III. ASSESSMENT

After reviewing relevant documents and resources, conducting site visits, meeting with clients, and contacting professionals and stakeholders, seven major issues emerged as impediments to the redevelopment of the Osgood Corridor. The recommendations in the Implementation section are intended to address the issues identified here.

Unclear Vision

While the Smart Growth Overlay District established in recent years lays out a vision for the redevelopment of Osgood Landing, the Corridor has not been treated as a unit, and suffers for it. The result is an ad-hoc arrangement in which the major components of the Corridor – Lawrence Municipal Airport, 1600 Osgood Street, the Waste Industries, and Barker Farm – have no visual or social relationship to one another. Smaller commercial and residential elements are overlooked, underused, or sit waiting to be put to some other purpose. Piecemeal efforts at redevelopment have left the Corridor fragmented, discouraging long-term, large-scale undertakings.

Inconsistent Zoning

Without consistent and coherent zoning to govern uses and forms, the Corridor is unable to establish an identity. Rules governing development vary on either side of the street, and sometimes from one parcel to the next. Varying setback requirements create an unpredictable, jagged roadside. Parcels in agricultural production are zoned residential or lie within development districts, conservation land is zoned industrial, and an adult entertainment overlay sits adjacent to a smart growth district focused on mixed-use commercial and residential development.

Insufficient Aesthetic Cohesion

1600 Osgood Street is the cornerstone of the Corridor. Recent improvements to the site have focused on aesthetic components, and have upgraded its lighting, signs, landscaping, and wayfinding elements. However, these features are not extended beyond the boundaries of the parcel. Street signs, lighting, utilities, medians, commercial signs, and traffic intersections elsewhere do not contain any design elements, and leave the Corridor without a sense of place.

Rail Access Bypasses the Corridor

1600 Osgood sits by the midpoint of the Bradford and Lawrence stops on the MBTA's Haverhill Line. Although the train passes by the site 25 times every weekday, the lack of a commuter rail stop in the Corridor diminishes the potential redevelopment of the site as a mixed-use facility. While MVRTA bus service to 1600 Osgood connects the Corridor to the terminus of the Haverhill Line, the connection is not robust enough to be considered a primary option for daily travel. Without the opportunity to “stop” along the Corridor, motorists are more likely to travel through it.

Merrimack River Disconnect

For decades, the Town has owned 23.01 acres of land along the Merrimack River to the west of the MBTA-owned track that serves the Haverhill Line (OSRP, p 40). However, with the exception of a one-acre parcel off Riverview Street, there is no public access to this stretch of the Merrimack. As a result, a significant recreational feature for future development in the Corridor is underutilized. Without the opportunity to enjoy the more than two miles of contiguous shoreline there, the asset is worth little.

Lack of Airport Partnership

Lawrence Municipal Airport is a significant asset for the region. It is expected to continue in its role as a reliever airport and general aviation airport. As one of the Osgood Corridor's largest landowners, any changes or upgrades to its services or uses have a bearing on development plans for the rest of the Corridor. Therefore, a partnership with the airport is essential for forming development goals that benefit the entire Corridor, but evidence of such a partnership is lacking. North Andover was represented by only one of the 43 municipal, state, and federal officials identified as part of the creation of the 2004 AMPU. The 2008 Merrimack Valley Comprehensive Economic Development Strategy (CEDS) makes reference to a joint effort of Lawrence and North Andover officials to establish an industrial park on vacant airport land, but the initiative did not come to fruition (MVPC 2008, 42). Without a strong collaborative effort, proposals for the redevelopment of the Osgood Corridor may suffer from uncertainty and misconceptions concerning airport growth, or be inadvertently thwarted by airport development options.

Farm Land at Risk

According to the 2010 Update of the 2006 Open Space and Recreation Plan (OSRP), 118.15 acres of the 195-acre Barker Farm are currently under taxation protection through the state's Current Use Tax Program, known as Chapter 61A (OSRP, p 57). While the Town has taken advantage of its first right of refusal to purchase substantial parcels in the past 25 years – acquisitions at Mazurenko Farm and Foster Farm totaled approximately 197 acres – the option to buy is not a guarantee of long-term protection. As the OSRP notes, North Andover's total Chapter 61A classification acreage decreased by 13 percent between 2000 and 2010 (p 24).

It cannot be presumed that a municipality will always have the social or financial wherewithal to make substantial land acquisitions. In fact, the large-scale economic pressures that can lead landowners to consider developing agricultural land may also prevent municipalities from making the investments required under the terms of Chapter 61. Given the size of the parcels that constitute the farm, and the farm's place in the history of agriculture in Massachusetts, this uncertainty has the potential to affect the feasibility of the Town's long-term goals for the Corridor.



Figure 10: Osgood Corridor Assessment map. Credit: Ivetta Banoub, 2013.

IV. IMPLEMENTATION

There are a number of ways to address the seven issues identified in the Assessment. This section of the report includes eleven recommendations for North Andover to consider in the redevelopment of the Osgood Corridor.

1. COLLABORATE WITH LAWRENCE MUNICIPAL AIRPORT

North Andover should engage in discussions with the Lawrence Airport Commission (LAC) immediately. To determine how best to proceed, it is important to clarify what changes are under consideration or are forthcoming at the airport. It is equally important that North Andover convey to the LAC what is being planned for the Osgood Corridor. While there are documents that give some indication of future actions, such as rebuilding the terminal, and developing commercial and industrial areas to the northwest, there is no comparable document from the town of North Andover relating to the airport's surrounding areas. Discussions will make the town's interests clear to the airport, and establish common ground for any proposed zoning adjustments, design guidelines implementation, or other improvements to the Corridor. Dialogue with the airport at this stage may lead to a valuable partnership in the future.

Even at this stage, it is clear that there are some shared goals, particularly with respect to an increase in industrial and commercial activity on and around airport land. A concrete proposal from the Town, such as the creation of a Waste Cluster, could provide the basis for a productive discussion, or reveal the extent to which the airport could be a partner in the process of Corridor redevelopment. While it may be desirable for North Andover to regain airport land or even achieve control of the airport, it is not clear whether either is possible. Unless the town wishes to pursue this in concert with state and federal authorities, it seems prudent to assume no imminent change in governance, and to open discussions with the LAC based on developing a partnership.

While there is no indication that a dramatic shift in airport use or leadership is on the horizon, expanded activity and building were recommended and forecast for LWM in

both the statewide MassDOT plan and the Dufresne-Henry plan. It may be beneficial, then, to open discussions before any changes become permanent. It is important to note that none of the airport land is required to achieve important goals along Route 125: improvement of Corridor quality (streetscape and design standards); increased use and activity (TOD to the north, attractive highway commercial near the airport, rural in between); and enhanced functionality (multi-modal safety, cross-connectivity for neighborhoods served by this highway). Nonetheless, collaboration with the airport would help in three ways:

- To contribute to the aesthetic character, particularly for those properties that abut the airport itself. Appropriate landscaping and/or fencing can reinforce to the Corridor's identity, and new buildings at LWM should reference North Andover's character.
- To make better use of the airport's many entrances, and the land alongside those entrances. The multiple entrances and access roads to the north, south, and east, could be providing valuable services and revenue in the most heavily developed section of the Corridor.
- To generate interest in outside investment in Osgood Landing as a potential TOD area. As the boundaries of the Priority Growth Strategy Sub-Region of the Merrimack Valley Planning Commission show in the map below, the redevelopment of the area is tied to the airport.

If, as was argued in the town's 2004 Community Development Plan, the airport is critical to attracting the kind of large scale business concern that could use the 1600 Osgood site, then North Andover's ability to attract such investment may actually hinge upon the town's ability to offer guarantees in terms of airport facility quality. Funding for improvements to the airport would come from sources outlined in the Airport plan. But support from regional or state authorities in negotiating with the airport will depend upon the strength of the connection between the town's goals and the declared regional and statewide goals.

The MVPC's goals for the sub-region are focused on economic development, but they also include balancing conservation with development. The state's *Scenic Landscape Inventory*, for example, includes hundreds of acres bordering the Corridor, around Lake Cochichewick and north of Great Pond Road. The relevant point is that North Andover should not only pursue partnerships with regional and state authorities, but also consider partnerships with private land conservation organizations, such as the Trustees of Reservations, to devise strategies that plan for conservation and development in unison. There is an excellent opportunity in the study area to use the one to support the other, rather than seeing development and conservation as incommensurate.

Currently, the economic development and airport infrastructure goals for the region and state are not in conflict with North Andover's evolving vision for the Corridor, but the town's vision is secondary. If North Andover leads the way, and casts an Osgood Corridor Redevelopment Strategy as an opportunity to address transportation, waste management, and land preservation, the town's goals will be incorporated from the outset.

2. CONTINUE DIALOGUE WITH 1600 OSGOOD OWNERSHIP

The Master Plan created by Huntress Associates for 1600 Osgood Street contains important elements that North Andover should carry forward in planning the Corridor's redevelopment. However, the Huntress plan was not meant to address the Corridor as a whole. There are three significant questions to ask of any redevelopment strategy for Route 125:

- How does the existing private sewer system limit multi-use buildout?
- How long will the original Western Electric building remain?
- Does any redevelopment need to adhere to existing parcel lines?

These questions raise key issues about what can be expected from the site in the coming years, and how wide open the development potential could be. North Andover has formed a strong partnership with the owners of 1600 Osgood, Ozzy Properties, since Lucent Technologies vacated ten years ago. The town is a tenant in the facility, and actively promotes the site as a real estate opportunity. However, it is important to make clear that North Andover is just as interested in promoting the Corridor, of which 1600 Osgood is a valuable part.

One of the best opportunities to jump-start the Corridor's development lies in providing the area with municipal sewer service, and the least expensive option involves utilizing 1600 Osgood's private sewer connection to GLSD. Since it is understandable that ownership might be unenthusiastic about incorporating municipal sewer service into an undeniably valuable asset, the burden is on North Andover to illustrate the ways in which 1600 Osgood would benefit.

Since this sewer development option would save the town at least \$1.4 million in project costs, and is likely to increase the tax base, North Andover might be able to provide Ozzy Properties with some incentives. For example, the project scope could incorporate some upgrades to the existing infrastructure at 1600 Osgood. North Andover may also be able to offset or restructure the property's financial obligations to the town, or illustrate to the ownership how a public-private partnership would enhance the development's competitiveness in seeking grants and state funding.

However, North Andover may wish to look at the redevelopment of this area from another perspective. Does the current approach to the Corridor – attracting and retaining tenants to ensure stable revenue from its largest asset – reflect the goals of the town? Furthermore, will the town be able to maximize revenue from its limited non-residential tax base over the next fifty years without taking advantage of 1600 Osgood's unique assets? There is a glut of small and medium-scale commercial space north of Boston, but not nearly as many industrial-zoned parcels of more than 100 acres within

five miles of an Interstate exit. One strategy to consider is formulating a master plan that leaves this kind of land intact and engaging with site selection specialists to market this property more effectively as an industrial site.

Whatever the future may be, North Andover should still continue to engage the Osgood Landing ownership to help maintain the quality, activity, and value of the property. Appendix A includes five case studies of projects that were able to secure state and federal funding for infrastructure improvements. In some cases, public/private partnerships were essential to the strength of the grant application.

3. DISCUSS PROTECTIONS FOR BARKER FARM

Given its location and historical significance, the future of the Barker Farm is significant to the overall redevelopment of the Route 125 Corridor. While the diverse nature of the Barker farming operation has declined, Barker Farm remains unique in its designation as one of the oldest farming operations in the United States, managed by eleven generations of Barkers since 1642. The farmland is an attractive feature of the Route 125 landscape, and the historical context adds defining character the sense of place. Although there is some protection offered by its 61A status, current zoning does not reflect the highest and best use for future protection of the farm. North Andover needs to preserve and integrate the legacy of this farm into the vision for corridor redevelopment. To do so, the Town should:

- Contact the Barker family with the intent of offering resources and support to encourage ongoing agricultural use of the farm.
- Open a dialogue to establish what plans the Barker family may have for the farm and whether or not the town can assist in any way with those goals.

According to the American Farmland Trust, "...studies done in towns and counties across the country consistently show that farmland generates more in local property taxes than it requires in local municipal services. Conversely, residential development generally fails to generate sufficient tax revenues to offset the costs of providing services to its residents" (American Farmland 2008, 1). In keeping with the efforts made to protect Half Mile Hill and Windrush Farm, ensuring agricultural production at Barker Farm should be a priority. There are a number of ways for the Town to accomplish this:

- Employ Community Preservation Act funds, in addition to public and private resources such as the Trust for Public Lands, to purchase Barker Farm.

- Consider a Transfer of Development Rights that would allow for development along Route 125 road frontage, while protecting interior open space.
 - Enact an Agricultural Preservation Restriction: An APR, authorized under Massachusetts General Laws Chapter 20 Sections 23-26, would allow the Town to purchase the development rights of farmland in order to preserve the land's use for agriculture. This voluntary program buys the development rights from the farmer or landowner, which is the difference between the fair market value of the land and the agricultural value of the property.
 - Encourage a Conservation Restriction: A binding agreement that permanently protects land by limiting development on a property by placing conditions (restrictions) on how that property can be used in the future.
 - Consider Fee Acquisition: The purchase of the property by North Andover or another agency for conservation purposes.



Figure 11: Barker Farm, facing north. Credit: Dee Forsythe, 2008.

4. CONSIDER FORMING A REDEVELOPMENT AUTHORITY

The responsibility for managing the oversight of the Osgood Corridor redevelopment is significant in its size and scope. We would encourage North Andover to consider the formation of a Redevelopment Authority under MGL Chapter 121B. There are two preliminary steps to forming a Redevelopment Authority. First, the town must adopt the provisions of Chapter 121B at a Town Meeting, which recognizes the need for a Redevelopment Authority in the town. Second, the town must vote to create the authority (MassEOHED, 3).

As independent planning agencies, Redevelopment Authorities are not governed by municipal mandates but are sanctioned to assert powers of eminent domain. A Redevelopment Authority is governed by a five-member board appointed by the public sector, and has "...broad powers to plan and implement activities needed to redevelop underutilized, deteriorated or blighted open areas to encourage new development and to promote sound growth." A Redevelopment Authority could help garner the support of local business leaders, encourage new industry, offer professional services, create jobs, and provide job training in directly related to the redevelopment the Osgood Corridor. To that end, Redevelopment Authorities have the power to:

- Establish rehabilitation and design standards;
- Assemble and dispose of land, including taking property through eminent domain;
- Relocate businesses and residents occupying property in urban renewal areas;
- Demolish and/or rehabilitate substandard structures;
- Participate in real estate development and commercial revitalization;
- Issue bonds, borrow money, invest funds, and receive grants; and
- Accept gifts or requests.

One of the key documents a Redevelopment Authority produces is an Urban Renewal Plan, which is submitted to state authorities for review and approval before any project can begin. The plan identifies project areas and objectives, anticipated public improvements, and redevelopment restrictions. Of primary importance is that the plan demonstrates that the proposed project will generate the desired private investment in a substandard area, but that the project is not feasible without public involvement.

A natural partner for a North Andover Redevelopment Authority is the Merrimack Valley Economic Development Council (MVEDC). Located at 1600 Osgood Street, the MVEDC is the regional authority charged with advancing economic interests of the Merrimack Valley. The MVEDC supports the collaboration of public and private sectors, promoting interests of "sustainable economic growth" and has identified 1600 Osgood as a Priority Development Area. A local Redevelopment Authority would work in conjunction with the MVEDC to promote the specific economic development needs and interests of North Andover, such as the proposed Transit Oriented Development.

5. ZONE FOR COHESION

The Osgood Smart Growth Overlay includes many important strategies to transform the area into a successful and aesthetically pleasing place, but the adjacent zoning does not share the same characteristics. The zoning for the southern portion of the Corridor does not include the Overlay's provisions for site plan review, special permit requirements, or sign specifications. Incorporating these regulations in the zoning along Osgood Street will encourage benefit the entire Corridor. Cohesive zoning in the Corridor will enhance its legibility and sense of place. The underlying zoning of



Figure 12: A variety of lot sizes and land uses across the street from 1600 Osgood. Credit: Google Maps, 2013.

the area should be uniform, Business, instead of the current combination of Corridor District 3 and Industrial.

On account of the topography and road curvature along the Corridor, the Town may wish to increase the maximum building height from 55 feet to 70 feet. Creating a minimum lot area will be important as well for the commercial mixed-use area. Although the Business Opportunity Zone has a lot area minimum, other categories do not: the result may be adjacent parcels of very different size. All three categories in the Osgood Overlay District (Mixed-Use Residential; Mixed-Use Commercial; and Business Opportunity Zone), will be helpful in both fulfilling the affordable housing requirements and making Osgood Road a spine through the Corridor, instead of a border between two unrelated areas.

Adding density bonuses to the existing overlay may encourage the construction of lower-cost housing. Through a zoning bylaw change, developers who build affordable housing could be given the opportunity to increase the density of the development or reduce the parking requirements. These bonuses will encourage builders to construct affordable housing because they will be able to create more units in the same amount of space, and therefore will be able to sell more units. An example of density bonus within a zoning ordinance is in Section 11.2 of the City of Cambridge's ordinance. The following is an excerpt from the "Incentive Zoning Provisions and Inclusionary Housing Provisions" section (City of Cambridge 2013):

to provide a mechanism by which commercial and residential development can contribute in a direct way to increasing the supply of affordable housing in exchange for a greater density or intensity of development than that otherwise permitted as a matter of right.

In addition to existing language from other municipalities, Marya Morris' *Smart Codes: Model Land-Development Regulations* includes a chapter entitled "Model Affordable Housing Density Bonus Ordinance." In it, she explains what a density bonus is, how it can be used, and gives an example of an ordinance that could be used by North Andover (Morris 2009).

6. CREATE CURB CUT POLICY

Although the location of curb cuts is mentioned in the Osgood Smart Growth Overlay, there is no language relating to the number of curb cuts, the amount of separation between driveways, and width standards on each parcel. A curb cut policy should be added to this overlay: limiting the number of curb cuts and driveways that are allowed

on each parcel will help the aesthetics and traffic flow along the streets. Regulating driveway separation and widths is important as well. Proper separation will alleviate congestion, and standardized widths can control which driveways are one-way or two-way access points. An example of a curb cut policy that has all of these regulations is West Springfield, Massachusetts (Town of West Springfield 2010).

Effective curb cut policies will help the Corridor change into a more pedestrian and bike-friendly area, which will be necessary if a commuter rail stop is put in place. With fewer curb cuts, there will be more of a tree belt area, meaning that more landscaping can be put in place and the corridor will become greener and more aesthetically pleasing over time.

7. INITIATE CORRIDOR CLEAN-UP

There are currently five different recycling and sanitation operations to the west of the Corridor. The sites are removed from the other businesses in the area. While they are well contained, some of the waste removal could be better maintained; refuse has made its way to areas along the roadways, most likely due to wind and spillage. Working

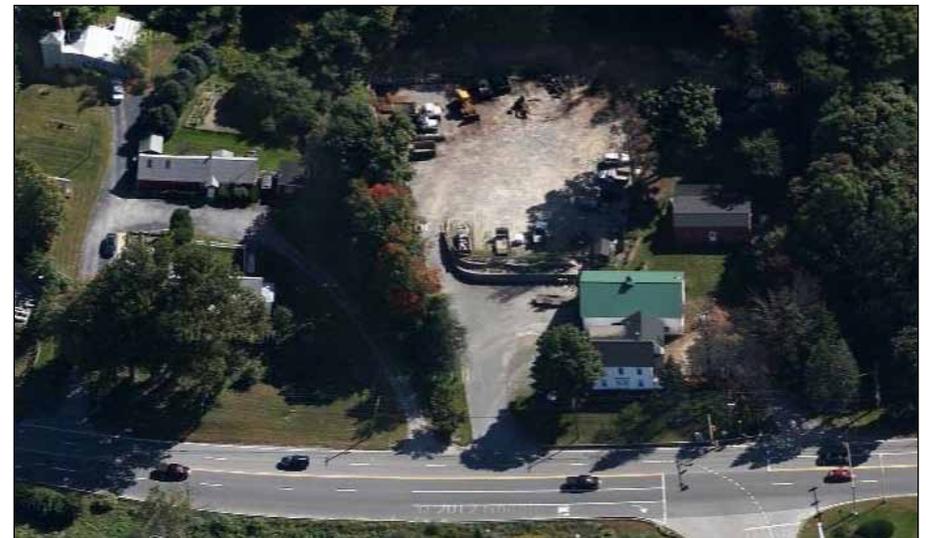


Figure 13: Four curb cuts within 0.1 miles on the eastern side of Osgood. Credit: Google Maps, 2013.

with the private sector, North Andover should consider developing a regular clean-up operation around the areas where natural circumstances cause it to gather.

One way that North Andover may consider approaching the issue is through a volunteer clean-up program in which business and community members volunteer to maintain areas around the waste sites. By focusing on common areas of origin (the parking lot of a convenience store) or accumulation (the fence downwind of the parking lot), volunteers can make the best use of their time and deliver a noticeable impact. Some of the simplest litter controls are the most effective. Portable fencing is commonly used to prevent the spread of litter from sources or to sensitive areas, and well placed trash receptacles by bus stops and walk lights.

The presence of litter attracts increased amounts of litter, so it is important that North Andover consider implementing a maintenance program for areas especially prone to it. While litter is a sign of human use and presence, this positive feedback loop quickly repels people from an area. The visual impact of litter, debris, and unmaintained land is significant. It communicates to residents, visitors, and passers-by that they are someplace unimportant. North Andover should make it a priority to prevent this message from being sent.

8. LAUNCH COMPLETE STREETS/GREENSCAPING PROGRAM

North Andover should consider an ambitious streetscape improvement program for the Osgood Corridor, to incorporate Complete Streets principles with greenscaping elements. Complete Streets policies encourage physically active alternatives to vehicular transportation, by planning for the rights-of-way of all users (City of New Haven 2010, 23). Greenscaping enhances the experience of travel for all users, through the direct and indirect benefits of vegetation. This program anticipates four key outcomes:

- Improved Safety Conditions resulting from clearly marked bicycle lanes, vehicular turning lanes, and pedestrian access points.
- Enhanced Environmental Quality from the growth of street trees planted along the Corridor, purifying air, regulating temperatures, and providing habitat.
- Enriched Aesthetic Experiences on account of attractive natural and man-made elements to provide lighting, scenery, wayfinding, and human scale.
- Value-Added Economic Conditions in the aftermath of public

infrastructural investment: increased employee output, increased retail sales, decreased vacancy rates, new private investment.

The Town has the opportunity to create a green streetscape with a number of features: numerous street trees; ample sidewalks; bicycle lanes and racks to encourage multi-modal transportation; and a distinct character enhanced by attractive signs and wayfinding elements. Other helpful components would include effective lighting, traffic calming devices, crosswalks, sidewalks with ADA access, pervious pavement, and native vegetation.

Improving the streetscape in North Andover would improve the health and well-being of locals and visitors alike, while also increasing safety, and provide aesthetics that are not only visually accommodating, but are also sustainable. There is also a significant amount of research to suggest that business districts with increased vegetation and street trees are more likely to have patrons with increased levels of comfort who are willing to contribute more revenue.



Figure 14: Facing north towards the intersection at Great Pond Road. Credit: Anita Lockesmith, 2013.

9. IMPLEMENT DESIGN STANDARDS

Relating to the adoption of a curb cut policy, North Andover should incorporate design standards into their zoning overlay district. Design standards include not only landscaping and the green spaces around the buildings, but the structures themselves. If the town were to adopt design standards, it could ensure that new buildings are architecturally similar and are built to the same specifications, meaning that a beautifully designed building will not be located next to a metal-framed temporary building. The specifics of the guidelines are left to the town. The following is a list of some design standards the town might wish to bring to the Corridor, to generate cohesion where land uses are disparate.

- Underground installation of all utilities.
- Specifications for outdoor lighting fixtures that reduce light pollution.
- Architectural relationships between existing and proposed buildings on the same lot.
- Specifications for traffic calming elements by curb cuts to enhance pedestrian safety.
- The creation of a Design Advisory Board to review proposed landscape and structural design elements.



Figure 15: Facing north at a natural gateway: the Sutton Street intersection. Credit: Anita Lockesmith, 2013.

10. PROMOTE RENEWABLE WASTE CLUSTER

North Andover should encourage existing waste industries to capitalize on symbiotic relationships for three reasons: to create additional sources of waste revenue, increase energy efficiency, and reduce waste. There are currently five major waste management facilities within a physical cluster around the Lucent site. In North Andover, as in many communities, waste industries are located on the edges of town, out of sight of homes and business. Still, the trash and debris blowing against fences and across pastures is a constant reminder that these industries are present. The formation of an industry cluster could show North Andover's desire to bring attention to existence of these industries, as well as encourage a higher standard of care for the aesthetics of the facilities and the surrounding grounds.

Recently, some large-scale waste and recycling operations have found ways to generate additional revenue from their operations. Wheelabrator has been managing the disposal of 1,500 tons of regional municipal waste daily, for over 35 years. The company disposes of municipal solid waste from more than 20 Massachusetts communities, producing up to 40,000 kilowatts of electricity that is sold to local utility companies. Wheelabrator Technologies is an industry leader in refining and advancing waste-to-energy technology around the country. While public concerns about residual waste and emissions standards persist as obstacles to expansion, it is worth noting that this is an issue common to all waste disposal enterprises.

North Andover should explore the advantages of bringing these industries from the edges of public awareness into the sphere of public influence, promoting the advancement of cleaner, more efficient technologies for waste management. As an industry cluster, they can employ state of the art technologies and harness new sources of waste revenue on their way to becoming the regional example for waste management solutions. As a Platinum-level BioReady community, North Andover is in a strong position to take advantage of the connection between renewable waste and biotech industries.

One of the many benefits of encouraging this collaboration would be to shift public perceptions, shifting from the current "out of sight, out of mind" perspective towards the goal of promoting an industry model for sustainable management and growth. Waste management is a growing industry with expanding economic potential. North Andover should take the opportunity to show support for the waste industries that exist while taking measures to reduce any negative impacts on surrounding growth and development potential.

- Contain trash and debris that scatters across the Route 125 landscape.
- Consider the aesthetics of the open space and winding roads alongside existing industrial sites and the airport.
- Leverage local interest in green principles by proposing scenic bike paths through the “waste industry cluster.”
- Create attractive landscapes with fun and functional sculpture made from recycled materials along bike/pedestrian routes, and along the Corridor.
- Emphasize economic benefits created by waste industries and their important role in promoting sustainability.
- Open facilities to science classes in local schools for tours and education regarding product life cycles.
- Adopt as-of-right-siting of renewable and alternative energy facilities around waste industry cluster.
- Consider a design competition, in which invited designers submit concepts for large installations that demonstrate systems of waste and reuse, with the challenge of using only recycled materials while creating an aesthetically pleasing environment.

11. PURSUE TRANSIT ORIENTED DEVELOPMENT

North Andover should aggressively pursue a Transit Oriented Development (TOD) plan that includes all of the parcels between Holt Road and the Haverhill line. This will accomplish five key goals:

- Provide amenities for North Andover residents: transit options, employment, housing options, and shops/services/recreational activities.
- Attract and adapt to the next generation of employers and employees.
- Build upon mixed-use principles to get the most activity and tax base from the infrastructure in this area.
- Position North Andover to be a key contributor for regional redevelopment goals along Interstate 495, growing in a way that fits with the state’s transportation goals.
- Include a coherent ‘place-making’ strategy that makes the northernmost stretch of Route 125 a highly productive, high-quality environment in keeping with North Andover’s values.

A TOD in North Andover would send a strong signal to businesses that the Town is able to accommodate the suburban-based worker along with those who prefer live-work options. If accomplished in collaboration with Haverhill, a TOD could play an important role in helping to achieve some of the redevelopment goals for nearby areas, as well. A TOD would also have the potential to create the critical mass of activity needed to develop a commercial center that North Andover and nearby residents would enjoy: movie theaters, restaurants, and shops. Retail is not a firm foundation for economic development right now, but walkable, full-service neighborhoods are increasingly popular in suburban settings.

A North Andover TOD could play a role in re-activating commercial activity along a stretch of I-495 that has been lagging. Given the state’s renewed commitment to transportation, it seems highly worthwhile to pursue a model for the TOD that includes significant commitments from the state, in addition to using the existing incentive tools applicable in this area, such as TIF and ETA designation. A list of current state programs for TOD projects is included in Appendix C.

North Andover should continue with the idea of a Transit Oriented Development as the central concept for the redevelopment of the northernmost portion of Route 125. The Huntress Associates Plan for 1600 Osgood Street, incorporated a feasible TOD without using the term (Huntress 2005, 8). However, in order to create a real transit node in this area, North Andover should pursue an expanded master plan for the TOD service area. Given the industrial character of much of the land between Route 125 and the river, it seems possible that the town and the MBTA could find an arrangement that meets multiple needs. By examining the potential of the defunct Solo Cup factory and some of the unusable portions of airport land, for example, a workable site for commuter rail service may present itself. North Andover also has a significant asset in the town-owned land along the Merrimack, which will be useful in future negotiations.

Expanding the TOD is critical to all of the other recommended actions for the Route 125 Corridor. Intensifying use for all of the nearby parcels – along the east side of Route 125, at 1600 Osgood, and for parcels approaching the town line – adds significantly to the achievable densities, and makes a TOD much more appealing from an economic development standpoint. Of particular interest is recent work in Milton, in which a bicycle and pedestrian trail parallels MBTA rail tracks on one side, and the Neponset River on the other. This example may be of relevance for conceptualizing the value of large-scale TOD efforts in the Osgood Corridor. Please see Appendix D.

The TOD can accomplish a number of important goals for the town, and the region. One of the best aspects of a multi-use zoning district is the potential for efficient use of infrastructure. Given the limited non-residential land in North Andover, and a strong desire not to infringe upon the character of suburban and rural areas, the Route 125 Corridor area must be made to do a great deal. North Andover should think carefully about not just allowing, but ensuring a variety of uses that can make this site active for as many hours of the day, and days of the week, as possible. It needs the flexibility to adapt over time, or it will risk leaving the town's commercial tax base undeveloped. These are important considerations that must be factored in to the TOD model that the town chooses to pursue, whether the vision is for a series of private sites created by a single developer, or a series of subdivisions created by a variety of builders. While the study area has a feeling of being very separate from the rest of North Andover, it can become an attractive center of activity, and a suburban hub.



Figure 16 (above): Housing by the Industrial Drive connector to I-495 in Haverhill. Credit: Jen Stromsten, 2013.

Figure 17 (opposite): Osgood Corridor Recommendations map. Credit: Ivette Banoub, 2013.



V. CONCLUSION: THE VISION FOR THE CORRIDOR

Reconnected

For many years, the Corridor's roads have separated the industrial from the agricultural, the commercial from the residential, the civic from the private, and the parts from the whole. The variety of stakeholders in the Corridor requires the creation of new partnerships, and the strengthening of old ones. Reconnected, the Corridor's constituents are able to voice concerns, identify opportunities, and share ambitions for the future.

Restructured

Reconnecting the Corridor's stakeholders has created room for new dialogue, and generated local interest in mutually beneficial arrangements. Public investment in extending Town sewer service to the Corridor demonstrates the Town's commitment to all of the Corridor's stakeholders, expanding development opportunities on all parcels. Utilizing the capacity of an existing private sewer system enables both town and landowner to demonstrate to the Commonwealth the forward-thinking nature of a unique public/private initiative. In addition to making a strong case for state-level grants, the new infrastructure attracts the interest of outside investment.

Reshaped

The Corridor is shifting from a "through-place" into a "to-place." Alterations to the surface of Osgood Street indicate that the road belongs to a number of users traveling in a number of ways. Physical improvements to the landscape provide visual interest and cues to care, offer physical amenities, and reinforce the notion of the Corridor as an emerging place in North Andover. Zoning and design guidelines offer developers assurances about the future image of the Corridor. The Corridor is now designed with people in mind, without which there can be no sense place.

Renewed

A new commuter rail station puts the Corridor within reach of Boston's North Station. A collection of waste management companies has emerged as an industry cluster of renewable energy. Acres of pavement around 1600 Osgood have become a mixture of residential, retail, professional, and civic uses. Trails stretch up to the recreation fields and brooks near the town border, through the apartments, shops, and offices, and down to the crosswalk. Across the street are conservation lands, farm stands, and solitude. Behind is home for some, work for others.

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APPENDIX B: INFRASTRUCTURE IMPROVEMENT CASE STUDIES

Fanaras Industrial Park *Salisbury*

The Town of Salisbury’s 2008 Master Plan described the Fanaras Industrial Park along Rabbit Road as an underdeveloped area with significant economic growth potential. Along Interstate 95, with easy access to both I-95 and I-495, Rabbit Road is considered the prime location for industrial development in Salisbury. However, the plan cited one particular reason for the difficulties the park had experienced in attracting and retaining tenants: “the lack of public sewer service” (Salisbury 2008).

At the time of the plan’s approval, the process of providing the existing commercial and industrial interests with sewer extensions had begun. In 2007, Salisbury received a \$1 million grant from the Commonwealth’s Massachusetts Opportunity Relocation and Expansion Jobs Capital program (MORE) to upgrade the water and sewer systems along Rabbit Road. The project, which called for the installation of 20,000 feet of sewer lines and 3,000 feet of water lines, was considered a prerequisite for additional

Major Grants	Major Businesses
MORE: \$1 million	Andover Healthcare
	PV Engineering & Manufacturing
	Old Time Sports

In January 2008, the Town was able to secure a state-backed loan at 2 percent interest to pay for the water system’s upgrades, to be repaid within 20 years. Property values in Fanaras Industrial Park increased, and businesses in the region began to consider relocating to the park, now that its infrastructural capacity was able to accommodate a greater number of uses. Salisbury accepted a \$3.9 million construction bid for the project in February 2008, and construction was completed in 2010 (Chiaramida 2008).

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CenTech Park

Grafton / Shrewsbury

CenTech Park is a 121-acre technology park in the towns of Shrewsbury and Grafton. The park is a short drive from Exit 11 of the Massachusetts Turnpike, and within a half-mile of the Grafton stop on the Worcester Line of the MBTA's Commuter Rail. The Worcester Business Development Corporation acquired the land from the Commonwealth in 1994, and determined that the unimproved parcel held the potential for approximately 675,000 square feet of development (WBDC no date).

The Town of Grafton and the WBDC received a \$900,000 grant from the EDA to develop the necessary infrastructure: water, sewer, gas, and electricity. This grant leveraged additional funds from the Commonwealth, which provided an additional \$2 million grant for the park's infrastructure. In addition to infrastructure funding, the WBDC and the Town of Shrewsbury were able to secure \$3.5 million in state funding (\$1.2M grant from PWED, and \$2.3M from MassHighway) to construct a \$3.7 million dollar connector road from Route 20 to the park. Since CenTech Park's construction phase was completed in 2004, it has become home to a number of interests, including State Street Bank, TriTech Software, the University of Massachusetts, and IDEXX veterinary research (WBDC no date).

Based on the success of CenTech Park, the WBDC purchased an adjacent 84-acre parcel in Shrewsbury, intent on the development of 650,000 square feet for light industrial and manufacturing. This project, CenTech Park East, benefitted from the

Major Grants	Major Businesses
EDA: \$900,000	University of Massachusetts
PWED: \$1.2 million	State Street Bank
MassHighway: \$2.3 million	TriTech Software

infrastructure built during the development of CenTech Park: sewer and water lines were extended to the new parcel, and a 1,800-foot access road was built off of the original connector road with another \$3 million of funding. The EDA provided \$2M, and \$1M came from PWED (NEREJ 2010). In 2011, a local developer expressed interest in CenTech Park East, and purchased the land from the WBDC for \$3 million (Thompson 2011).

Sources:

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Medway Business Park at Interstate 495

Medway

The Medway Business Park is one mile from the Interstate 495 – Route 109 intersection, and within ten miles of I-495’s connections to both I-90 and I-95. Despite this exceptional location, Medway’s 1999 Master Plan described the Park as “underdeveloped due to a lack of sewer infrastructure and wetlands restrictions.” Given the sharp increase in residential development the town had experienced in the preceding decades, the 1999 plan emphasized the need to zone and plan for commercial/industrial land uses (Medway 1999).

Ten years later, the 2009 Master Plan noted the impending completion of the Medway’s Industrial Park Sewer Extension project. The project resulted in the construction of 22,000 linear feet of 18- and 12-inch sewer mains, a submersible pump station, and force mains to serve the park (Mass EEA 2008). Completed in 2009, the \$5.2 million project was funded by a \$1.68M contribution from the Town in 2003, a \$500,000 Community Development Action Grant (CDAG), and a \$3.1M grant in 2007 from the state’s MORE program (Medway 2009, Crocetti 2007).

A market study completed in 2001 estimated that fully developed infrastructure in the park would enable the development of an additional 800,000 to 1,000,000 square feet, providing Medway with \$950,000 of annual tax revenue (PGC 2001). This increase in sewer capacity would enable Cybex, a major exercise equipment manufacturer with its corporate headquarters in the park, to expand their facility by approximately

Major Grants	Major Businesses
CDAG: \$500,000	Cybex
MORE: \$3.1 million	CGIT Systems
	EPCO Manufacturing

100,000 square feet, and increase their workforce of 250 to 370 (Crocetti 2007). Since the project’s completion, another manufacturer has located to the park: AZZ’s CGIT Systems employs 100 people in the field of electrical transmission manufacturing (Medway 2009).

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Framingham Technology Park

Framingham

Framingham Technology Park (FTP) is approximately 20 miles from New England's largest cities: Worcester and Boston. The park has direct access to Interstate 90 and Route 9, just north of the intersection of the two highways. For years, it has been home to the corporate headquarters and R&D facilities of two of the town's larger employers: Genzyme and Bose. These companies alone employ over 3,900 people, and other prominent companies – FedEx, Nestle, and Sheraton among them – employ hundreds of employees, as well (ULI 2012).

In order to accommodate the ongoing growth in FTP, the town's zoning bylaws were adjusted to allow increased development densities for manufacturing, R&D, and associated office space (TetraTech 2010). Even under conservative projections, TetraTech envisioned that the zoning alterations could add another 1.8 million square feet to the 2.77 million square feet already built or in construction. However, this build out scenario would be impossible without major infrastructural upgrades to the municipal water and sewer systems at FTP.

To secure funding for the infrastructure project, the Town of Framingham worked with Genzyme to demonstrate that infrastructural development was a prerequisite to industrial expansion. In November of 2008, the newly formed Massachusetts Life Sciences Center (MLSC) agreed to fund a phased water/sewer upgrade program through the state's Life Sciences Act, to go hand-in-hand with Genzyme's large-scale expansion. A \$5.2 million grant enabled Framingham to replace the park's aging wastewater pump station. Completed the next year, the project was timed to align with Genzyme's schedule for new manufacturing processes. Satisfactory progress triggered the release of a \$7.7M grant for the project's second phase, upgrading FTP's water and wastewater systems (MLSC 2009). Phase two brought the park's water transmission mains to 20-inch diameters, and increased the capacity of a water pumping station

Major Grants	Major Businesses
Life Sciences Act: \$14.3 million	Genzyme
	Bose
	FedEx

from 4 million gallons per day (MGD) to 6 MGD (TetraTech 2010). Two years later, Genzyme's celebrated the opening of a new 57,000 square foot pharmaceutical plant. The facility, which represents a corporate investment of over \$300M, will employ approximately 500 people.

As a consequence of the infrastructure projects at FTP, additional interests have acquired property in the park, as well. The Congress Group's plans to invest \$150 million in three parcels adjacent to the Bose complex were dependent upon the final \$1.5M phase of the sewer's improvements. With the sewer project completed in 2010, the developer intends to proceed with the construction of the Crossroads Corporate Center, which calls for approximately 400,000 square feet of office and R&D space (McDonald 2010).

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Summit Industrial Park

Gardner

In March of 1996, the U.S. Economic Development Administration provided the City of Gardner and the Gardner Redevelopment Authority (GRA) with a \$675,000 grant to establish Summit Industrial Park (Olver 1997). At the time, Summit Industrial Park was 125 acres of undeveloped land, one mile from the intersection of Routes 101 and 140, and three miles from Route 2. Today, thirty acres remain undeveloped (Gardner no date). By 2002, six structures had been built, totaling over 180,000 square feet of manufacturing and light industrial space (Assessor 2012).

As is the case for many municipalities in northern Worcester County, a lack of direct interstate access has discouraged economic growth in Gardner. To remain competitive and bring businesses back to the area, Gardner extended the city's municipal services out to the park. With the funding received from the EDA, Summit's services were developed to a level anticipating full build-out. This has enabled the park to offer potential tenants pre-approval for storm water and drainage systems, and establish permitting to accommodate a number of uses, including manufacturing, warehousing, and R&D (Gardner no date). Today, the businesses at Summit Industrial Park provide stable employment to approximately 150 people.

Major Grants	Major Businesses
EDA: \$675,000	ACT Fastening Solutions
	New England Peptide
	F.E. Incorporated

Sources:

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APPENDIX C:

RESOURCES FOR TRANSIT ORIENTED DEVELOPMENT

While recent efforts have been made to simplify the application process for many of the state's economic development funding programs, the options are still extensive. To help municipalities make sense of the various initiatives, the Massachusetts Executive Office of Housing and Economic Development provides resources for encouraging both Mixed-Use and Transit-Oriented Development. One resource, available online at <http://www.mass.gov/hed/community/planning/guide/mixed-use-development-transit-oriented.html>, summarizes the primary and secondary funding programs for TOD projects. The site identifies each program's purpose, eligibility criteria, and funding uses. While some of these are already in place in the Corridor, others may be of value in the future:

Primary Resources

- Chapter 40R (Smart Growth Zoning Act)
- Chapter 43D (Expedited Permitting)
- Commercial Area Transit Node Housing Program
- Community Development Block Grant
- District Improvement Financing
- Economic Development Fund
- Economic Development Incentive Program
- Housing Development Incentive Program
- Infrastructure Investment Incentives Act
- MassWorks Infrastructure Program (see Appendix C)
- Urban Center Housing Tax Increment Financing Program
- Urban Renewal Program

Secondary Resources

- State-Subsidized Environmental Insurance
- Brownfields Redevelopment Fund
- Citizen Planner Training Collaborative (see Appendix C)
- Peer-to-Peer Technical Assistance Program
- Relocation Assistance Program
- Smart Growth / Smart Energy Toolkit

At the federal level, the Environmental Protection Agency provides information and support for TODs. In addition to materials from a recent presentation on partnerships for smart growth, the EPA also provides an online trip generation calculator. Trip generation is the first step in the most common approach to transportation analysis, the four-step model. It is essential for modeling the expected travel demand of a Transit Oriented Development. Additional information is available at:

- http://www.epa.gov/smartgrowth/webinars/pdf/Partnership_111512.pdf
- http://www.epa.gov/smartgrowth/mxd_tripgeneration.html

APPENDIX D: MWIP AND THE CPTC

The MassWorks Infrastructure Program now consolidates six grant programs, in order to streamline applications for projects which address a variety of state priorities. Former programs now a part of the MassWorks operation include: the Public Works Economic Development Grant (PWED); the Community Development Action Grant (CDAG); the Growth District Initiative (GDI) Grant; the Massachusetts Opportunity Relocation and Expansion Program (MORE); the Small Town Rural Assistance Program (STRAP); and the Transit Oriented Development (TOD) Grant Program.

In 2012, the Town of Milton's Milton Villages Streetscape Improvement Project received a MassWorks grant of \$1 million. The grant will support streetscape improvements to connect two of Milton's villages along the Neponset River. The project's goal is to advance current and proposed transit-oriented development, housing construction, and new retail in the villages, which are served by MBTA stops on the Ashmont-Mattapan High Speed Line, and bicycle and pedestrian access along the Neponset Trail.

The Citizen Planner Training Collaborative is a planning and land use training service provided by UMass Extension. Affiliated with the UMass Department of Landscape Architecture and Regional Planning, the CPTC offers workshops, online resources, and as-needed training to local planning and zoning officials. As economic development funding programs are subject to frequent change, one of the CPTC's priorities is to ensure that local officials are up to date on funding options. In March of 2013, at the CPTC's Annual Conference, one session was dedicated to Infrastructure Financing. Presentations from the session covered topics relevant to the Osgood Corridor, including a review guidebook for public financing, options for public/private financing, and a review of current programs for infrastructure financing. Materials from the Infrastructure Financing session are available at <http://www.umass.edu/masscptc/2013-conference-training-materials.html>.

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