

North Grafton  
Transit Village  
**STRATEGIC PLAN**



# FINAL REPORT

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Prepared For:  
The Town of Grafton, MA

7/12/17

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North Grafton  
Transit Village  
**MASTER PLAN**

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## 1.0 INTRODUCTION

The **2001 Townwide Master Plan** identified the area surrounding the North Grafton MBTA Station as a “Transportation Village” indicating the opportunities for mixed uses supported by commuter rail service between Worcester and Boston, proximity to major transportation corridors, business development potential in the adjacent Grafton Science Park and Centech Park, potential for reuse of former Grafton State Hospital properties, and the draw of Tufts University Cummings School of Veterinary Medicine.

As a follow up to the Master Plan, the North Grafton Transit Village (NGTV) Strategic Area Plan further defines the potential for a mixed-use village, focused on the MBTA commuter rail station, and other properties held in private and public ownership. This Strategic Area Plan addresses various challenges and opportunities related to future development and re-development within the project area, including historic and cultural resources, environmental constraints and attributes (e.g., water resources, open space, and habitat preservation), recreation, infrastructure, housing needs and demands, economic development initiatives, and design objectives. This plan also provides an overall vision, conceptual development scenarios, and action strategies moving forward in creating a mixed-use village.

The Town of Grafton obtained funding through the Massachusetts Community Compact Initiative and the Planning Assistance Through Housing (PATH) grant programs to develop the North Grafton Transit

Village Strategic Area Plan. The Town then retained the consulting team of Dodson & Flinker Associates and Brovitz Community Planning & Design to assist the community in developing the strategic area plan. In preparing the plan, the project team evaluated the development potential along Route 30, Pine Street, Centennial Park, the Tufts Campus, and other properties identified on the NGTV Project Area Map. This included an assessment of the following:

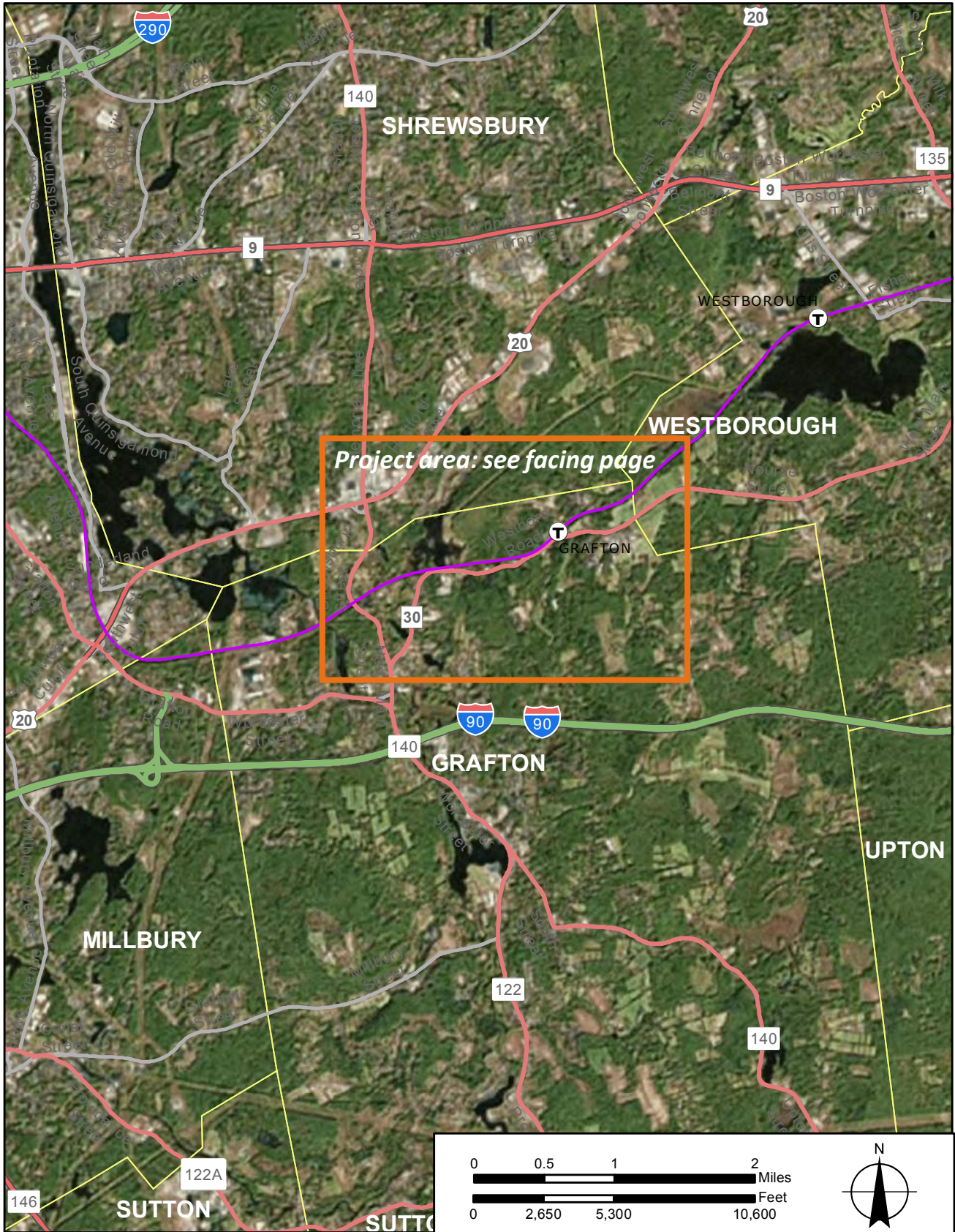
- Existing land uses, conditions, and trends.
- Existing and future infrastructure capacities and necessary improvements.
- Natural constraints with a key focus on identifying development potential for the project area.
- Consideration of employment projections associated with development potential at the Grafton Science Park and Centech Park.

The project team engaged residents, business and property owners, and public officials through a series of visioning workshops, stakeholder meetings, a visual preference survey, and public presentations to solicit input in preparing the strategic plan. The result is the NGTV Strategic Area Plan that addresses the above-mentioned challenges and opportunities, while providing a vision plans illustrating preferred future development scenarios with strategic actions for infrastructure improvements, zoning bylaw revisions, and other measuring to enhance land for development.



*One of the principal challenges for the proposed Transit Village site is how to pull together many disparate properties into a cohesive, walkable center with a strong sense of place.*

# PROJECT AREA CONTEXT



## 2.0 CONTEXT AND SETTING

The North Grafton Transit Village (NGTV) Project Area is centered on the intersection of Pine Street and Westboro Road (Route 30). The project area is 3.5 miles from the Massachusetts Turnpike Exit 11 (Millbury) via Rt. 122 and Rt. 30, 1.0 mile south of Rt. 20, and 6.0 miles west of Rt. 495 via Rt. 9 and Rt. 20.

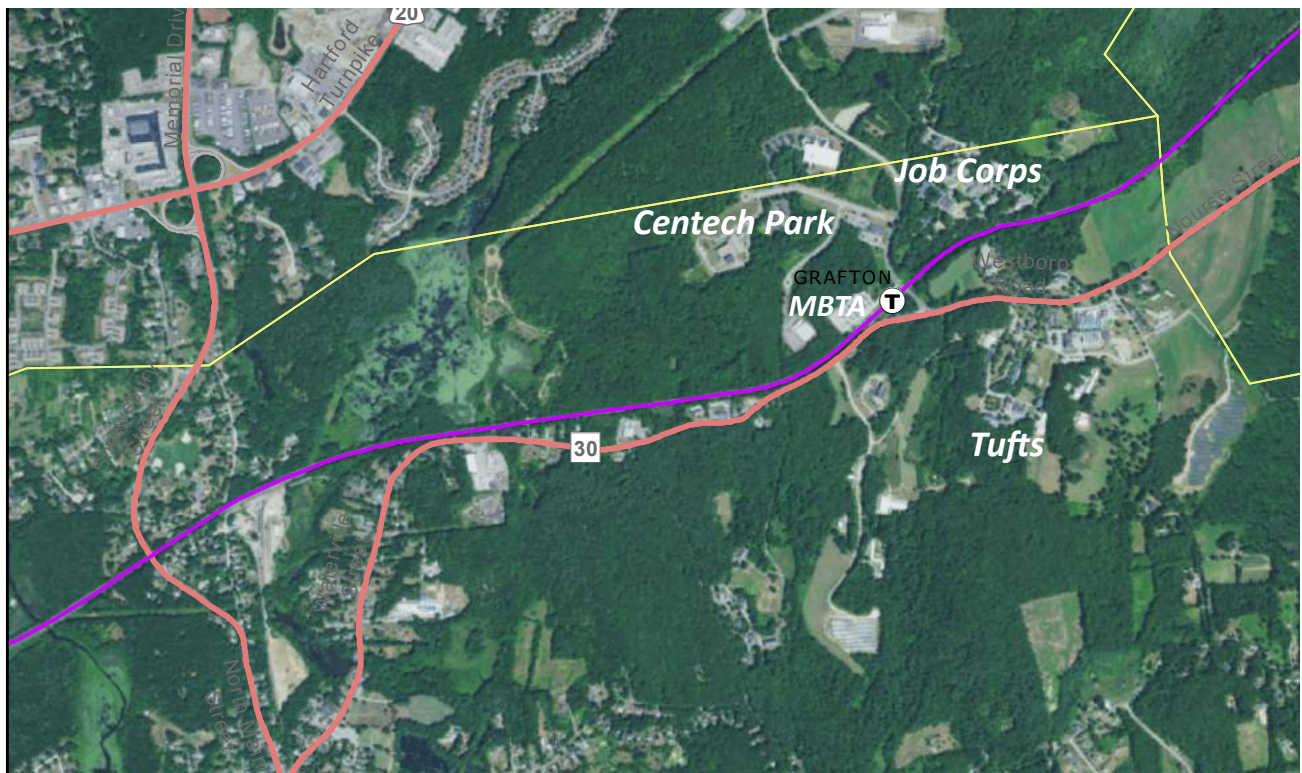
Land in this vicinity was originally part of the **Grafton State Hospital** which was established in 1901 as a farm colony for “chronic insane patients”. The State purchased about 700 acres from local families in North Grafton and Shrewsbury to increase the capacity of the main Worcester State Hospital and to provide therapeutic work for patients with an agricultural focus. The Hospital closed in 1973 as part of the State’s first phase of “deinstitutionalization” involving the decommissioning and repurposing of these facilities.

Over the years, the former Grafton State Hospital grounds has been divided up and reused as the Tufts Veterinary School campus, US Jobs Corps, Grafton Science Park, Department of Youth Services, Centech

Park, MBTA station, and other smaller properties. Grafton Science Park and Centech are State Priority Development Areas. The project area borders the Shrewsbury town line where Pine Street becomes Centech Blvd and connects with Route 20 (Hartford Turnpike) about a mile from the Pine Street and Route 30 intersection. Much of the land between the Shrewsbury town line and Route 20 is wooded with some rural residential and scattered industrial uses.

The area south of the NGTV Project Area is predominately rural residential and suburban subdivisions located off Old Westboro Road, Wesson Road and East Street. They are connected to the Project Area by Waterville Street, Institute Road, and Willard Street.

The area surrounding the North Grafton Commuter Rail Station represents an unique opportunity for the community to transform what is currently a collection of rural landscapes, suburban office parks and industrial sites, scattered homes, and institutional uses, and unite them into a walkable transit village. While the 2001 Grafton Master Plan identified the logic of this approach from a Smart Growth perspective, the NGTV Project Area presents significant challenges:



*North Grafton Transit Village project area*



*The Grafton State Hospital Administration Building (Historic Postcard Courtesy J Chilton)*

- Transitioning from an automobile-dependent pattern of development and separated uses into a mixed use village.
- Addressing market and zoning challenges that has many properties “locked in” to their current condition.
- Transitioning from growth that tends to conflict with the natural environment to more sustainable patterns that take advantage of the site’s unique natural setting.

The NGTV Strategic Area Plan addresses these challenges and illustrates a compelling vision for a lively mixed use village with new opportunities to live, work, eat, play, and learn. More importantly, the community realizes that the plan will be truly successful only if it results in a clear and achievable strategy for implementing that vision, supported by a broad consensus among residents, business owners and other stakeholders. These are the major objectives of the plan.

## SITE ANALYSIS

### Geography

The landscape of North Grafton is typical of the glaciated landscapes of central Massachusetts, comprised of hills with generally north-to-south ridgelines, interspersed with wetland systems throughout the low areas. The rolling topography in the North Grafton Transit Village area ranges from about 370 feet above sea level along the west end of the Rushwan Brothers property, to about 480 feet above sea level south of the Tufts campus. As with much of the town of Grafton, most easily developable parcels in this area have already been developed, leaving undeveloped parcels with restraints such as steep topography, wetlands, and lack of road access.

### Soils

The dominant soil types in this area are well-drained sandy loams, suitable for crops, trees, and pasture. Slower-draining soils can be found in low points and wetlands throughout the area.

### Hydrology

Almost all of the North Grafton Transit Village area is part of the Blackstone River watershed, except



for the easternmost area of the Tufts and Job Corps campuses, which drains into the SuAsCo Reservoir in Westborough as part of the Assabet Watershed. The campuses' ridge divides the Blackstone and Assabet watersheds.

The FEMA 100-year and 500-year flood zones overlap the western edge of the Rushwan Brothers property, but besides this, the NGTV area does not contain any FEMA-recognized flood-prone areas.

### **Ecology**

The area contains several potential vernal pools: 3 in wetlands along Westborough Rd, one in the north-west corner of Centech Park, and one in the south-eastern part of the Tufts campus. There is also one vernal pool certified by the Natural Heritage Endangered Species Program (NHESP), along Institute Rd on the Afonso property. These vernal pools represent important habitats for sensitive amphibian and invertebrate species, which many other species in the ecosystem rely on. These areas should therefore be protected. The NHESP has also designated the undeveloped area east of the Job Corps campus as "Priority Habitat" for aquatic, plant, and wildlife species, and therefore this area should be protected as well.

The Big Bummet stream corridor borders on the western end of Rushwan Brothers property, and is an ecosystem which has degraded in quality over the years because of adjacent development, effluent leaching, and other contamination.

Much of the NGTV area is forested. Upland vegetation consists of stands of oaks and hickories, as well as white pine and red maple, all of which are common to Grafton. The many wetlands scattered in systems throughout this area include deep fresh water marshes, shrub swamps, wet meadows, and wet woods. This diversity of plant communities in such close proximity allows this area to support a great variety of wildlife. These numerous wetlands also recharge groundwater and provide flood storage, protecting areas downstream which might otherwise be flood-prone.

### **Noteworthy Landscapes**

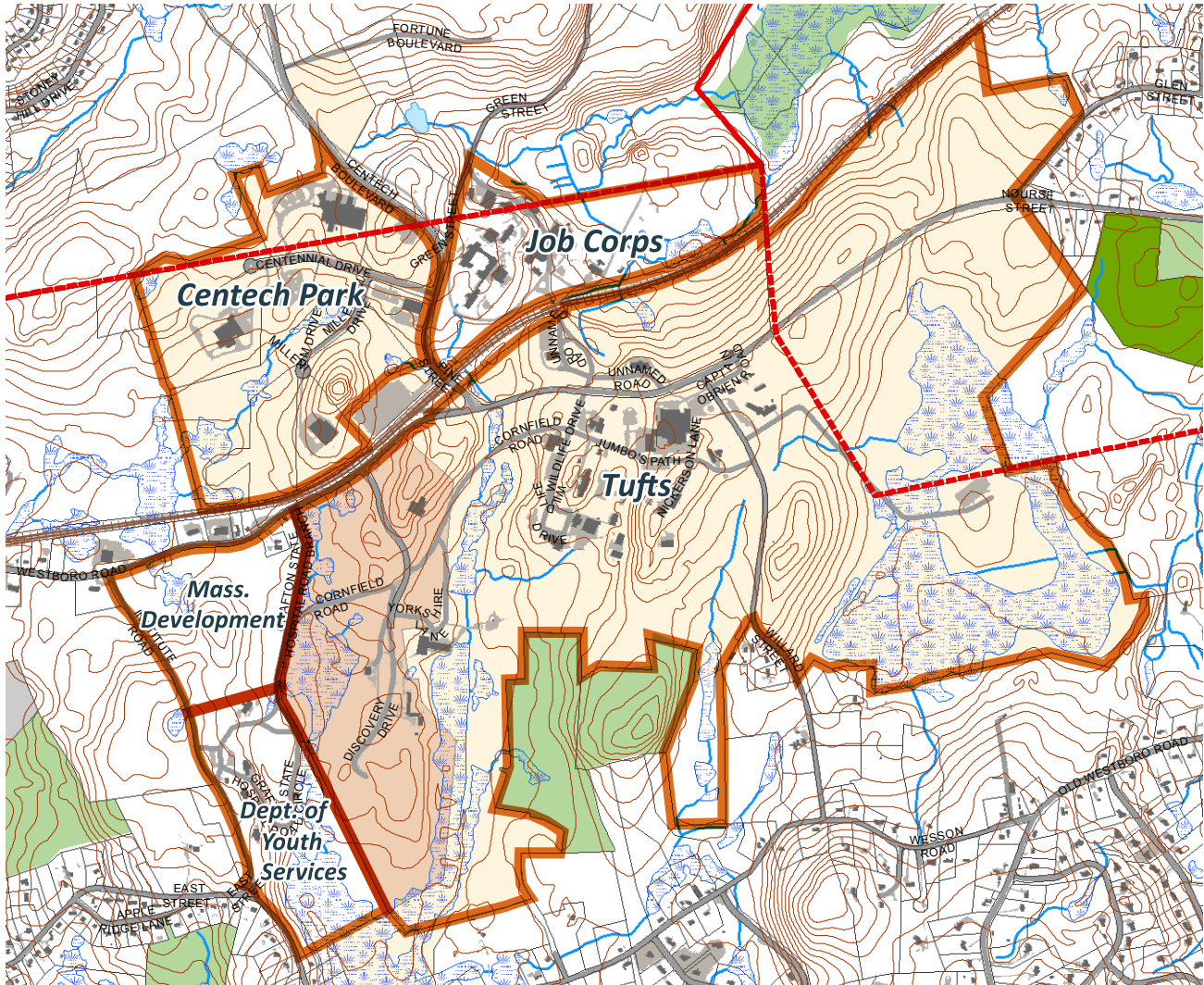
The town of Grafton has designated certain areas as

Noteworthy due to their scenic character. In the NGTV area, the Tufts campus falls under this category, indicating that the scenic character of this area is important to the cultural identity of Grafton and should be protected.

### **Environmental Challenges**

Wetlands, ponds and streams throughout Grafton have suffered from weed growth, impacts from poorly planned development, erosion from stormwater management infrastructure, and non-point source pollution. In response to these kinds of problems, the state is encouraging communities to incorporate Low Impact Development (LID) techniques into new development.

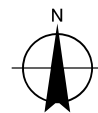
## MAJOR INSTITUTIONAL LAND USES AND/OR OWNERSHIP WITHIN PROJECT AREA



### Legend

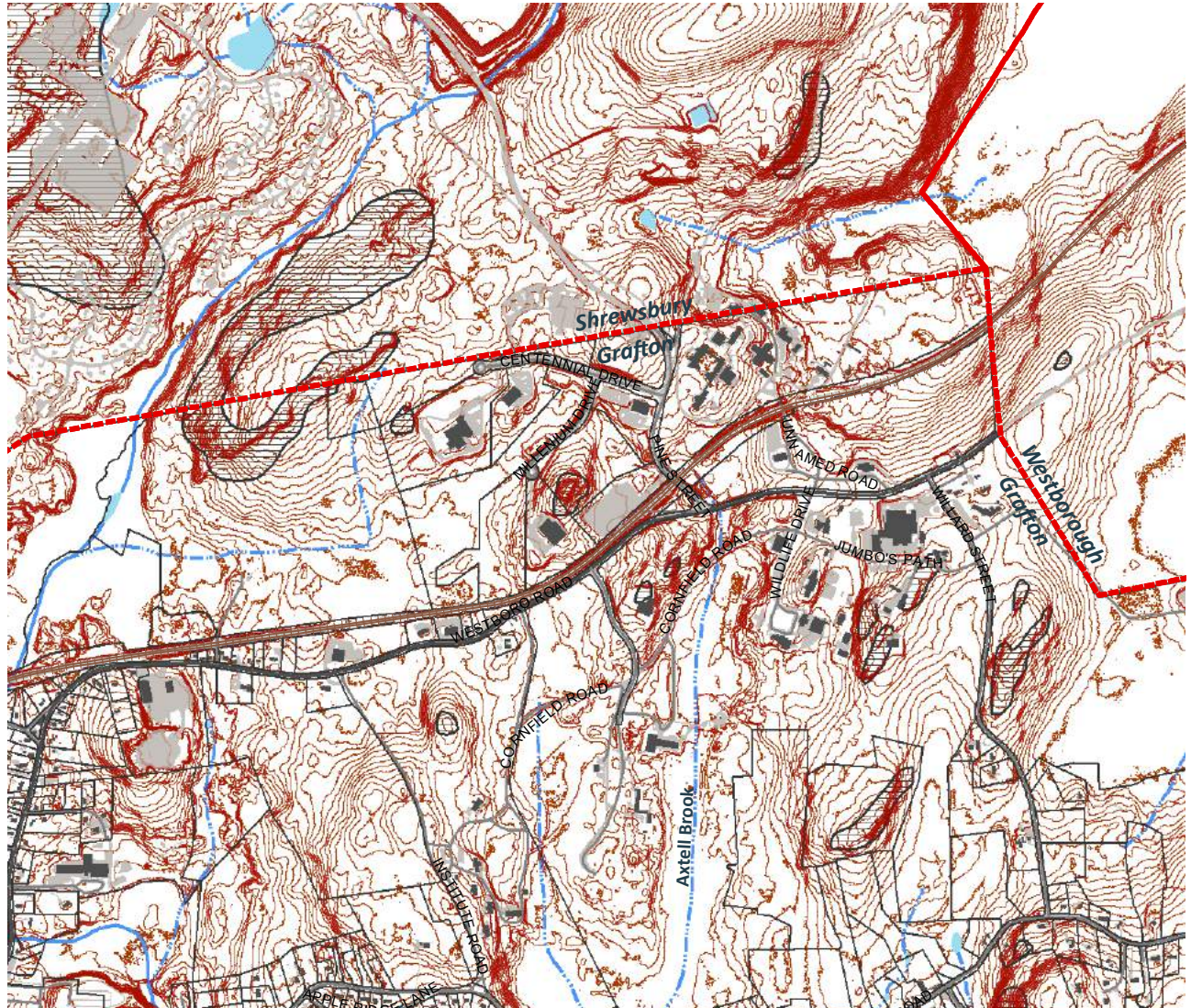
#### Open Space: Protection Level

- In Perpetuity
- Limited
- Term Limited
- None
- Unknown









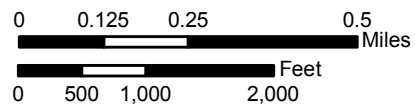
LANDOWNER	ACRES IN GRAFTON
Tufts	433.0
MBTA	5.3
Mass Development	40.7
Dept. of Youth Services	38.2
Centech	77.5
Job Corps	48.9

## TOPOGRAPHY, STEEP SLOPES, AND SURFACE BEDROCK WITHIN PROJECT AREA

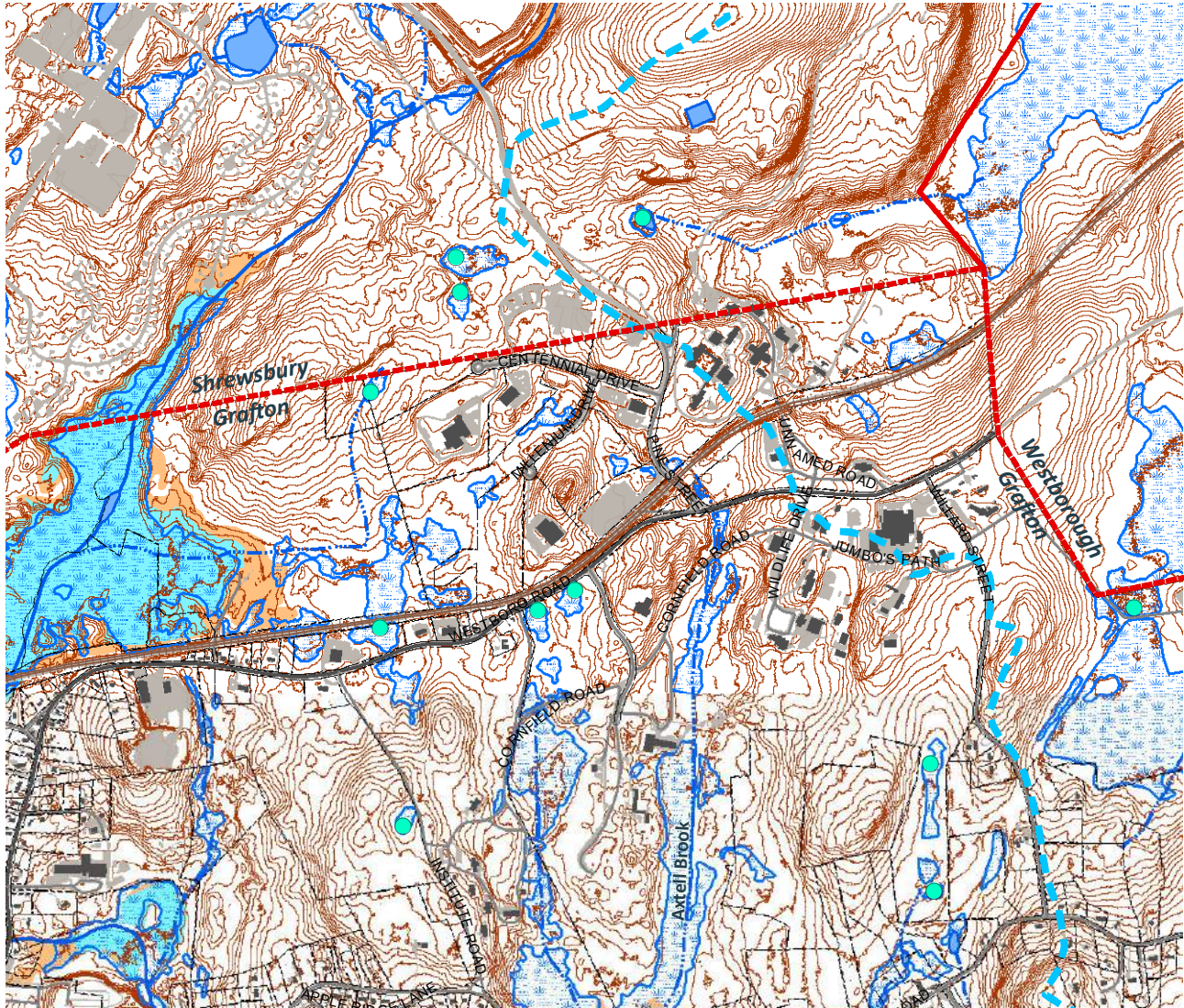


### Legend

-  Abundant Outcrop and Shallow Bedrock
-  Water Bodies
-  Perennial Stream
-  Intermittent Stream
-  5ft Contours
-  Greater than 25% Slope



## HYDROLOGY, FLOOD ZONES, AND WATER INFRASTRUCTURE WITHIN PROJECT AREA

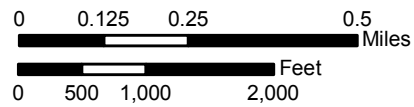


### Legend

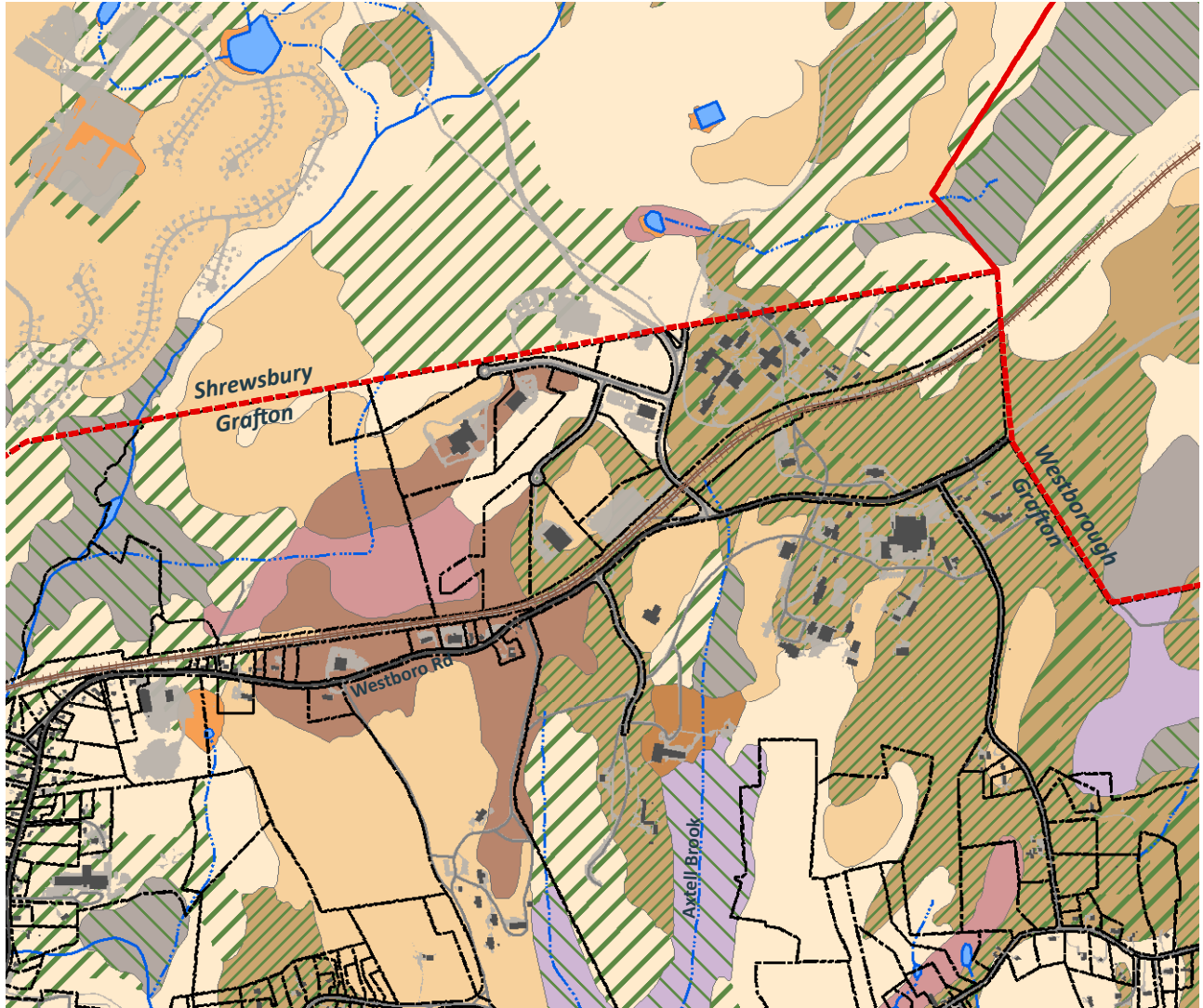
- Potential Vernal Pools
- Watersheds boundary
- Water Bodies
- Perennial Stream
- Intermittent Stream
- Wetlands
- 5ft Contours

### Flood Zone Designations

- AE: 1% Annual Chance of Flooding, with BFE
- X: 0.2% Annual Chance of Flooding



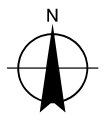
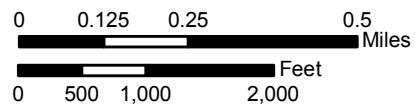
## SOILS WITHIN PROJECT AREA



### Legend

#### Soil Surface Texture

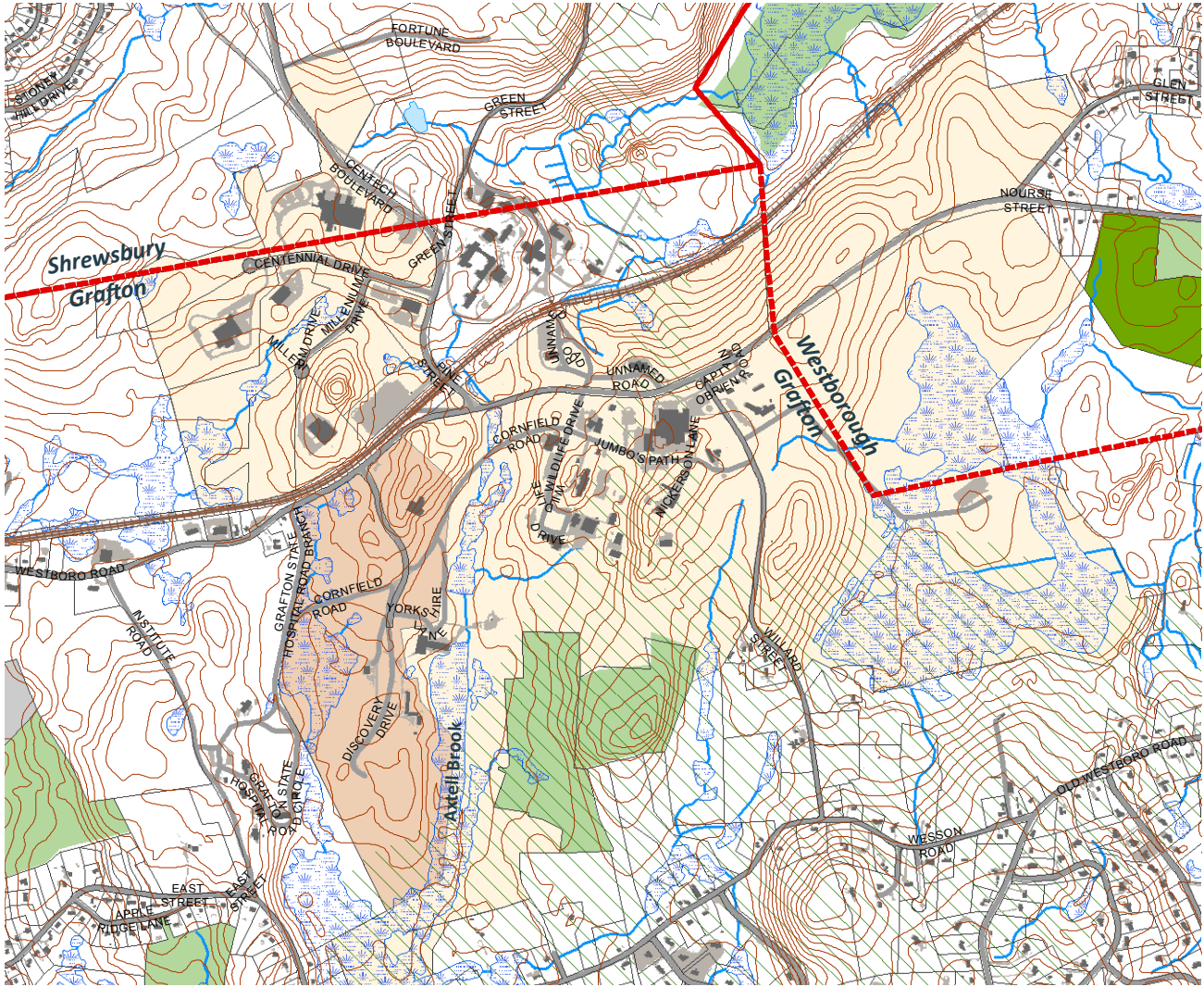
- Not rated or not available
- Muck
- Mucky peat
- Peat
- Fine sandy loam
- Sandy loam
- Moderately decomposed plant material
- Slightly decomposed plant material
- Variable



#### Prime Farmland Soils

- All Areas are Prime Farmland
- Farmland of Statewide Importance
- Farmland of Unique Importance

**MAJOR LANDOWNERS, PROTECTED LAND, AND SCENIC RESOURCES WITHIN PROJECT AREA**



**Legend**

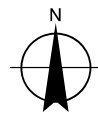
Scenic Landscape Inventory: Noteworthy

**Major Landowners**

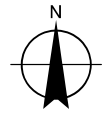
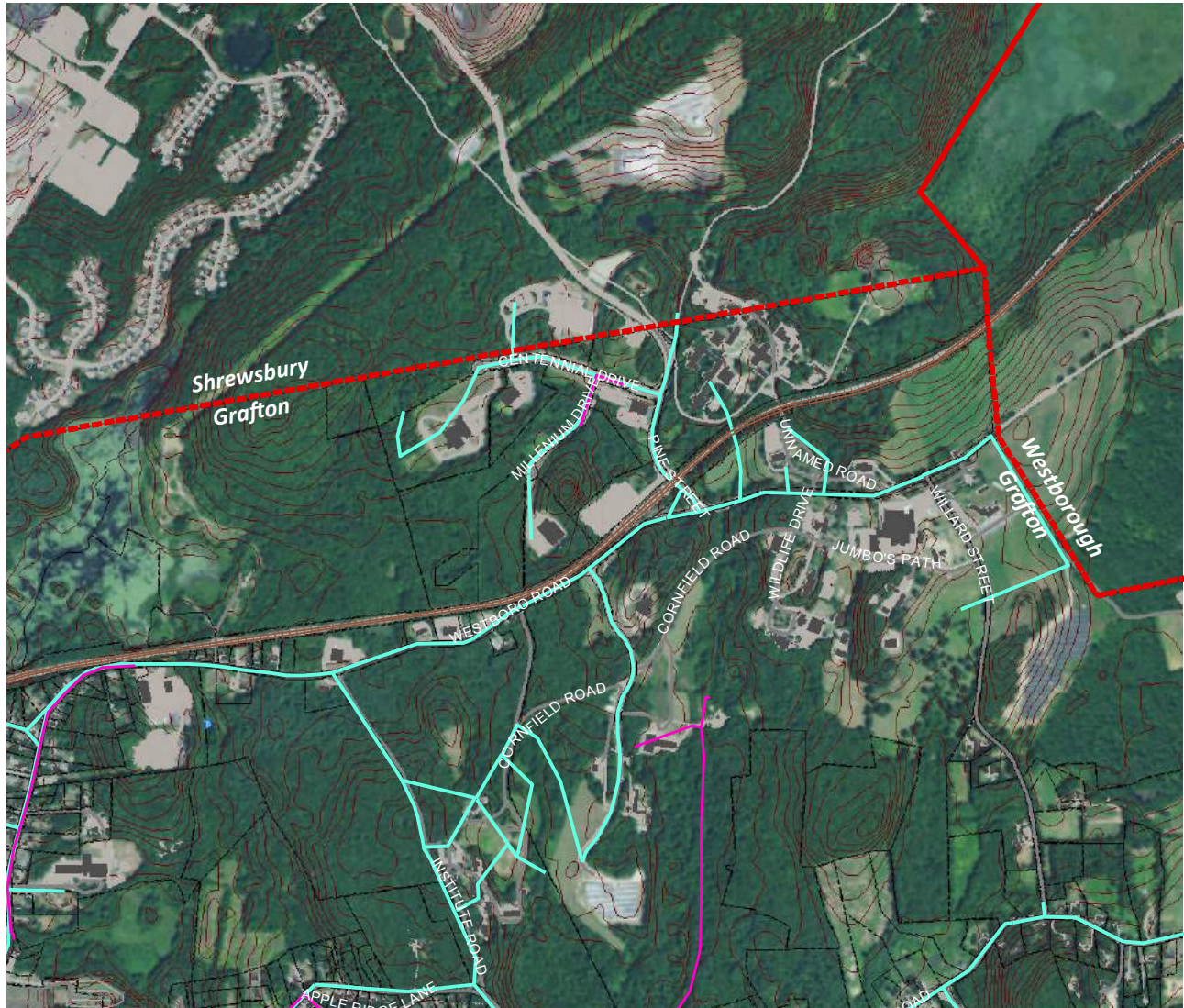
- Science Park
- Tufts and Centech

**Open Space: Protection Level**




- In Perpetuity
- Limited
- Term Limited
- None
- Unknown



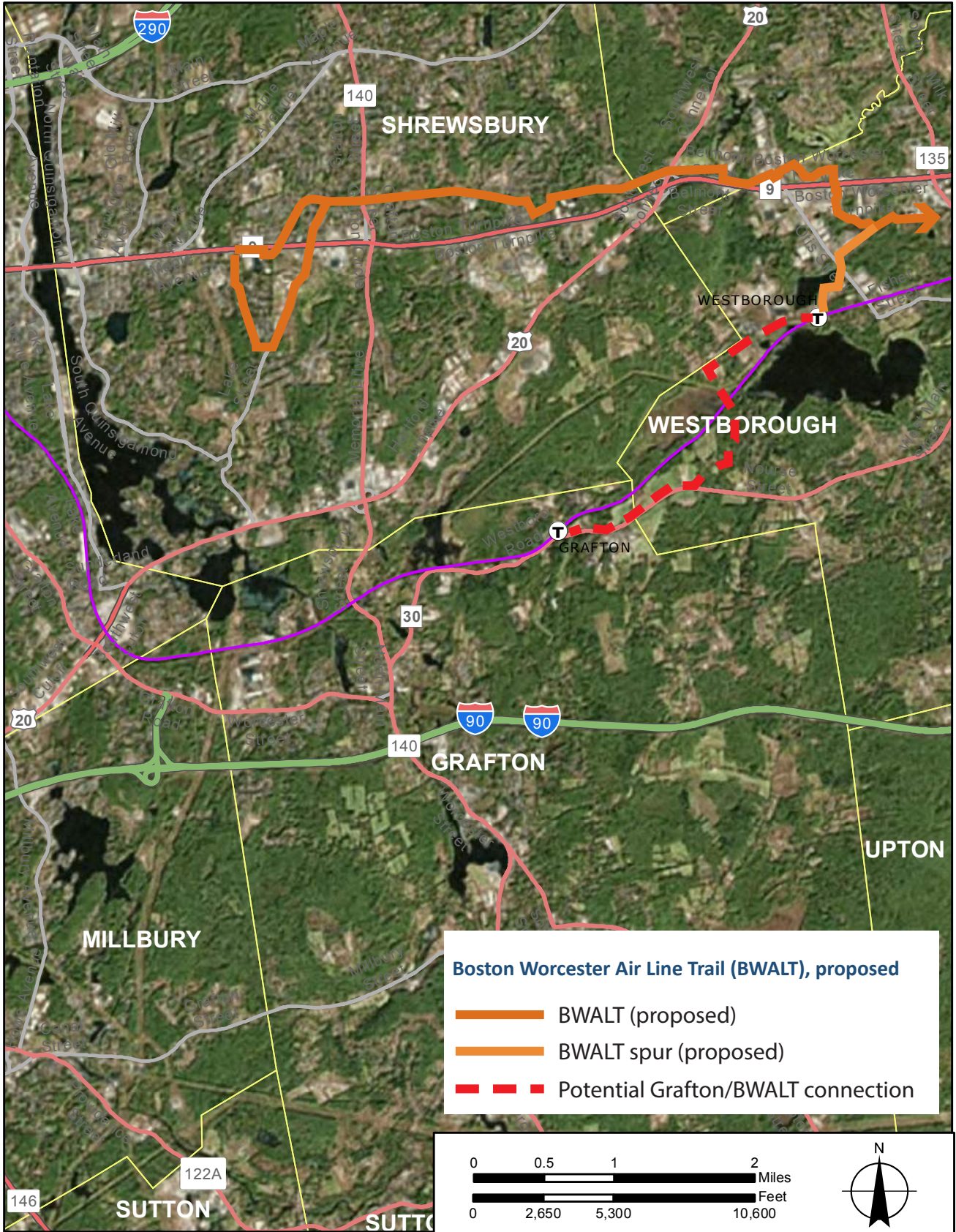
## SEWER AND WATER INFRASTRUCTURE WITHIN PROJECT AREA



### Legend

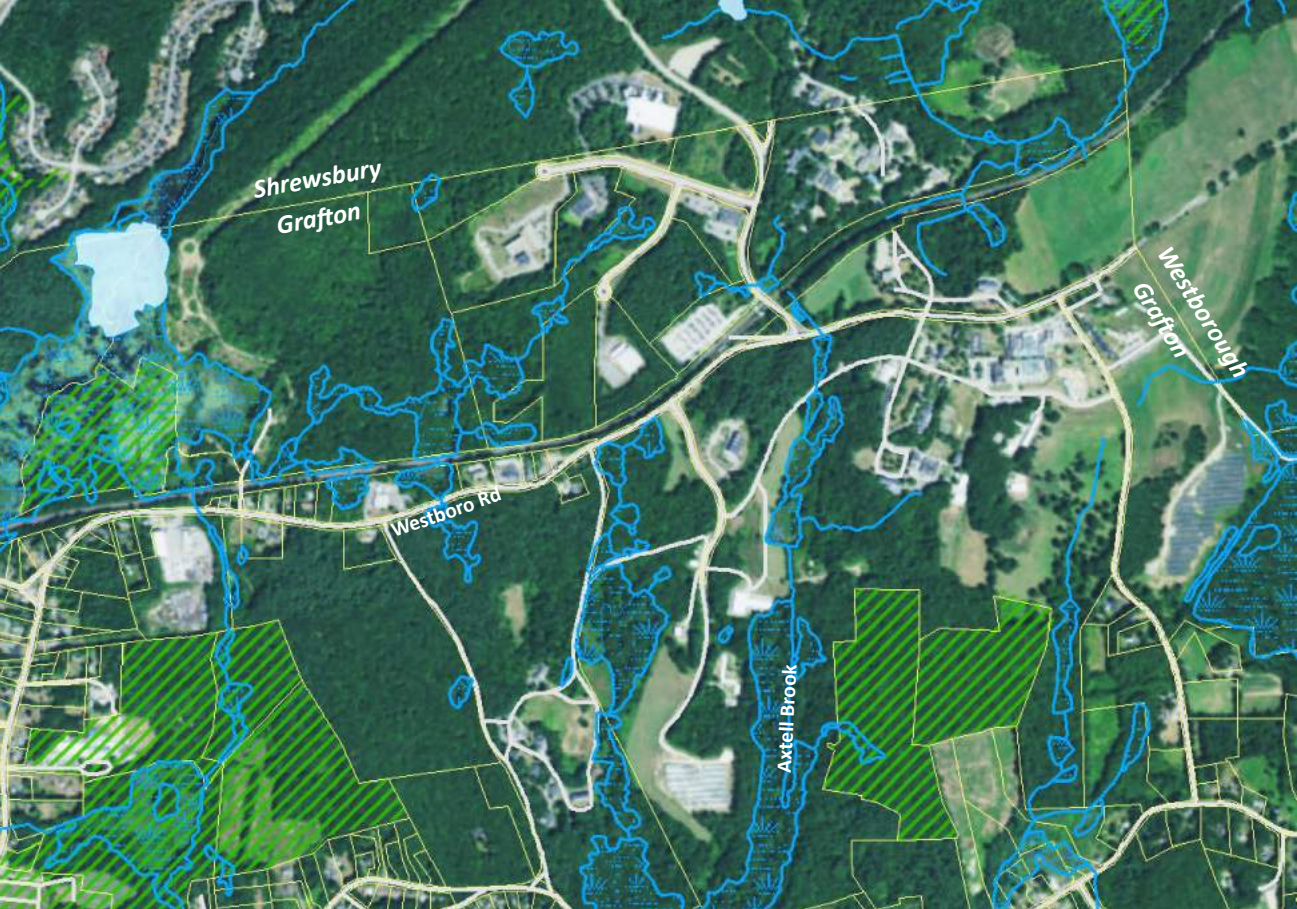
-  Sewer Lines
-  Main Water Distribution Lines
-  Active Rail Service

**BOSTON WORCESTER AIR LINE TRAIL (BWALT), PROPOSED**





**STREAMS, WETLANDS, AND PROTECTED LAND WITHIN PROJECT AREA**



### 3.0 PROPERTY CHARACTERISTICS, TRENDS, AND FUTURE VISION

The NGTV Project Area includes 44 parcels totaling 856 acres of land. The Project Area is bound by to the north by the Shrewsbury town line; to the west by Windle Pond, Town conservation land, and the residence at 82 Westboro Road (the western edge of the OLI Zone); to the south by Town conservation land, Afonso property, the DYS facility, Grafton Science Park and the Tufts Veterinary School campus; and the east by the Westborough town line. The table below provides an inventory of all properties in the project area.

#### GENERAL CONDITIONS

##### Current Land Use, Ownership and Property Values

Of the 856 acres in the project area, 591 acres (65%) are owned by State, Town, or institutional entities. About 58 acres (6.4%) are in residential use, and about 205 acres (23%) are in commercial and industrial use. About 50 acres of residential lands and 148 acres of commercial/industrial land is classified as potentially developable. Of the 44 parcels in the project area, 15 (or 34%) are owner-occupied. Decisions about future land use and development, for the most part, are made by individuals and organizations outside Grafton.

Over the past 10 years, the total property values in the project area have increased by nearly \$26 million (or 38%). While the average increase in property value was \$561,504, 18 properties actually lost value. Most of these were small residential and mixed use properties which, individually, have substantial constraints to future development under current zoning requirements.

**Table: Land Use, general**

Owner type	Acres within project area	Percentage of project area	Acres, potentially developable
State, Town, or Institution	591	65%	
Residential	58	6.4%	50
Commercial and Industrial	205	23%	148

#### Public Infrastructure

The NGTV Project Area is served by **public water** from the Grafton Water District with sufficient capacity for future growth. Most water is provided by a 12-inch ductile iron water main in Westborough Road (Route 30). The Grafton Water District has an average daily remaining water capacity of 2 million gallons per day.

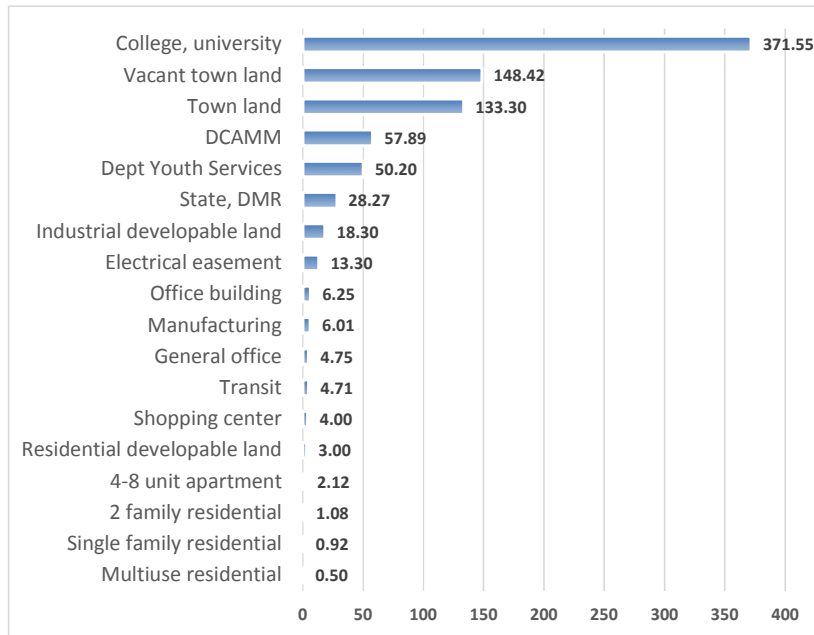
**Public sewer** is available in the eastern portion of the project area including Tuft Veterinary School Campus, Grafton Science Park, Centech Park, and the Job Corps campus. A new 8-inch sanitary sewer main connecting to the existing 8-inch main (constructed in 1980) on the Tufts campus serves the Grafton Science Park. The western edge of the NGTV Project Area is also served by public sewer which terminates at 88 Westboro Road to the south and 36 Rear Nelson Street to the north. The availability of public sewer then begins at 42 Institute Road to the south and the properties in Centech Park to the north. The remaining sewer treatment capacity at the Grafton WWTP is 500,000 gallons per day.

Eversource provides **electric power** transmission in the project area. Generation of electricity has been open to competition from a number of suppliers since March 1998. NStar provides medium pressure **natural gas** to the project area and **fiber optic cable** is available in Route 30.

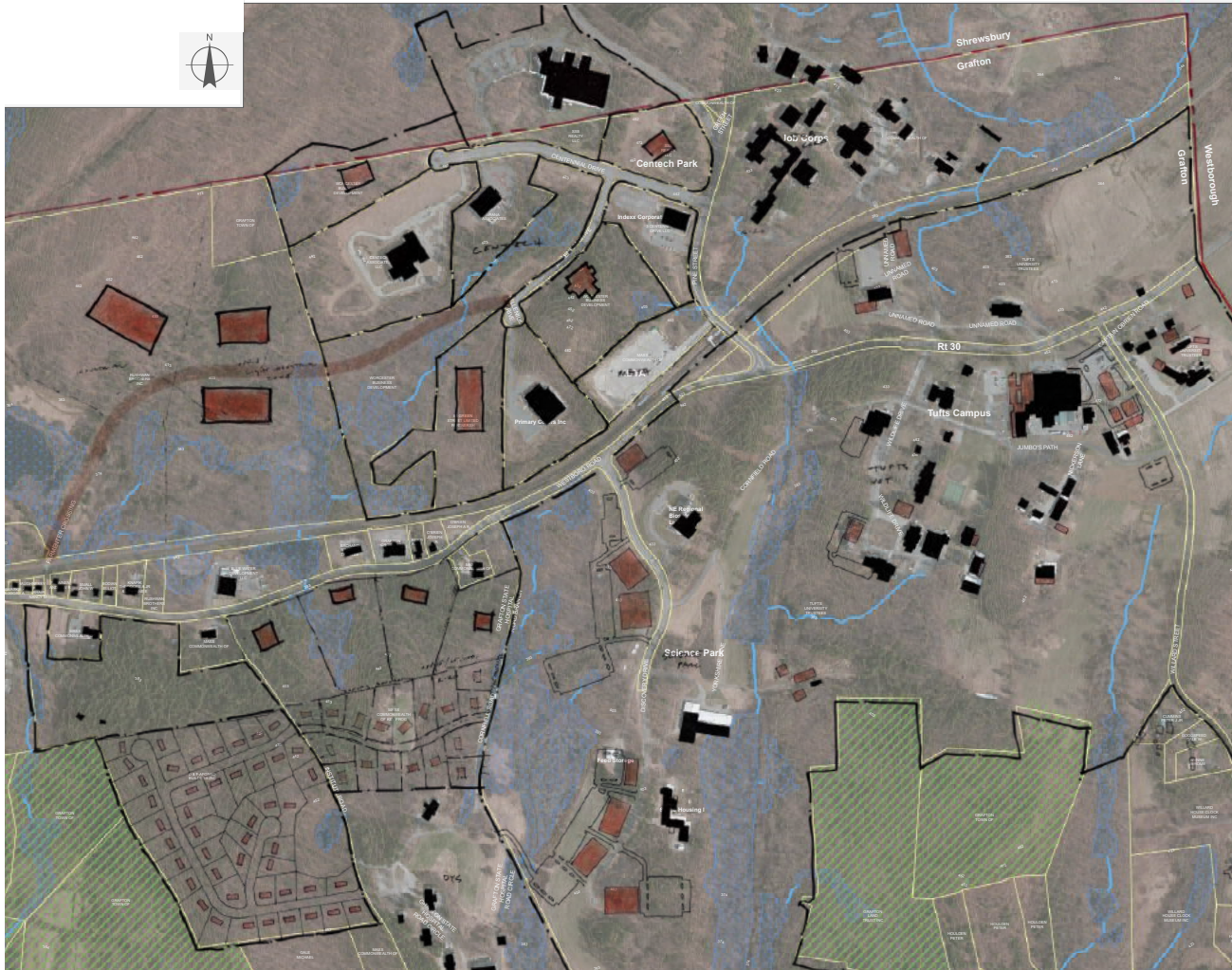
Bicycle connectivity to the area could improve when the proposed Boston Worcester Air Line Trail (BWALT) is implemented. A potential bike trail connecting North Grafton to the BWALT Westborough spur is shown on the map on page 12.

**Table: Land Use, detailed**

LAND USE CODE	USE	TOTAL ACRES	%	TOTAL PARCELS
942 - COLLEGE/UNIV	College, university	371.55	40.8%	1
936 - TOWN VACANT	Vacant town land	148.42	16.3%	2
930 - TOWN LAND	Town land	133.30	14.6%	3
928-DCAM-BSOB-NR	DCAMM	57.89	6.4%	2
922-DYS-COR-NR	Dept Youth Services	50.20	5.5%	3
914 - STATE/DMR DMR	State, DMR	28.27	3.1%	2
440/441-IND-DEV-LAND	Industrial developable land	18.30	2.0%	7
423-ELEC-EASEMNT	Electrical easement	13.30	1.5%	1
402-OFFICE-BLDG	Office building	6.25	0.7%	1
400-MANUFACTURNG	Manufacturing	6.01	0.7%	3
340-GEN-OFFICE	General office	4.75	0.5%	1
330-TRANSIT-WHSE	Transit	4.71	0.5%	1
323-SH-CNTR/MALL	Shopping center	4.00	0.4%	1
130-RES-DEV-LAND	Residential developable land	3.00	0.3%	3
111-4-8-UNIT-APT	4-8 unit apartment	2.12	0.2%	2
104-TWO-FAM-RES	2 family residential	1.08	0.1%	1
101-SNGL-FAM-RES	Single family residential	0.92	0.1%	9
013-MULTIUSE-RES	Multiuse residential	0.50	0.1%	1
<b>TOTAL</b>		<b>854.57</b>		<b>44</b>



## BUILDOUT ANALYSIS



**Buildout Analysis (prior to 2017 Spring Annual Town Meeting). Existing buildings in black; potential new buildings in brown. Based on:**

- Existing zoning - see Section 4.0 Land Use Regulations
- Tufts Campus Master Plan
- Grafton Science Park Master Plan
- Proposed site plans for Centech Park
- Afonso property proposed subdivision

## WESTBORO ROAD CORRIDOR/WEST SEGMENT

### Town Land/81 Rear Westboro Road (110/012.0-0000-0015.A)

**Existing Conditions:** This 22-acre parcel is owned by the Town of Grafton off Parmenter Road on the north side of Route 30 and the railroad r-o-w. The property is in the Industrial district as well as the Water Supply Protection Overlay District (WSPOD) and abuts the Rushwan Brothers industrial lands to the east. The property has a permanent conservation easement and frontage on Windle Pond and Big Bummett Brook.

**Future Vision:** The property could provide passive recreational opportunities such as trails, picnic areas, fishing, and similar activities. Trails could possibly be connected to Centech Park including future development on the Rushwan Brothers property to enhance the business park which currently has no recreational amenities.

### Rushwan Brothers/105 Westboro Road (110/012.0-0000-0015.0)

**Existing Conditions:** This 153-acre property (including a 96 and 57-acre parcel) is owned by the Rushwan Brothers and is located off Parmenter Road on the north side of Route 30 and the railroad r-o-w. The western parcel is in the Industrial District and the Priority Development Overlay District (PSOD). The eastern parcel is located in the OLI district with the Campus Development Overlay District (CDOD). The property has no public street frontage in Grafton and is only accessible from Parmenter Road which connects Westboro Road between 2 small residential lots as well as a narrow, at-grade crossing of the railroad tracks. However, this property extends into Shrewsbury, and has frontage and access to Centech Blvd. Areas of the property have steep slopes and others appear to be in wetlands fed by intermittent streams (particularly to the south along the railroad corridor). The property is served by public water service and is in close proximity to public sewer and gas.

**Future Vision:** The property provides good opportunity for office park development including a variety of manufacturing, science and technology, and R&D

facilities both in Grafton as well as Shrewsbury. The property is also a possible location for a freight rail spur which could be attractive to prospective manufacturers. A connection to Centennial Drive can be made in cooperation with WBDC with access through Lot 4, or 3 and a Town parcel (105 Rear Westboro Road). This potential connection as well as to Centech Blvd in Shrewsbury would provide much improved access, connectivity, and traffic distribution between businesses in the park, the MBTA station, Tufts, and Routes 20 and 30. This may be critical as more development occurs in the NGTV project area.

### N.E. Power/83 Westboro Road (110/012.0-0000-0015.B)

**Existing Conditions:** This 3-acre parcel is owned by New England Power and is located off Parmenter Road on the north side of Route 30 and the railroad r-o-w. The property is bisected by the power easement.

**Future Vision:** The property has limited potential for development given its poor access and power-line easement. It may have potential for a small solar array.

### Residence/82 Westboro Road (110/012.0-0000-0013.0)

This 42,253 S.F. parcel is in the OLI district and has 142.5 feet of frontage on Westboro Road. The parcel is occupied by a single-family home that was constructed in 1920. Public water, sewer and gas are



*Parmenter Road*

**WESTBORO ROAD CORRIDOR, WEST / CENTRAL SEGMENT**



available on site. At the owner's discretion, the property has potential for small business or small scale multifamily development.

### **Residence/84 Westboro Road (110/012.0-0000-0013.0)**

This 1.14-acre parcel forms the western edge of the NGTV Project Area and has 50 feet of frontage on Westboro Road. The parcel is located in the OLI district and occupied by a single-family home that was constructed in 1975 and sit back a few hundred feet off the road. Public water and sewer are available on site. At the owner's discretion, the property has potential for small business or small scale multifamily development.

### **Dana Transportation/86 Westboro Road (110/012.0-0000-0012.A)**

This 40,075 S.F. parcel is in the OLI district and has 50 feet of frontage on Westboro Road. The parcel is occupied by Dana Transportation and a two-family home that was constructed in 1950. Public water is available on site. The property is currently in use for small business and residential which has some potential for expansion in the future.

### **Equipment Care of Grafton/88 Westboro Road (110/012.0-0000-0012.0)**

This 13.3-acre parcel is in the OLI district and has 297 feet of frontage on Westboro Road. The parcel is occupied by Dana Transportation/Equipment Care of Grafton and contains 3 buildings utilized for transportation services totaling over 19,000 S.F. constructed in 1959. Public water, sewer, and gas is available on site. The property has potential for expansion or redevelopment in the future.

## **WESTBORO ROAD CORRIDOR/CENTRAL SEGMENT – NORTH SIDE**

This segment of the Westboro Road corridor is in the OLI district and includes several small residential and commercial properties. Many of the buildings were constructed Post WWII including a number of cape and ranch style homes. Individually, these properties have limited potential for infill or redevelopment due to small lot size and limit depth with the abutting



*Dana Transportation, 86-88 Westboro Rd*



rail corridor. Collectively, there is moderate potential for redevelopment with medium density mixed use as shown on the NGTV Vision Plan.

### **Residence/93 Westboro Road (110/012.0-0000-0011.0)**

This small single family house was built in 1950 and is located on the north side of Route 30. The property has 131 feet of frontage on Westboro Road but the lot is only 6,534 S.F. and the rear lot line borders the railroad r-o-w. Public water service is provided but not sewer or gas currently. At the owner's discretion, the property would only have potential for reuse in combination with adjacent properties.

### **Residence/95 Westboro Road (110/012.0-0000-0010.0)**

This small single family house was built in 1950 and is located on the north side of Route 30. The property has 87 feet of frontage on Westboro Road but the lot is only 6,970 S.F. and the rear lot line borders the railroad r-o-w. Public water service is provided but not sewer or gas currently. At the owner's discretion, the property would only have potential for reuse in combination with adjacent properties.

### **Residence/97 Westboro Road (110/012.0-0000-0009.0)**

This small single family house was built in 1950 and is located on the north side of Route 30 at the north-west corner of Parmenter Road. The property has 90 feet of frontage on Westboro Road but the lot is only

6,098 S.F. and the rear lot line borders the railroad r-o-w. Public water service is provided but not sewer or gas currently. At the owner's discretion, the property would only have potential for reuse in combination with adjacent properties.

**Residence/107 Westboro Road (110/012.0-0000-0008.0)**

This small single family house is located on the north-east corner of Westboro Road and Parmenter Road. The 16,553 S.F. parcel has 100 feet of street frontage and borders the railroad r-o-w to the rear. Public water service is provided but not sewer or gas currently. At the owner's discretion, the property has some potential for reuse such are small scale commercial and residential independently or in combination with adjacent properties.

**Residence/109 Westboro Road (110/012.0-0000-0007.0)**

This property is located on the north side of Westboro Road and includes a small single family house and large garage built in 1924. The 33,977 S.F. parcel has 189 feet of street frontage and borders the railroad r-o-w to the rear. Public water service is provided but not sewer or gas currently. At the owner's discretion, the property has some potential for reuse such are small scale commercial and residential independently or in combination with adjacent properties.

**Residence/111 Westboro Road (110/012.0-0000-0005.0)**

This property is located on the north side of Westboro Road and includes a small single family house built in 1963. The 18,73 S.F. parcel has 85 feet of street frontage and borders the railroad r-o-w to the rear. Public water service is provided but not sewer or gas currently. At the owner's discretion, the property would only have potential for reuse in combination with adjacent properties.

**Apartment House/113 Westboro Road (110/012.0-0000-0006.0)**

This property is located on the north side of Westboro Road and includes a small apartment building with 4 rental units built in 1982. The 1-acre parcel has 170

feet of street frontage and borders the railroad r-o-w to the rear. Public water service is provided but not sewer or gas currently. At the owner's discretion, the property has potential for additional infill development on site or reuse in combination with adjacent properties.

**Vacant Parcel/117 Westboro Road (110/012.0-0000-0002.0)**

This vacant 29,621 S.F. parcel is located on the north side of Westboro Road and is owned by the Rushwan Brothers. The parcel has 170 feet of street frontage and borders the railroad r-o-w about 250 feet to the rear. The property also abuts the Rushwan Brothers industrial properties to the north, and it may be possible that this parcel might be considered an alternative access to Parmenter Road. Public water service is provided but not sewer or gas currently. At the owner's discretion, the property has potential for development on site or reuse in combination with adjacent properties.

**Sunshine Sign Company/121 Westboro Road (110/012.0-0000-0001.0)**

This property is located on the north side of Westboro Road and includes the Sunshine Sign Company which is almost 30 years old. The 10,000 S.F. building was constructed in 2000 and used for sign fabrication. The 6.32-acre parcel has over 1,000 feet of street frontage and borders the railroad r-o-w to the rear. Public water service is provided but not sewer or gas currently. There appears to be some wetlands on site. However, in addition to the sign manufacturer, the property has good potential for additional infill development on site.



*Sunshine Sign Co., 121 Westboro Rd*





*Grafton Crossing Plaza, 135 Westboro Rd*

**Apartment House/131 Westboro Road (110/012.0-0000-0017.0)**

This property is located on the north side of Westboro Road and includes a small apartment building with 4 rental units built in 1987. The 1.1-acre parcel has 251 feet of street frontage and borders the railroad r-o-w to the rear. Public water service is provided but not sewer or gas currently. At the owner’s discretion, the property has potential for additional infill development on site or in combination with adjacent properties.

**Grafton Crossing Plaza/135 Westboro Road (110/013.0-0000-0002.0)**

This small strip center is located on the north side of Westboro Road and includes Perro Shotokan Karate, Pecorino Artisanal Cheeses and Fine Wine, T Station Pizza, Holy Cow Ice Cream, and Wicked Twisted Soft Pretzels. The 13,533 S.F. building was originally constructed in 1920 and renovated several time. The 1.08-acre parcel has 217 feet of street frontage and borders the railroad r-o-w to the rear. Public water service is provided but not sewer or gas currently. The property has good potential for additional infill development on site or future redevelopment at the owner’s discretion.

**Small Mixed Use Building/137 Westboro Road (110/013.0-0000-0003.0)**

This property is located on the north side of Westboro Road and includes a small single family home and business. The home was built 1915 and contains 3,668 S.F. of space for the residence and business. The



*139 and 141 Westboro Rd*

0.5-acre parcel has 144 feet of street frontage and borders the railroad r-o-w to the rear. Public water service is provided but not sewer or gas currently. At the owner’s discretion, the property has some potential for additional infill development on site or in combination with adjacent properties.

**Window Logic/139 Westboro Road (110/013.0-0000-0001.0)**

This property is located on the north side of Westboro Road and includes a small single family house built in 1961. The 0.56-acre parcel has 139 feet of street frontage and borders the railroad r-o-w to the rear. The land use code identifies the current use as single family residential but the property may be used as an office for the window company. Public water service is provided but not sewer or gas currently. At the owner’s discretion, the property would have potential for redevelopment individually or in combination with adjacent properties.

**Window Logic/141 Westboro Road (110/013.0-0000-0004.0)**

This vacant 27,000 S.F. parcel is located on the north side of Westboro Road. The lot has nearly 400 feet of street frontage but the lot tappers down from 160 feet in depth on the western property line to just 16 feet on the east side where the road and railroad r-o-w come together. Public water service is provided but not sewer or gas currently. At the owner’s discretion, the western portion of the property could be

developed independently or in combination with the adjacent and commonly-owned property to the west.

### **WESTBORO ROAD CORRIDOR/CENTRAL SEGMENT – SOUTH SIDE**

This segment of the project area includes properties on the south side of Westboro Road generally between the power lines to the west, East Street to the south and Grafton State Hospital Road to the east. This includes properties on both side of Institute Road. The NGTV Vision Plan illustrates this area being redevelopment in a traditional neighborhood patterns with a moderate scale mix of commercial and residential buildings connected by narrow streets, sidewalks, and multi-purpose trails, and integrated with passive and active open spaces.

#### **Mass. Department of Youth Services (DYS)/120 Westboro Road (110/012.0-0000-0021.0)**

**Existing Conditions:** This state-owned property is located on the south side of Westboro Road and includes a 3,732 S.F. building which was constructed in 1960. The building is under the jurisdiction of DYS but is currently being utilized the Dept. of Environmental Management. The 2-acre parcel has 300 feet of street frontage and is serviced by public water but not sewer or gas currently. The property is in the OLI district and the Water Supply Protection Overlay District (WSPOD).



**120 Westboro Rd**

**Future Vision:** The property has potential for redevelopment with limitations under the WSPOD if the using agency decides to relocate. The NGTV Vision Plan illustrates how this property could be repurposed as a combination of neighborhood commercial, residential, and mixed use at a pedestrian scale.

#### **Afonso Property/100 Westboro Road (110/012.0-0000-0022.0)**

**Existing Conditions:** This portion of the State’s land on the west side of Institute Road was sold to D&F Afonso Builders (a residential developer). The 49-acre property has over 500 linear feet of frontage on Westboro Road (in 2 locations) and 2,000 feet on Institute Road. Most of the property is zoned R-20 except the frontage area along Westboro Road which is zoned OLI to a depth of 1,000 feet from the railroad corridor. This split zoning could be considered a disadvantage for future mixed use development given the vision for this segment of the NGTV Project Area. The owner is currently in the review process for a 46-unit single-family subdivision along the western edge of Institute Road called the “Village at Institute Road”. A Major Residential Special Permit was approved with conditions in 2015 and the applicant is currently seeking Definitive Plan approval. While the developer has proposed a conventional subdivision, Afonso has indicated their willingness to work with the Town to consider other options including a mixed-use project along Route 30 frontage for commercial and residential use.



**122 Westboro Rd**

**Future Vision:** The NGTV Vision Plan illustrates a combination of traditional walkable neighborhoods on the south side of the property and a mixed-use village with moderate density commercial and residential uses along the Westboro Road corridor. A variety of housing types would be included in the plan to support “aging in place” and a broad range of age, income, and household demographics. The development would be interconnected with a series of narrow, tree-lined street, sidewalks and multi-purpose trails. These trails would also connect the development to other areas in the NGTV Project Area such as the MBTA Station, Centech Park, Tufts Campus, Grafton Science Park, and the North Grafton Elementary School and Town conservation lands to the west.

**Town Conservation Land/71 and 81 Rear East Street (110/020.0-0000-0022.0 + 23.0)**

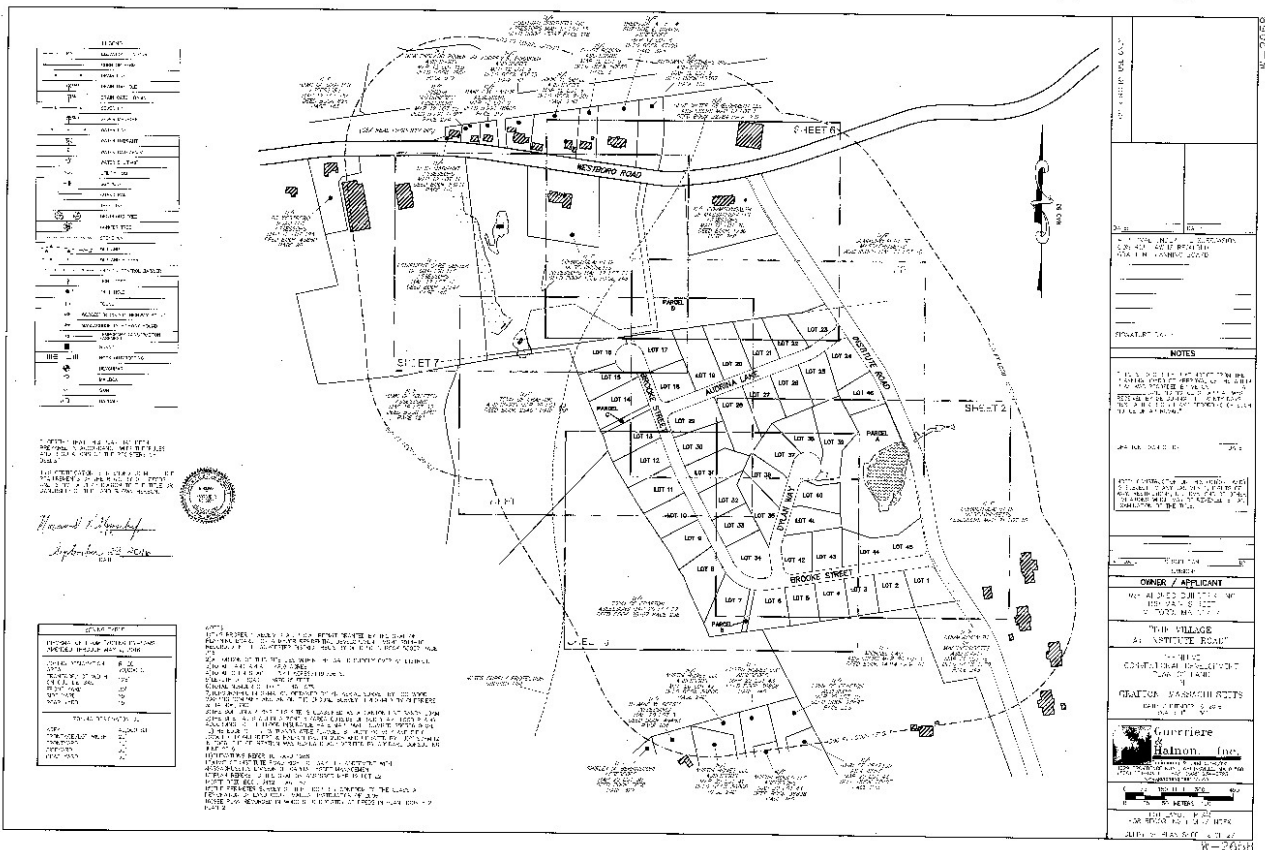
**Existing Conditions:** These two Town properties make up the conservation lands directly behind the North Grafton Elementary School to the east, and the

homes on East Street to the north. A portion of these properties are bisected by Big Bummatt Brook which connects nearby Hayes Pond and Pratts Pond. A series of old pathways also bisect the properties. The 71 Rear East Street property has a perpetual conservation restriction. These properties are located in the R-20 District and the Water Supply Protection Overlay District (WSPOD).

**Future Vision:** These properties have the potential to provide the surrounding area with passive recreation. As shown on the NGTV Vision Plan, multipurpose trails and open spaces on this site could connect the North Grafton Elementary School and surrounding neighborhoods on Waterville Street and East Street with new neighborhoods, Grafton Science Park, the Tufts Campus, and MBTA Station to the east.

**Mass. Department of Mental Health (DMH)/122 Westboro Road (110/012.0-0000-0020.0)**

**Existing Conditions:** This state-owned property is



**Subdivision Plan for the Afonso property: “Villages at Institute Road”, 100 Westboro Road**

located on the south side of Westboro Road at the corner of Institute Road. A 2,816 S.F. building is located on site which was constructed in 1950. The building is under the jurisdiction of DMH and utilized by DYS. The 2-acre parcel has 281 feet of street frontage and is serviced by public water but not sewer or gas currently. The property is in the OLI district.

**Future Vision:** The property has potential for redevelopment if the using agency decides to relocate. The NGTV Vision Plan illustrates how this property could be repurposed as a combination of neighborhood commercial, residential, and mixed use at a pedestrian scale.

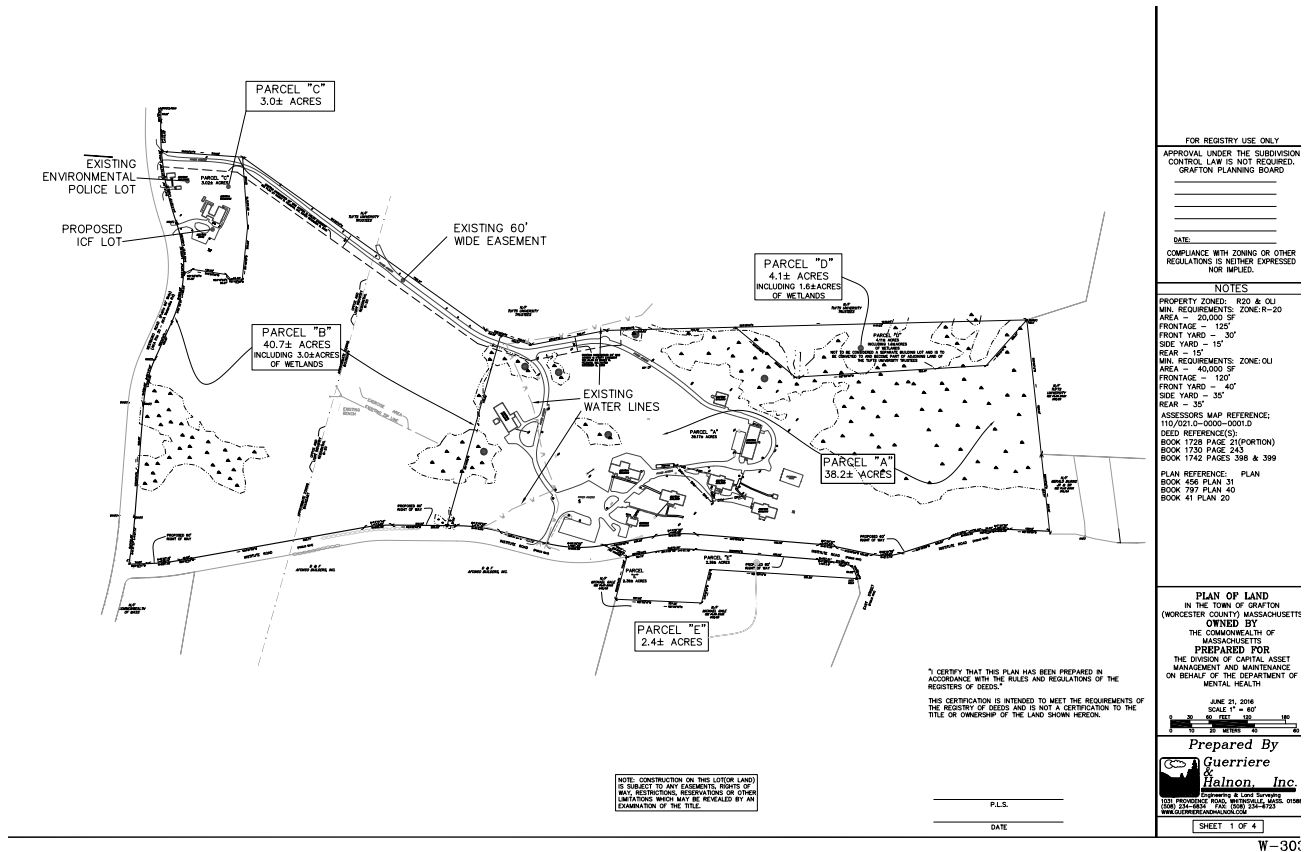
**Mass. DYS/DOL Campus/42 Institute Road (110/021.0-0000-0001.D)**

**Existing Conditions:** This 81-acre state-owned property is located on the south side of Westboro Road and east side of Institute Road. This campus is part of the former Grafton State Hospital. The 11 primary

building on campus were constructed in 1930 and make up over 41,000 S.F. of floor space. One of the buildings is occupied by DEM's Environmental Police at the corner of Westboro Road and Institute Road. The main campus is located off Institute Road and is under the jurisdiction of Dept. of Youth Services (DYS) and is used to carry out the Dept. of Labor's Key Program. The property is serviced by public water and sewer but not gas at this time.

The property is divided in the 3 different zoning districts. The OLI district covers the north end of the property including the 1,927 feet of street frontage along Westboro Road. The OLI covers Parcel B. The R-20 extends south to Grafton State Hospital Road where it becomes R-40 zoning essentially splitting the main campus on Parcel A between the two residential zoning districts.

A warrant article for the 2017 Annual Spring Town Meeting rezoned Parcel B (to the north) to Office/Light Industrial (OLI) base zoning with Campus Development



**Subdivision Plan for State Property at 42 Institute Road. Parcel "B" was rezoned at 2017 Annual Town Meeting to Office/Light Industrial (OLI), with Campus Development Overlay District (CDO) and Priority Development Overlay District (PDO).**



# Grafton Science Park

Grafton, Massachusetts

New Boston  
Development Partners, LLC

NOTE: This document is a conceptual plan and does not represent a final design. It is intended for informational purposes only and should not be used for any other purpose without the written consent of the developer.

Figure A1: Spagnolo Gilness & Associates, Conceptual Plan September 2005



Scale: 1" = 100'



## Grafton Science Park Concept Plan

opment Overlay District (CDO) and Priority Development Overlay District (PDO) / 43D. This is the parcel MassDevelopment is targeting for high-tech business.

Future Vision: The property has good potential for redevelopment or repurposing if the using agency decides to relocate. MassDevelopment is acquiring the northern half of the property as a possible site for future life science or biotech industry. A subdivision plan was submitted to the Town in 2016 dividing the property into 4 parcels: Parcel A is 38.2 acres and includes the main DYS campus; Parcel D is 4.1 acres of wetland on the eastern property line with Grafton Science Park; Parcel B is the north section of the property that is targeted to future biotech; and Parcel C includes the DYS and DEM buildings at the corner of Westboro Road and Institute Road.

The NGTV Vision Plan illustrates how this property could be repurposed and redeveloped over time to accommodate new biotech and well as conversion of the DYS campus to neighborhood development. The site and buildings at the corner of Westboro Road and Institute Road could be redeveloped as small

mixed use projects including accommodations to support area businesses and the Tufts Veterinary School. These 3 development phases would be connected by existing streets and new multipurpose trails which would extend to other area properties including Grafton Science Park to the east, new neighborhoods and conservation lands to the west, and the MBTA Station and Centech Park to the north.

## GRAFTON SCIENCE PARK

**Existing Conditions:** The 84-acre Grafton Science Park is located on the western portion of the Tufts Veterinary School campus. It is accessed from Westboro Road (Rt.30) via Discovery Drive to the north, and is connected to the main campus to the east and Institute Road to the west by Cornfield Road. The immediate vicinity contains well-buffered residential uses to the south, land owned by the State to the west, and Centech Park, Job Corps, and the MBTA commuter station to the north. The Science Park has full public utilities including water and sewer mains, electrical, telecommunications, and natural gas service.

The State approved the Environmental Impact Report (EIR) for the planned science park in 1999. In 2007 and 2014, the Grafton Planning Board approved the amended Campus Master Plan for the expansion of facilities at the veterinary school and the development of the science park. In 2007, Grafton also approved a Chapter 43D designation for the park, which expedites the local permitting. In 2015, Grafton approved an increased height limit in the CDO to 95 feet specifically to encourage biopharmaceutical manufacturers to locate in the park. Other town permitting includes recently updated NIH recombinant DNA guidelines, and removal of the Water Protection Overlay District that had limited the allowed uses in certain developable science park areas.



**MBTA Station Pedestrian Bridge**

The Grafton Science Park is in the Office/Light Industry (OLI) zoning district, with the Campus Development Overlay District (CDO) providing additional use and development opportunities. Design Standards have also been adopted for the Science Park which address buildings, site layout, signage, lighting and planting.

The New England Regional Biosafety Laboratory was the first facility constructed in Phase I of the Grafton Science Park. This 41,000 S.F. BSL-3 and ABSL-3 laboratory is owned and operated by Tufts. In addition to this facility, the Science Park tenants include a transplantation biology research center and a recently constructed 5-acre solar photovoltaic array.

**Future Vision:** The Science Park is permitted for up to 702,000 GSF of building area devoted to research and development, manufacturing, and other activities by biotechnology, medical, and pharmaceutical companies as well as those in the physical, biological, behavioral and environmental sciences, including alternative and renewable energy. The park may also contain ancillary facilities for office, food, administrative, hotel and conference use. The approved master plan proposes development in two phases, as market conditions warrant. Phase I would contain up to 348,000 gross

square feet (GSF), with 307,000 GSF remaining; Phase II would contain up to 354,000 GSF. JM Holdings Corporation, a subsidiary of Tufts University, is actively seeking additional tenants for Grafton Science Park. Customized parcels are available for long-term (65-year) ground lease. The **NGTV Vision Plan** is consistent with the overall concept plan for the Grafton Science Park along Discovery Drive. However, additional infill development is envisioned along the Westboro Road including small scale mixed commercial and residential development and possibly a small hotel. Additional, multipurpose trails are planned along



**Centech Park (Grafton)**

Westboro Road and possibly Cornfield Road which would connect the Science Park to future developments of Grafton State Hospital Road and Institute Road.

### GRAFTON MBTA COMMUTER STATION (1 PINE ST)

**Existing Conditions:** The North Grafton MBTA commuter rail station is located just north of Westboro Road on Pine Street. The station opened in 2000 and is in Zone 8 on the Framingham/Worcester Line which runs from Worcester’s Union Station to Boston’s South Station, 36 miles to the east. According to the MBTA’s most recent Ridership and Service Statistics Report, inbound weekday boardings at the North Grafton Station was 724.

Access to the station is provided from Pine Street and there is a “kiss and ride” drop off area adjacent to the platform. A pedestrian bridge connects both side of the platform and could possibly connect to a multi-purpose path along the Westboro Road corridor in the future. There are a total of 373 parking spaces (including 7 accessible spaces) with a daily rate of \$4.00 and an average weekday availability of 51%. There are also 8 bicycle parking spaces. Regional bus service is accessible at the MBTA station on the Worcester Regional Transit Authority (WRTA) Route B Shuttle.

The station’s proximity to the Tufts Veterinary School Campus and convenient access to Route 20 and Route 30 provides an excellent opportunity for residents and students that live in the Metrowest Region but work or go to school in Boston, Worcester or at Tufts. It also provides an opportunity for reverse commutes from Worcester and South Station which is adjacent to Boston’s Innovation District where a growing number of technology businesses and employees are living and working.

**Future Vision:** The NGTV Vision Plan illustrates the reconfiguration of the MBTA property as a transit oriented development (TOD) with mixed use development, structured parking, and open space amenities on site. The TOD concept could also extend into Centech Park on Lots 7 and 8 including a centralized stormwater treatment systems that would provide better opportunity for development on each lot. This

new development would be connected to surrounding areas through sidewalks and multipurpose trails.

### CENTECH PARK

This 121-acre technology park is located in both Grafton and Shrewsbury (North Centech Park) and was established in 1994 when the Worcester Business Development Corporation (WBDC) acquired the land from the State. Over the past 23 years the WBDC, in cooperation with the towns of Grafton and Shrewsbury, as well as the Tufts/Cummings Veterinary School, completed all necessary infrastructure (public water, sewer, gas, electric, and fiber optics) and permitting work, allowing for 675,000 S.F. of development.

Current zoning in Centech Park is Office/Light Industrial (OLI) with a Campus Development Overlay (CDO). The intended uses in these districts are research, development, and manufacturing in fields such as biotechnology, medical, pharmaceutical, physical, environmental, and other sciences, light manufacturing, and educational uses.

Centech Park is located within an **Economic Target Area**. Under this designation, a job-creating project on site can obtain negotiated municipal property tax rates and a 5% Investment Tax Credit against state income taxes with unlimited carry-forward provisions. Lots in the park have also been designated as **Priority Development Sites** (PDS) under the State’s Expedited



*North CenTech Park (Shrewsbury)*



*A portion of North Centech Park (Shrewsbury)*

Permitting Program (MGL Chapter 43D), guaranteeing permitting decisions within 180 days.

The Worcester Business Development Corporation (WBDC) lots in Centech Park at 12 Centennial Drive and 5 Millennial Drive are also included in the Priority Development Overlay District (PDO) with the possibility of obtaining expedited permitting under the State's Chapter 43D program.

Centech Park currently includes a range of businesses: State Street Bank, IDEXX, Primary Colors, Verrillon, TriTech Software Systems, and Autism Behavioral Services totaling 145,484 SF of development. The park is serviced by public water, sewer, gas, and electric. At full buildout, Centech Park can accommodate up to 675,000 square feet of development. WBDC currently owns parcels 4, 5 and 12 within the park and has been actively marketing them for the past few years.

The following is an evaluation of existing properties in Centech Park and future opportunities:

#### **IDEXX/3 Centennial Drive (Lot 8)**

This 4.75-acre site is located at the southwest corner of Centennial Drive and Pine Street. The property is owned and operated by IDEXX Laboratories which includes a 30,366 S.F. office building and laboratories for veterinary testing products and services which was built in 2002. The property has 469 feet of frontage on Centennial Drive and 623 feet on Pine Street. Parking is located and accessed from both streets. The **NGTV Vision Plan** illustrates the possibility of infill development on site given the size of the property and amount of frontage on both streets. This would require to creation of a communal stormwater system and/or shared parking with adjacent properties.

#### **SSB Parcel/4 Centennial Drive (Lot 1)**

This 5.4-acre parcel is located at the northwest corner of Centennial Drive and Pine Street. The vacant property is owned by State Street Bank (SSB) and has 629 feet of frontage on Centennial Drive and 550 feet on Pine Street which extends north into Shrewsbury. The parcel is adjacent to SSB's records management facility, and the Bank has been reluctant to sell or develop the property do to its proximity to the secured building. This is a prime development parcel and an excellent opportunity to attract bio-technical corporations or mixed uses. The **NGTV Vision Plan** illustrates a new office or mixed use development with high visibility on both streets. An extensive natural buffer between the new development and SSB records management building would be necessary.

#### **SSB Parcel/8 Centennial Drive (Lot 2)**

This parcel is located on the north side of Centennial Drive and is owned by State Street Bank and occupied by their record management facility which is in the Shrewsbury portion of the property. The property has 773 feet of frontage on Centennial Drive. The **NGTV Vision Plan** anticipates that the eastern portion of the frontage could be integrated into Lot 1 to support new development or be used as a common parking, stormwater storage/treatment, and/or passive recreational use to support the park in general.

#### **WBDC Parcel/12 Centennial Drive (Lot 3)**

This 7.93-acre site is owned by WBDC and located off the cul-de-sac at the end of Centennial Drive. The parcel is being activity marketed by WBDC for



development, including build-to-suit opportunities. In 2004, WBDC prepared a conceptual site plan with 80,000 square feet of flex space and 190 parking spaces carried out in 2 phases. The **NGTV Vision Plan** anticipates that, in addition to new development on site, this parcel could be used to access to the land-lock industrial parcels to the west owned by the Rushwan Brothers. This would allow for those parcels to tie into Centennial Drive and all of the other public utilities available in Centech Park.

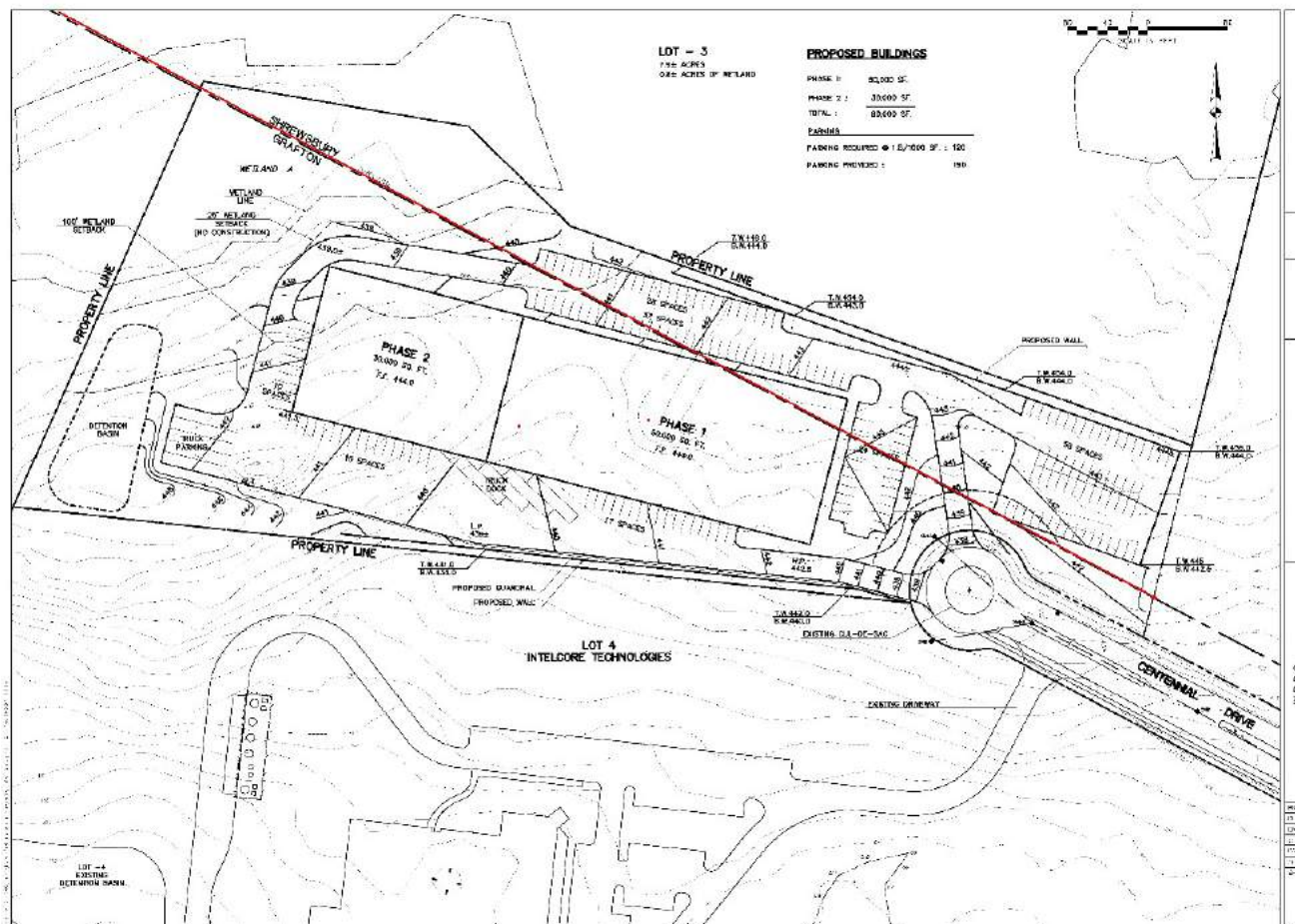
### Verrillon/15 Centennial Drive (Lot 4)

This 14.48-acre site is located off the south side of the cul-de-sac at the end of Centennial Drive. The property is owned and operated by Verrillon which manufactures telecommunications equipment in the 74,797 S.F. facility on site which was built in 2002. The property has 264 feet of frontage on Centennial

Drive. The **NGTV Vision Plan** illustrates the possibility of expansion and infill development on site given the size of the parcel and amount unused land. Another scenario is to provide an easement along the northern property boundary providing access to the Rushwan Brothers industrial as an alternative to access across Lot 3.

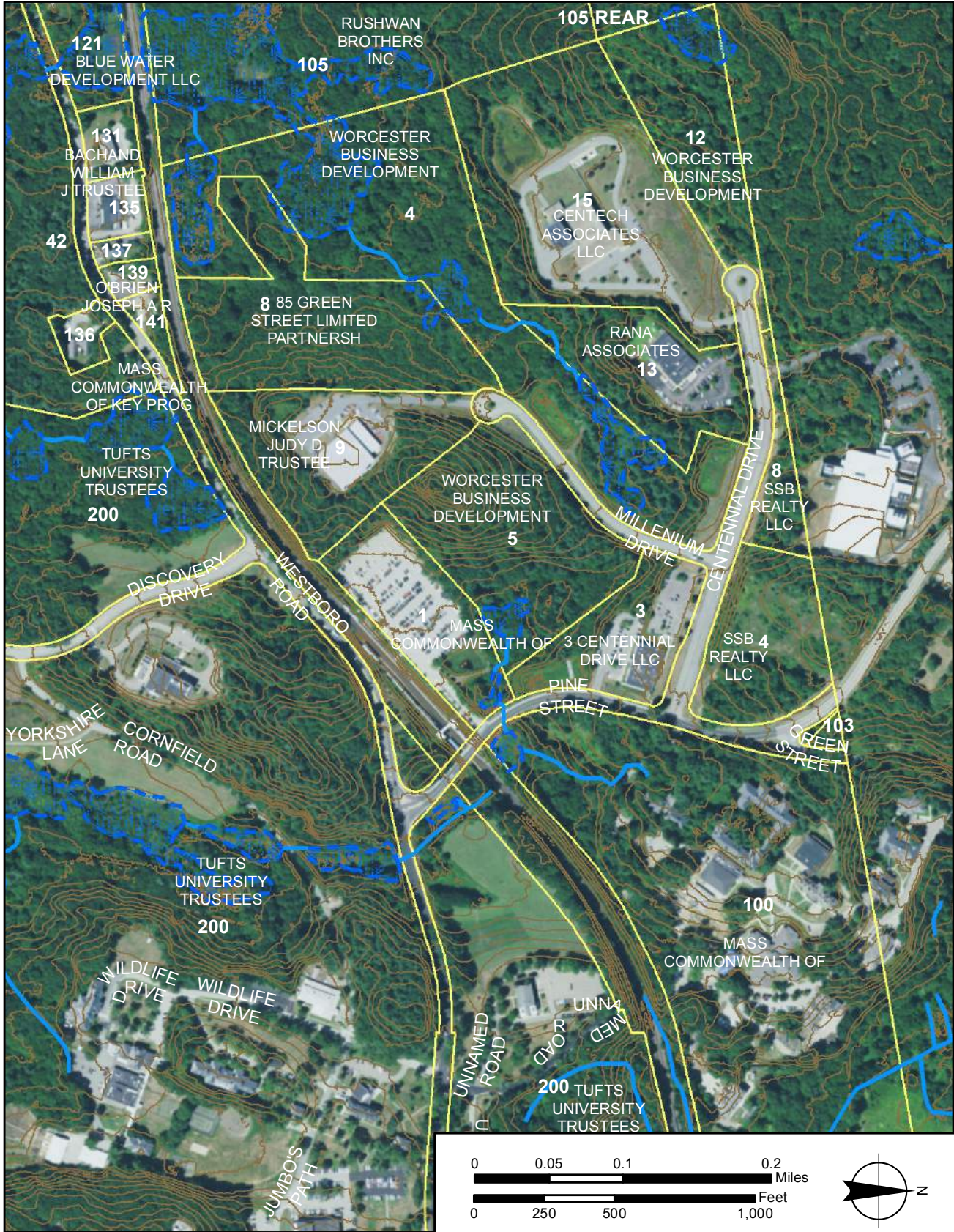
### ABS/13 Centennial Drive (Lot 5)

This 6-acre site is located off the south side of Centennial Drive. The property has been occupied by Autism Behavioral Services (ABS) including the 15,396 S.F.



**Centech Lot 3 Concept Plan**

**MBTA COMMUTER STATION, CENTECH PARK, AND JOB CORPS CAMPUS**



office on site which was built in 2003. However, the Planning Board recently approved a change of occupancy for a professional office and day care facility. The property has 368 feet of frontage on Centennial Drive. The **NGTV Vision Plan** illustrates the possibility of expansion of the existing building or infill development on site given the size of the parcel and amount unused land. New development could be also be oriented toward Millennium in coordination with future development on Lot 7.

### Town Parcel/105 Rear Westboro Road (110/004.0-0000-0001.0)

This 37,026 S.F. parcel is located on the Shrewsbury town line and abuts WBDC Lot 3 to the east off the end of Centennial Drive. The town received approval to sell this property, at the 2017 Spring Annual Town Meeting. The vacant parcel is not technically in Centech Park but could be a lynchpin to future development of the industrial properties owned by the Rushwan Brothers. The **NGTV Vision Plan** anticipates that the parcel could be utilized to support parking and stormwater facilities to WBDC Lot 3 in exchange for an easement that would extend Centennial Drive

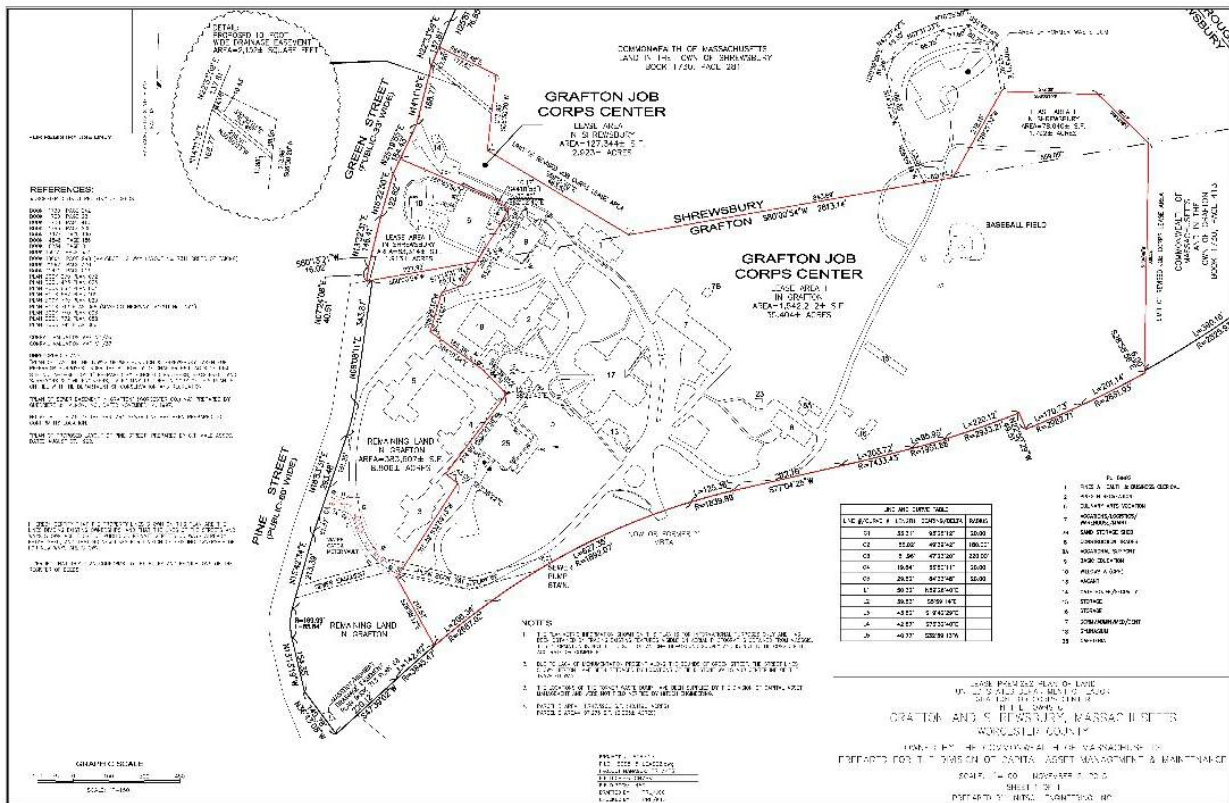
and public utilities to the industrial properties to the west. The parcel could also be utilized for passive recreational uses that would benefit existing and future tenants of Centech Park.

### WBDC Parcel/4 Millennium Drive (Wetland Lot)

This 19.3-acre parcel is located at the southwest corner of Centennial Drive and Millennium Drive. The lot is long and angular with 1,370 feet of frontage on Millennium Drive and 427 feet of frontage on Centennial Drive. There appears to be wetlands and intermittent streams through a large portion of the lot. The site is owned by WBDC and available for development, including build-to-suit opportunities. The **NGTV Vision Plan** anticipates development located at the corner of Millennium Drive and Centennial Drive as well as on the end of the cul-de-sac where there appears to be less environmental constraints.

### WBDC Parcel/5 Millennium Drive (Lot 7)

This 9.5-acre parcel is located at the south side of Millennium Drive and includes 790 feet of street frontage. The property abuts the MBTA Station and park-



Job Corps Campus and Surplus Property Subdivision

ing lot to the south and Primary Colors Property (9 Millennium Drive) to the west. The and a prominent hill with steep slopes which substantially limits future development potential. The site is owned by WBDC and available for development, including build-to-suit opportunities. The **NGTV Vision Plan** anticipates a mix of office and residential development located at the northern edge of the parcel wrapping around the backside of the knoll and connecting to the MBTA station.

### **Vacant Parcel/8 Millennium Drive (Lot 6)**

This 10.6-acre parcel is located at the end of the cul-de-sac on Millennium Drive. The property has 100 feet of street frontage and appears to have no significant environmental constraints. It is owned by 85 Green Street LLC and available for development. A potential developer has approached Grafton officials about opening a medical marijuana cultivation facility and dispensary on this site. The facility would have 30 employees, and use about 30,000 square feet of building space. The **NGTV Vision Plan** anticipates corporate office development on site that would benefit by proximity to the MBTA Station. There may also be potential for transit oriented mixed use and structure parking associated with the commuter rail.

### **Primary Colors/9 Millennium Drive (Lot 6A)**

This 7.47-acre site is located off the cul-de-sac at the end of Millennial Drive. The property is owned and operated by Primary Colors which is a plastics fabricator operating in the 24,995 S.F. facility on site which was built in 2003. The **NGTV Vision Plan** illustrates the possibility of expanding the existing building on site given the size of the parcel and amount unused land.

## **US JOB CORPS CAMPUS**

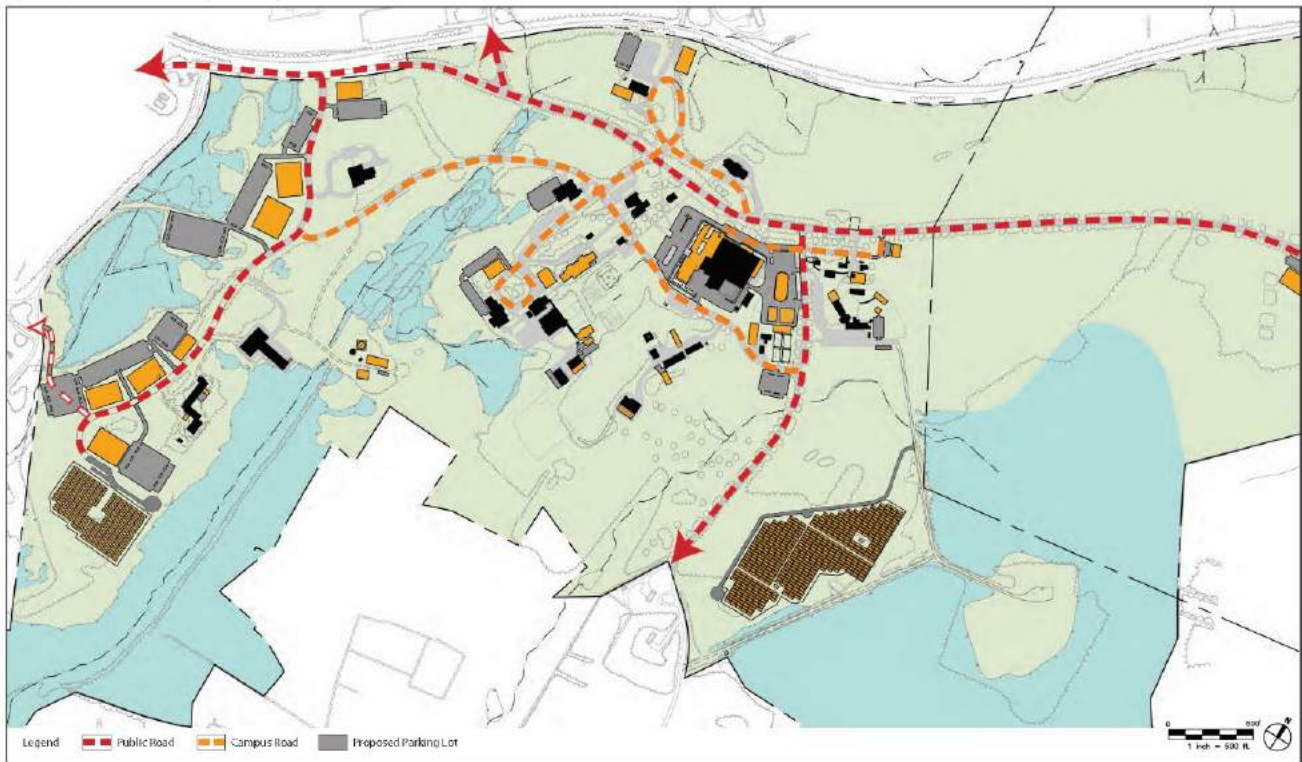
**Existing Conditions:** This state-owned 49-acre property off Pine Street is part of the former Grafton State Hospital which extends north into Shrewsbury along Green Street. The property is underdeveloped and a large portion is leased to DOL and is used by Job Corps, including 35.4 acres in Grafton and 1.9 acres in Shrewsbury. There are 19 primary buildings on campus dating back as far as 1906 and totaling 340,328 S.F. of finished floor area.

Several of the former hospital buildings remain and are in deteriorated condition due to significant deferred maintenance and hazardous environmental materials. A Fatal Flaw Analysis was conducted in 2008 by WBDC in collaboration with MassDevelopment. It was determined that significant challenges exist for adaptive reuse of several of the buildings. However, potential for redevelopment existed given the proximity to the MBTA commuter train station and Tufts Veterinary School.

A portion of the property in Grafton is not currently used by Job Corps. This includes 8.8 acres in Grafton on the southeast end of the property with over 1,800 linear feet of frontage on Pine Street. This property is currently zoned R-40 and serviced by public water and sewer. This portion of the property, however, also includes 3 of the most deteriorated buildings on campus including buildings 3, 4, and 5 which could be a significant deterrent developer interest.

**Future Vision:** The NGTV Vision Plan illustrates mixed use development on the available parcel with commercial uses on the ground level and residential units above. This development would infill the frontage along Pine Street and include an enhanced streetscape with new sidewalks and areas for outdoor dining and other civic gatherings. Residential development would extend along the existing campus ring road on the southern boundary utilizing the lawn area in front of the cafeteria. Development would be extended to the intersection where Library Circle Road previously bridged the railroad tracks and connected with the former Grafton State Hospital campus. Under the Vision Plan, this connection would be reestablished to tie the Tufts Veterinary School library and administration building to the new mixed use development and Pine Street.

Visual screening between the new development and Job Corps campus would be accomplished by landscape buffers and fencing. The new entrance to the Job Corp campus would be relocated on Pine Street to create a 4-way intersection at Centennial Drive with a secondary access from Green Street in Shrewsbury and Westboro Road via the reconnected Library Circle Road.



*Tufts University Grafton Campus Master Plan - Development Plan (2014)*

## TUFTS UNIVERSITY CUMMINGS SCHOOL OF VETERINARY MEDICINE CAMPUS

**Existing Conditions:** This 594-acre campus occupies most of the former Grafton State Hospital grounds and buildings. The campus straddles the boundaries of the towns of Grafton and Westborough with about three-quarters of the campus (433 acres, including the 84-acre Grafton Science Park) and all of the campus buildings in Grafton. One quarter of the campus (149 acres) is in Westborough which is mostly farmlands and woodlands. Included on campus are the veterinary school facilities, Grafton Science Park, active agricultural lands, and related facilities. The Town's Axtell Forest conservation land abuts the campus to the south with access from Willard Street.

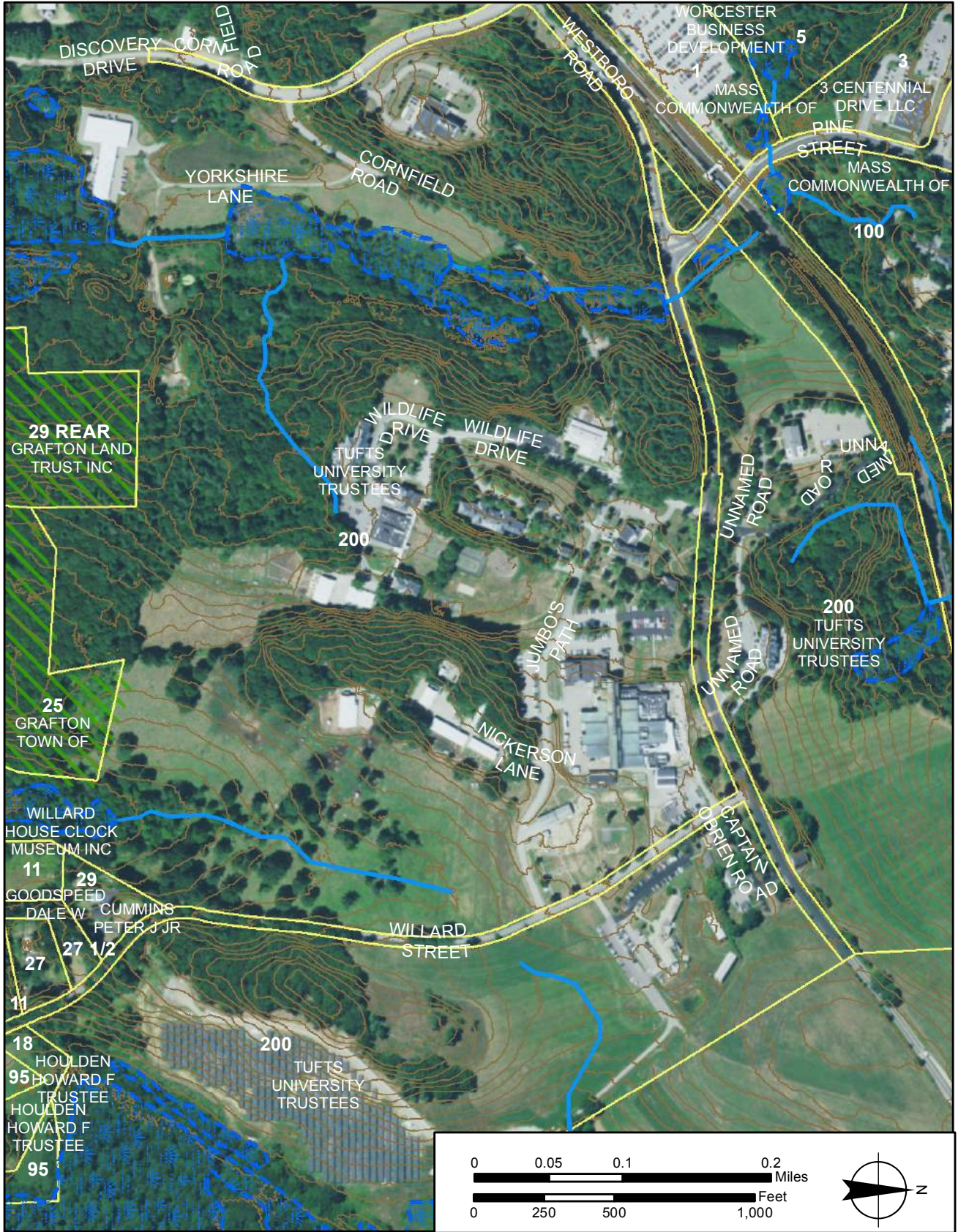
The Cummings School of Veterinary Medicine (TCSVM) occupies approximately 500,000 gross square feet of building area. Since Tufts University created the veterinary school in the late 1970s, it has renovated and converted

a number of hospital buildings to accommodate the needs of the school and its faculty. The school has also accommodated businesses by renovating buildings for a veterinary diagnostic lab and a biotechnology business incubator. The Veterinary School has also built new buildings, including state-of-the-art teaching hospitals for large and small animals, a medical library, and xenotransplantation facilities. Public



*The intersection of Pine Street and Westboro road is a natural crossroads, but grade changes and wetlands limit development options to the northwest corner.*

**TUFTS CAMPUS, CENTRAL CORE**



water and sewer are available on the main campus as well as fiber optics.

The main campus is located in the OLI base zoning district and the Campus Development Overlay District (CDO). Under the CDO a master plan must be prepared and approved by the Town of Grafton and updated periodically. The latest master plan approved by the Town was in 2014.

The Plan describes a program for continued growth of TCSVM and the further development of the Grafton Science Park. An inventory and description of existing campus and facilities, specifies proposed development, and how the proposed development conforms to the requirements of the Grafton Zoning Bylaw is provided. The plan respects the school's status as a Massachusetts historic site and proposed layouts and building designs maintain the site's pastoral context. The proposed development described in this 2014 Master Plan and potential costs, revenues, and benefits to the Town of Grafton is, in most respects, similar in scope and scale to that outlined in the 2006 Master Plan.

**Future Vision:** The TCSVM Master Plan was last updated in 2014. Based on the Plan, the following projects have been approved by the Planning Board in recent years:

- TCSVM Equine Sports Medicine Center - 53 Willard Street
- Solar Farm - East Knoll Site - Off Willard Street
- Solar Farm - Grafton Science Park - Off Discovery Drive
- Building Expansion - Foster Hospital for Small Animals - Off Westboro Road

The NGTV Vision Plan focuses are TCSVM properties on the north side of Westboro Road near the intersection of Pine Street. **Site 1** - the open field between Pine Street, Westboro Road, Library Circle and the railroad corridor is envisioned as part of an eco-village with moderate density residential buildings integrated into the meadow with natural landscaping, community gardens, and active open spaces. This village would provide housing for students, faculty, and

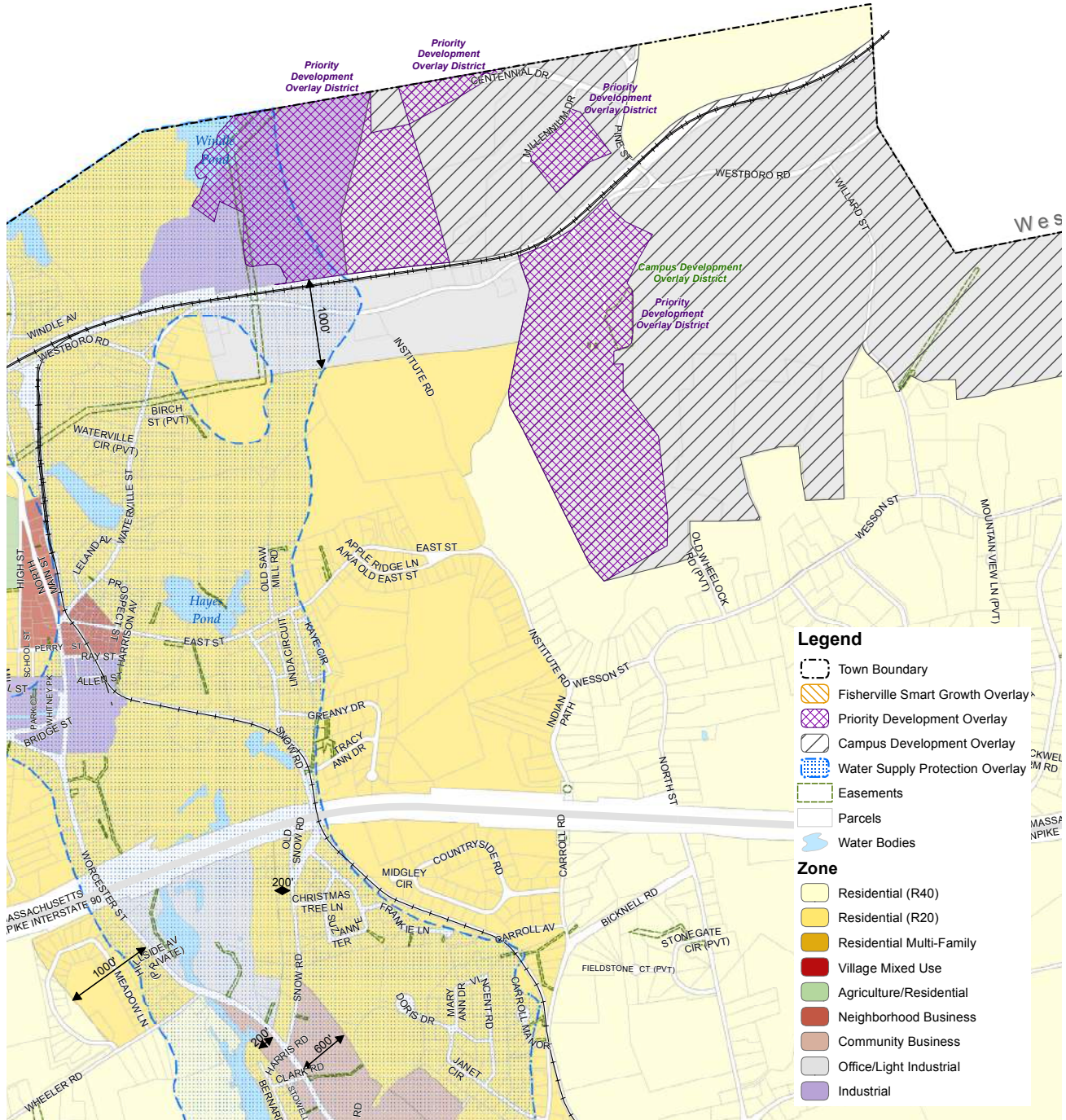
visitors to TCSVM. It would be connected to the adjacent MBTA Station, future development on the Job Corps site, and the main campus through a series of multi-purpose trails.

**Site 2** – This small parcel on the northwest corner of Pine Street and Westboro Road is envisioned as a small convenience store, take-out food, and fueling station. In all, there is about 466 feet of frontage at this intersection. The goal is to provide a “sense of arrival” in the new village center by bringing the building up to the streetline and placing parking and gas pumps behind (a site layout often referred to as “Gas Backwards”). A sidewalk and pedestrian terrace would be located along the in front of the building providing a small sitting area. Streetscape improvement including curbing and street trees would be made along the entire frontage, and a connection to the MBTA pedestrian bridge would be made to the rear.



*The core campus of the Cummings School of Veterinary Medicine*

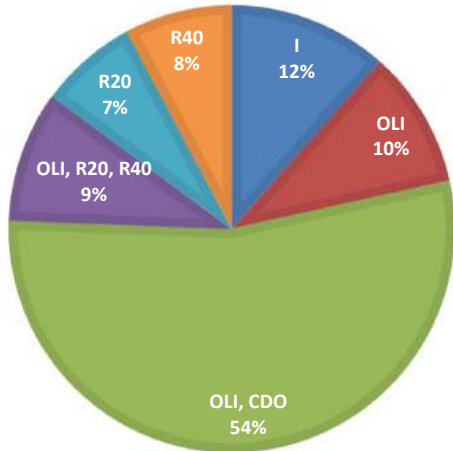
# ZONING IN THE NGTV PROJECT AREA (2016)





## 4.0 LAND USE REGULATIONS

There are 4 base zoning districts and 3 overlay districts that cover the North Grafton Transit Village Project Area. The majority of properties (54%) are in the Office/Light Industrial (OLI) district and overlaid with the Campus Development Overlay District. This includes 462 acres and multiple parcels located in Centech Park, Grafton Science Park, the MBTA Station, and the Tufts School of Veterinary Medicine campus.



NGTV project area zoning

### BASE ZONING DISTRICTS

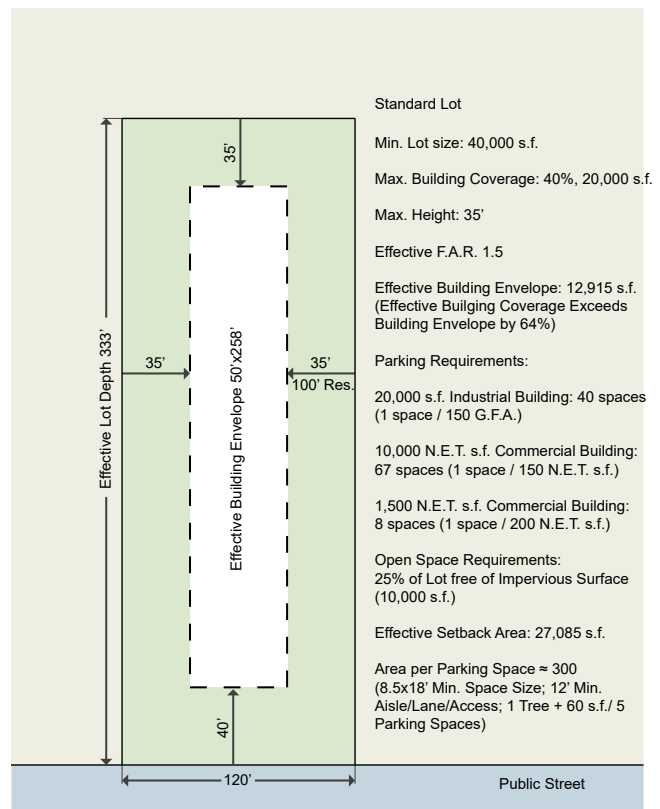
#### Industrial District (I)

The Industrial District covers 2 Rushwan Brothers properties (totaling 99 acres) north of the rail corridor between the Shrewsbury town line to the north and Centech Park to the east. The purpose of the district is to provide sites for industry which create employment opportunities and maximizes the use of Grafton’s access and environmental conditions and labor force, while recognizing the limitations of Grafton to handle traffic, water runoff, sewage, and other environmental and neighborhood impacts. Like all zoning districts in Grafton, the planning objectives of district is mitigated by the overriding goal of protecting the Town’s ground water resources.

Permitted uses in the Industrial District include the following: agricultural and horticultural uses (indoor by Special Permit); hotels and apartments for “security guards” by Special Permit (SP); most public and

semi-public uses; recreational uses by SP except riding stables by right; retail and personal services by SP; restaurants and pubs by SP except brewpub which allowed by right; professional and general offices by SP; auto related services by SP; adult uses and marijuana dispensaries by SP; nano and microbreweries by SP; communications, transportation, and public utility uses by SP, manufacturing and light industrial uses by SP; building materials and auto repair; RV sales and public storage by SP; and contract yards by SP. Essentially most uses require Special Permits and residential uses and mixed uses are not permitted.

Dimensional standards require a 40,000 S.F. minimum lot size and 120 feet of street frontage. In effect, lot depth would be 333 on a standard lot and the building envelope would be quite narrow at 40 feet. This results in a much larger lot actually being needed to meet dimensional standards such as setbacks, building coverage, and frontage.



Design Standards for OLI and Industrial Zoning District

## Office/Light Industrial (OLI) District

The OLI district includes all the properties in Centech Park accessed by Centennial Drive and Millennium Drive off Pine Street. This portion of the OLI District is bound by the railroad corridor to the south, Shrewsbury town line to the north, industrial properties to the west, and Pine Street to the east. The MBTA Station is also included in the OLI district as is the Grafton Science Park and the Tufts Veterinary School campus. Between 82 Westboro Road and the Grafton Science Park, the OLI District extends 1,000 south of the rail corridor covering the Rt. 30 corridor and a portion of Institution Road.

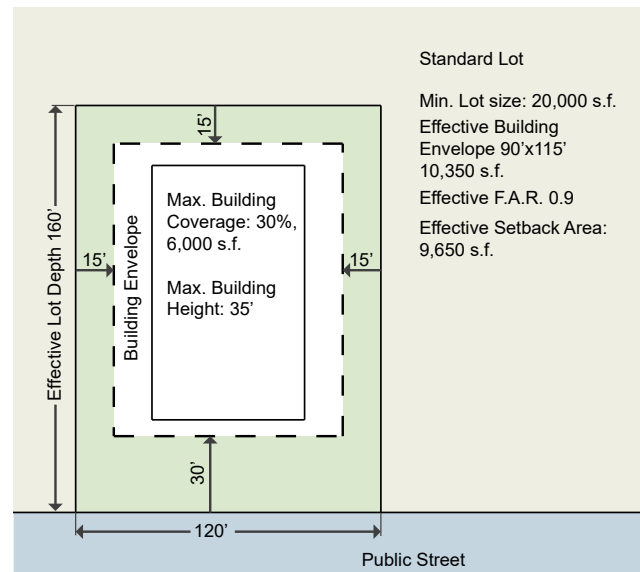
The purpose of the OLI District is to provide sites for office and light industrial development which create employment opportunities and maximize the use of Grafton's access and environmental conditions, while recognizing site and area limitations in terms of drainage, soil suitability, proximity to surface and subsurface water resources and slope and preserving or enhancing visual landscapes.

Permitted uses are very similar to the Industrial district except for a few business uses that are allowed by right while other industrial uses require a Special Permit. OLI does not allow for residential or mixed use even though several properties are in these categories. The dimensional requirements in the OLI district are the same as in the Industrial district. This is a particular issue for the lots on the north side of Westboro Road which are small with limited depth due to the railroad corridor. Between the use and dimensional regulations, these lots have very little opportunity for reinvestment.

## Medium Density Residential (R-20) District

This district is located south of the OLI district (and 1,000 feet south of the RR corridor) with access via Institution Road. The purpose of the R-20 district is to provide sites for medium density residential development with respect to the existing character of the neighboring homes and properties, including compatible, related home-oriented activities and pursuits in a "small village environment".

Except for single family detached homes, duplexes by SP, agricultural uses, and small scale public uses (i.e.



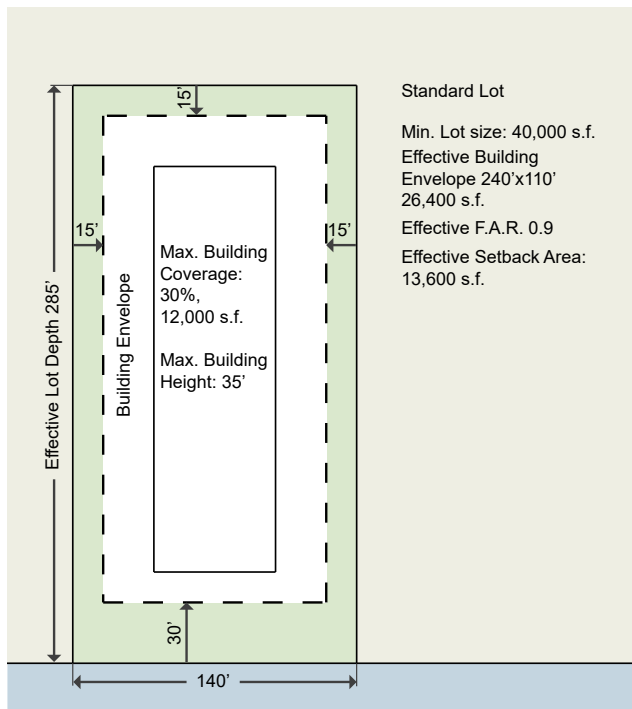
## Design Standards for the R-20 Zoning District

day care) and recreational use by SP, uses are highly restricted in the R-20 district. Dimensional standards include a 20,000 minimum lots size and 125 feet of street frontage. These are reasonable standards to suburban style subdivisions but are generally higher than would be found in traditional village neighborhoods as is envisions for the NGTV Project Area.

## Low Residential (R-40) District

This district is located in the northeast quadrant of the NGTV Project Area along the north side of the railroad corridor and east side of Pine Street. The area includes the former Grafton State Hospital north campus which is owned by the State and used by U.S. Job Corps. The purpose of the R-40 district is to provide sites for low density residential development with respect to the existing character of the neighboring homes and properties, including compatible related home-oriented activities and pursuits in a semi-rural environment.

The use and dimensional standards for similar between R-20 and R-40 except that duplexes are not allowed in R-40, lot size is 40,000 S.F. and frontage is 140 feet. As with R-20, these requirements result in suburban style subdivisions and are not consistent with traditional village development patterns.



*Design Standards for the R-40 Zoning District*

## OVERLAY ZONING DISTRICTS

### Campus Development Overlay (CDO) District

The Campus Development Overlay District encompasses the Tufts Veterinary School campus, Grafton Science Park, and Centech Park. The purposes of the CDO are to permit the establishment of well-designed rural campus park developments in Industrial and Office/Light Industrial Zoning Districts on parcels 50 acres or larger, through the use of master plans which provide for compatibility with nearby residential and commercial developments; encourage economic growth in the Town of Grafton through high quality mixed-use development by integrating educational and compatible commercial activities; establish zoning regulations to encourage and set guidelines for such development while minimizing, to the extent possible, the adverse impact of development on the natural features of the CDO areas, including the overriding goal of protecting the Town's general water resources; and encourage mixed-use development by providing sites at and in the vicinity of an existing school of veterinary medicine for research, development and manufacturing other sciences, and for offices, administrative and support facilities and other commercial enterprises.

The CDO bylaw permits research, development, and manufacturing in the fields of: biotechnology, medical, pharmaceutical, physical, biological, and behavioral sciences and technology; environmental science, toxicology, wildlife medicine, genetic engineering, comparative medicine, bioengineering, cell biology, human and animal nutrition, and veterinary medicine. In addition, the CDO bylaw permits research and development in the fields of alternative energy and renewable energy, including production of equipment. Offices, administrative and support facilities related to these uses are also permitted, along with the commercial facilities (like food, postal and banking services, conference, convention and housing accommodations) required to support these uses.

The dimensional standards are similar to the OLI except that buildings can be 60 feet in height and the Planning Board grant a deviation up to 95 feet. There are also certain buffer and landscaping requirements between CDO districts, and specific parking standards are provided which are generally less restrictive than those in Section 4.2.

### Priority Development Overlay (PDSOD) District

This overlay district encompasses the Grafton Science Park, a large portion of the Industrial District, and selected sites in Centech Park including 5 Centennial Drive (WBDC parcel), 12 Millennium Drive (WBCD parcel), and 105 Westboro Road (Rushwan Brothers). The purpose of the PDSOD is to expedite permitting for Priority Development Sites pursuant to M.G.L. C43D, and to provide appropriate systems for any proposed changes to a plan or facilities after the issuance of a special permit and/or site plan review and approval by the Planning Board or after the issuance of any other permit granted by an appropriate municipal agency. The Rushwan properties would be local Priority Development Sites, while new development in Grafton Science Park and Centech Park would be State Priority Development Sites. Other objectives identified in Section 9 are to:

- Increase clean, diverse, and geographically focused commercial and industrial activities;
- Strengthen Grafton's tax base;
- Target appropriate development sites for commercial and industrial activities;

cial or industrial development planning;

- Promote and increase the visibility of Grafton as a community open to assisting appropriate commercial and industrial developments;
- Provide an efficient process for all municipal permitting;
- Guaranty municipal permitting decisions on Priority Development Sites within 180 days of application; and
- Encourage businesses that depend upon, protect, and add to the natural resources of the Town.

A Priority Development Site (PDS) is defined as a privately or publicly owned property that is: (1) located in a commercial or industrial underlying zoning district; (2) eligible under applicable zoning provisions, including special permits or other discretionary permits, for the development or redevelopment of a building of at least 50,000 square feet of gross floor area; and (3) designated as a PDS by the Interagency Permitting Board. Several parcels or projects may be included within a single PDS. Wherever possible, PDS should be located adjacent to areas of existing development or in underutilized buildings or facilities, or close to appropriate transit services.

### **Water Supply Protection Overlay (WSPOD) District**

This overlay district covers apportion of the R-20, OLI and Industrial District on the west side of the NGTV Project Area. The purpose of the WSPOD is to safeguard and protect Grafton’s sources of water supply. This bylaw is intended to preserve and maintain the filtration and purification function of the land, the ground water table, the purity of ground water supplies, and to protect the public health, safety and welfare. Permitted uses generally reflect the underlying base district except that public and commercial uses are typically only allowed by SP and where sewer is available, the further restrictions are placed on industrial uses.

### **Floodplain Overlay District (FOD)**

There are floodplain and wetland areas in the NGTV Project Area which should be confirmed on the FEMA

maps. The purpose of the Flood Plain District is to protect the public health, safety and general welfare, to protect human life and property from the hazards of periodic flooding, to preserve the natural flood control characteristics, and the flood storage capacity of the flood plain, and to preserve and maintain the ground water table and water recharge areas within the flood plain.

## **OTHER DEVELOPMENT REGULATIONS**

### **Parking Standards**

The parking standards in Section 4.2 are generally high with nonresidential buildings greater than 2,000 S.F. required to have 1 space/150 GFA, multi-family required to have 2.25 spaces/DU, and industrial uses required to have 1 space/500 GFA (1.5 spaces/1000 GFA for manufacturing, within the Campus Development Overlay district). CDO has separate provisions for population-based parking counts. There are no provisions for shared parking or mixed use such as in Section 10 – Fisherville Smart Growth Overlay District (FSGOD) or the Village Mixed Use Overlay District (VMUOD) which covers South Grafton Village Center. There is a provision for reserve parking but this typically require excess lot area. If the NGTV is going to fulfill its potential, parking standards such as in FSGOD and VMUOD will have to be adopted.

## 5.0 THE PUBLIC'S VIEW

### Project “Kick-Off” Meeting

The project team conducted a kick off meeting in Grafton on September 9, 2016 with the Planning Department staff and other key project participants. The purpose of the meeting was to review and refine the project scope, discuss the public participation process, and draw up a tentative schedule for community workshops. The project team visited the project area with Town staff to get an on-site perspective of the area and begin the discussion of key issues and opportunities.

### Internal Stakeholders Workshop

This workshop was held on October 13, 2016 at the Brigham Hill Community Barn and included public officials charged with overseeing Town finances, planning, maintenance, public safety and other municipal services who can often provide a unique perspective on the future of North Grafton. The objectives of the workshop were as follows:

- Review and verify mapping and analysis describing existing site features and suitability for future growth;
- Identify opportunities and constraints from the perspective of each stakeholder group or town department; and
- Identify real and perceived barriers to implementing a transit village master plan.

The workshop began with welcome and introductions followed by a brief presentation on the existing conditions in the North Grafton Transit Village Project Area. An open discussion followed where participants shared what they thought were issues, opportunities, and potential barriers to future growth and development in the project area.

### Weaknesses

Participants identified a lack of local connectivity as a key weaknesses in the study area, including a dearth of sidewalks, difficulty of accessing some of the larger parcels, and the barrier to north-south movement

created by the railroad tracks. Control of many parcels by state or federal agencies was also seen as a potential weakness, limiting the availability of land and raising the specter of government bureaucracy.

### Strengths

The potential for good regional connectivity was seen as a strength, including good access to Rt. 20, and a well-used train station where 400 parking spaces are regularly filled. Rail access was also seen as a potential attractor for certain industrial and distribution facilities. Tufts University Cummings School of Veterinary Medicine was cited as a key strength in the area, with the potential for attracting allied businesses and anchoring a potential technology corridor extending north into Shrewsbury. The beautiful campus setting and surrounding farmland are also seen as an important strength. The potential availability of water and sewer to many parcels, as well as current upgrades to electrical services, were noted as key factors supporting redevelopment. State control of many parcels was raised again, this time to highlight the potential benefit of government support of the town's goals for the area.

### Opportunities

Participants pointed out that efforts to attract new businesses need to go hand in hand with improvements to infrastructure and public amenities, including providing continuous sidewalks on Rt. 30, building trails to connect surrounding neighborhoods to the train station, protecting farmland and wildlife habitat, and providing new recreational facilities. There is plenty of sewer capacity, and a research use demanding 100,000 gallons per day would benefit the town by offsetting rates for other users. Water supplies are adequate, but since the water district is semi-public need to find a way to pay for improvements without raising rates for existing residents. It was noted that development needs to support people who are already here.

The site is seen as a logical location for a village-style mixed-use development, with a focus on the intersection of Pine Street and Rt. 30:

- Rt. 30 is not as fast as Rt. 20 – more conducive to mixed use.
- This is the one remaining commercial-industrial-retail-residential mixed-use village opportunity.
- Housing projects could be built with some commercial in front.
- Need a critical map of housing and other activity to make retail work.
- The MBTA is open to redeveloping the area around the station, as long as parking is replaced one-for-one.
- Need to look at reusing remaining old buildings.
- Perception problems at Job Corps have mostly settled down, but do people want to live next door?
- Need to decide whether the area could best be redeveloped as a village or a campus?
- Look at other Transit-oriented development projects: Ashland, or even perhaps downtown Worcester, on a smaller scale.
- There is a need for affordable housing and senior housing – townwide.
- Most young professionals live in apartments in converted single-family homes, and could benefit from new apartments near the train station.

Tufts has been trying to encourage business growth for 20 years, and the Science Park and other initiatives are designed to attract allied businesses. Their on-campus incubator is fully leased and several companies are leveraging Tuft’s animal testing resources. One question is how best to connect Tufts’ masterplan strategies to the Town’s plans for the area, including access to open space. Challenges for the Tufts campus include issues with water quality and water main breaks. There is little on-campus housing, and many students find apartments elsewhere in Grafton. Some housing could be considered as part of the village project, especially for international students. There is a need for more social activities for students.

It was noted that a potential village on the site needs to be supported with programming to bring people to the area and give it a sense of place. Tufts already hosts events such as the dog wash, horse shows and cross-country meets. Look at Worcester’s Placemaking Initiatives and think about what will draw people to the area – food, arts, special events, pop-up spaces.

#### Barriers

There are several barriers that hamper redevelopment of the area. The MBTA schedule is not attractive to young professionals commuting from the train station, and MBTA needs to improve its communications and outreach. Another barrier is the need to clarify and streamline the permitting process and, to the extent possible, pre-permit some lots to eliminate potential delays for businesses that want to locate in the area. Shrewsbury’s permitting process was held up as a model. Participants also raised the need to keep improving the zoning bylaws that regulate development in the area.

#### Public Visioning Workshop

This workshop was held on November 10, 2016 in the Jean Mayer Administration Building - Kohnstamm Conference Room on the Tufts School of Veterinary Medicine campus. Residents, business owners and other stakeholders were invited to the workshop to review an inventory and analysis of the project area, talk about problems that need to be addressed, and opportunities for the future. This was primarily a “listening workshop,” designed to clarify and verify the hopes, concerns and dreams of town residents and business owners. The objectives of the workshop were as follows:

- Review and verify mapping and analysis describing existing site features and suitability for future growth;
- Identify issues and problems in the project area that need to be addressed;
- Identify opportunities for the future;
- Measure public support for general conservation

and redevelopment strategies; and

- Work to describe a shared vision for a North Grafton Transit Village.

A series of maps and images were on display for public viewing. Welcome and introductions was followed by a presentation of mapping and analysis. Participants then broke out into small groups to work on problems and opportunities. After each group reported out their thoughts, a facilitated discussion focused on overall goals, guiding principles and vision for the North Grafton Transit Village. Participants were also asked to do “dot voting” on a Visual Preference Survey which included images of buildings, site amenities, and streetscape treatments for participants to rank based on their desirability for the project area.

### Issues of Concern

Participants identified uncertainty in the real estate market and the high cost of construction as key issues for redeveloping the site:

**Residential Real Estate Market:** Concerns were raised about the viability of redeveloping the site, especially in the context of a real estate market that seems to focus on development of separated housing types, rather than mixed use – what will bring people out here, and how can we make a mixed-use village at the train station more attractive than more conventional development types? Subdivision of the Afonso property will bring 46 units on line; what will the impact be? What would happen if an Avalon Bay style development comes in on one of the parcels on one of the outlying parcels – how could it be connected to the village? Will the town be forced to settle for whatever they can get?

**Development costs and potential income will shape any projects.** The Afonso development could provide housing for faculty and staff at the Tufts campus, but at a likely sales price exceeding \$600,000 will not be affordable for graduate students. Closer to the station, the land and buildings to be split off from the Jobs Corps provide an opportunity for transit-oriented development, but will the market support redevelopment of the former state hospital buildings? It was suggested that this is unlikely without major tax breaks and other subsidies. A local devel-

oper suggested that new apartments would probably work on the site – elsewhere in the region he is doing 72 units on 6 acres – 1 and 2 bedroom units in 12 unit structures. Another participant suggested that three stories of apartments above ground floor retail would be a viable approach.

**Retail Market:** Participants raised similar questions about the viability of retail uses on the site. Even if additional housing is constructed around the train station, the retail demand will focus on the morning and evening commute – is that enough to support much of a retail base? Traffic on Rt. 30 (7-8,000 vehicle trips per day, compared to 20,000 in the center of Grafton) is currently not enough to support a Dunkin Donuts. Eventually the site could probably support a coffee shop like Starbucks, or a Five Guys restaurant. A small market or convenience store might work.

### Opportunities for the Future

**Getting Ahead of the Curve:** this is an important opportunity for the town to get ahead of the curve and not let existing zoning and conventional development pressures drive redevelopment on the site. There are ongoing inquiries regarding available space at the science park; buildout there could bring 300-400 new employees. In general, people are coming to town because of the convenient commute and lower housing costs. In addition to expanded job opportunities in the study area, the site seems ideally suited to meet the growing regional demand for multi-family housing within walking distance to a commuter rail station. Additional housing and jobs on the site could in turn support a modest amount of neighborhood retail and commercial services: “What would be better than simply wake up and get a cup of coffee and walk to the station?” Could this be a smaller version of Assembly Square? Storrs Center, a mixed use development next to the University of Connecticut, could also serve as a model. Look at the Seaport District in Boston – from nothing it’s become the place to be.

**Possible Housing at Tufts:** Why is there no housing at Tufts? Probably 20 years ago they decided it was more cost effective to have students live out in the community. Today there are more international students and there would likely be demand for convenient housing near campus and train station. There are 400-500

**NGTV SKETCH PLANS PRESENTED AT CHARRETTE**



*Sketch plans presented at the public design charrette included two mixed use centers on the western end of the Rt. 30 Corridor (top) and plans for redevelopment and infill around the train station and Pine Street corridor (bottom).*



students, 400 faculty and staff, and 25,000 clients that come to campus every year. On any given day there are 1000 people on campus, and probably another 100-200 people at the science park. There is a potential to attract retirees who would like to live in the neighborhood and volunteer on the campus.

**Trail Connections for Commuting and Recreation:** Many participants identified the importance of establishing a continuous pedestrian and bicycle network to link the campus and various uses to each other and to the train station. Could this also include paths for electric carts? There was a suggestion for a continuous multi-use trail connecting from the school, through the town parcels, through the new Afonso subdivision and continuing to the Science Park and the train station. This could continue through the Tufts campus and extend to connect with a potential regional path in Westboro. The multiuse trail could be the connecting spine for system of paths and sidewalks that could link each of the uses in the study area. Additional paths could connect out into the surrounding fields and forests for recreational use and making additional connections to neighboring residential areas. Bike lanes on Rt. 30 would add an alternative route and allow for bike commuting to the station even in winter.

### **Visual Preference Survey Results**

Participants were asked to rate 66 images in three different categories: site amenities and accessory uses; buildings; and streetscapes. For any image, they could place a red dot to indicate “this is not a good fit for the area,” a green dot for “this is a good fit for the area,” or a yellow dot for “maybe this is a good fit.” The dots were added up with a positive or negative multiplier factored in to reach a total score for each image. (The entire survey and results are available in the appendix.)

Among the images for Site Amenities and Accessory Uses, the highest scores were for attractive façade lighting and signage, landscaped pedestrian spaces, and traditional shop fronts with flower boxes. The lowest score was for a blank wall with a bar sign.

For building types, participants preferred traditional New England village architecture, primarily with peaked-roof wood frame structures. The highest

score, however, was actually given to a modern four story brick downtown block with shops on the ground floor and three stories of apartments above. In general, buildings with a clear connection to an attractive streetscape or garden received high scores. The lowest scores were given to typical suburban office buildings surrounded by lawns and parking lots.

For streetscapes and open space, participants highly rated photographs depicting paths through natural areas, as well as lively pedestrian gathering spaces with outdoor dining, trees and attractive furnishings. The lowest scores were earned by single-use recreation areas, such as a playground, ball field or bike lane.

### **Public Design Charrette**

This design workshop was held on November 16, 2016 in the Jean Mayer Administration Building - Kohnstamm Conference Room on the Tufts School of Veterinary Medicine campus. The workshop consisted of two sessions. Area business and property owners were encouraged to “drop in” with questions and comments at 5:30 PM. At 7 PM, business and property owners were encouraged to stay and join residents, elected officials and other interested participants for the design exercise.

The objectives of the workshop were as follows:

- Present existing site conditions, environmental analysis and traffic studies;
- Review and verify results of the visioning workshop;
- Explore planning and design concepts for the Transit Village; and
- Measure public support for various master plan alternatives.

After welcome and Introductions, a brief presentation was made on existing conditions and results of the visioning workshop. This was followed by the Small-Group Design Exercise and a discussion of design alternatives, guiding principles, master plan prefer-

ences, and physical planning alternatives with the project team.

Sketch plans were presented for each part of the study area, with a focus on the Pine Street corridor and intersection with Rt. 30, as well as the western Rt. 30 Corridor.

Reaction to the plans engendered a discussion that included several important themes and observations:

**Light industrial and office/research uses will continue to dominate the area:** current businesses at Centech and the Science Park will likely soon be joined by a 50,000 square foot marijuana growing facility and a trucking-related business. MassDevelopment is hoping to bring a large biotech or similar firm to locate on the 40 acre parcel west of the science park. Potential buildout of the science park could bring in another 300-500 employees. While some of this growth will spur use of the commuter station, in the short term at least most of the users will continue to arrive by cars and trucks. They will contribute to creating opportunity for small retail and service businesses in the village. Participants noted a need for smaller, more flexible office and light industrial space that is not being met with the current office/industrial park model with a single business in a large structure on a separate lot.

**There are no NIMBY's here:** existing businesses, landowners and Tufts University representatives all support plans for a transit-oriented village. Everyone would like to see an attractive village center near the train station, with a mix of retail uses, coffee shops, pub, etc. that can serve as a community gathering place. While some worry about too many housing units, all agree that there is a great opportunity to promote housing for young people, empty nesters, and students that won't put pressure on the local school budget while meeting a pent up need for small units close to transit.

**Local regulations and development review process can be improved:** some participants noted that Grafton's zoning bylaws and planning board review process unnecessarily slow down the development process. They support increased use of expedited permitting and whatever else can be done to pre-

permit properties and smooth the way for redevelopment.

**Active involvement of DCAM and MassDevelopment can help spur redevelopment:** The 8 acre parcel to be split off from the Job Corps site can be the catalyst for developing the village core along Pine Street, but there needs to be additional investigation and support in planning for the reuse of the former state hospital building on the site. Likewise, MassDevelopment's interest in locating a biotech facility on their 40 acre site can boost the importance of the area as a technology center. Coordinating the design of both areas is key, with a focus on moving away from large glass and steel office buildings isolated from each other to an interconnected village of with human-scaled architecture and a continuous pedestrian system throughout.

**Open space & recreational opportunities are a key asset:** The beautiful farmland, forest and wetland corridors that surround and pass through the study area are important to protect, but also an asset to bring people to the site. This can be enhanced with a continuous network of sidewalks and paths throughout the area and linking the train station and other key centers of activity with each of the surrounding neighborhoods. There is strong support for a multi-use trail that would allow bikes and other uses to travel from the North Grafton elementary school through the study area to the train station and continuing East across the Tufts campus and into Westboro.

## Stakeholder Meetings

In developing the NGTV Project Area inventory, challenges and opportunities, and preliminary concept plans, the project team held meetings with several officials, boards and committees, and other local groups, in order to verify data and contribute additional information relevant to the future of the project area. Meetings were also conducted with representatives from Tufts University, WBDC, MBTA, and MassDevelopment to discuss future plans and interests.

## 6.0 NORTH GRAFTON TRANSIT VILLAGE ILLUSTRATIVE PLAN

### A SHARED VISION AND GOALS

Based on the “vision” and goals of the residents, local board and committee members, property and business owners, and other participants with a vested interest, an illustrative vision plan was prepared for the North Grafton Transit Village Project Area. The Vision Plan considers growth and conservation opportunities over the next 20 years under the following land use themes: The Environment, Economic Development, Residential Development, and Design.

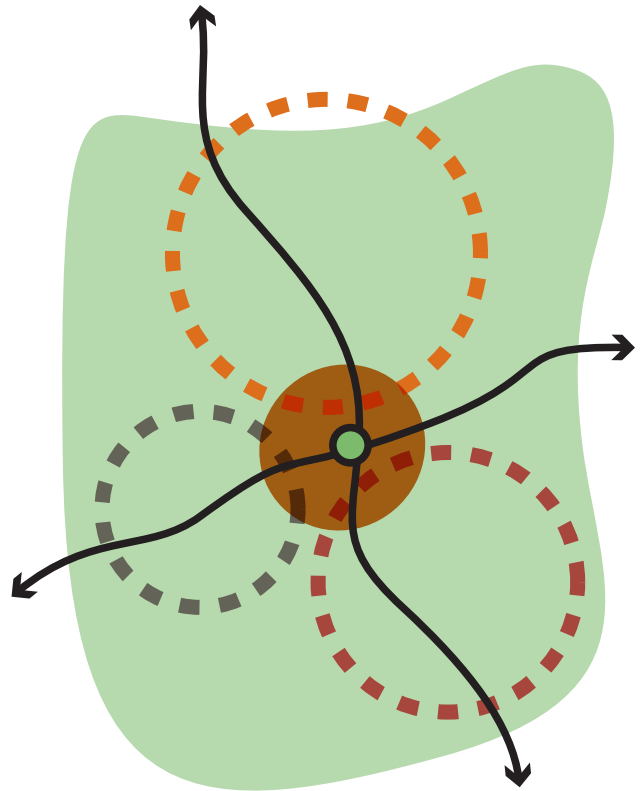
#### Environment

The vision for the future sees the natural environment as more than leftover space, but rather as a key asset that can enhance the quality of life for everyone who lives and works in the village. Natural areas will provide an attractive visual setting for building areas, as well as providing important services that reduce cost and add value: collecting and filtering stormwater runoff, providing trails and other recreational opportunities, and supporting wildlife habitat and ecosystem connectivity.

Large parts of the study area have already been set aside as open space. This includes conservation land owned or managed by the town and the Grafton Land Trust. Tufts University has set aside the majority of their land as open space, forming a greenbelt around the core campus and extending into Westboro along Route 30. Some of this area will continue to be actively used for horses, swine and other livestock, while most will remain as hay fields and forest. While the Tufts open space is not permanently protected it is actively used as part of their mission and is unlikely to be further developed. They have installed a solar farm in one open space area in the southeastern end of the campus, as well as a second smaller installation at the south end of the Science Park.

As noted earlier the greater study area is divided by a series of north-south running stream valleys with significant wetlands that provide important wildlife habitat. Protected by the Massachusetts Wetlands

### CONCEPT DIAGRAM FOR NGTV

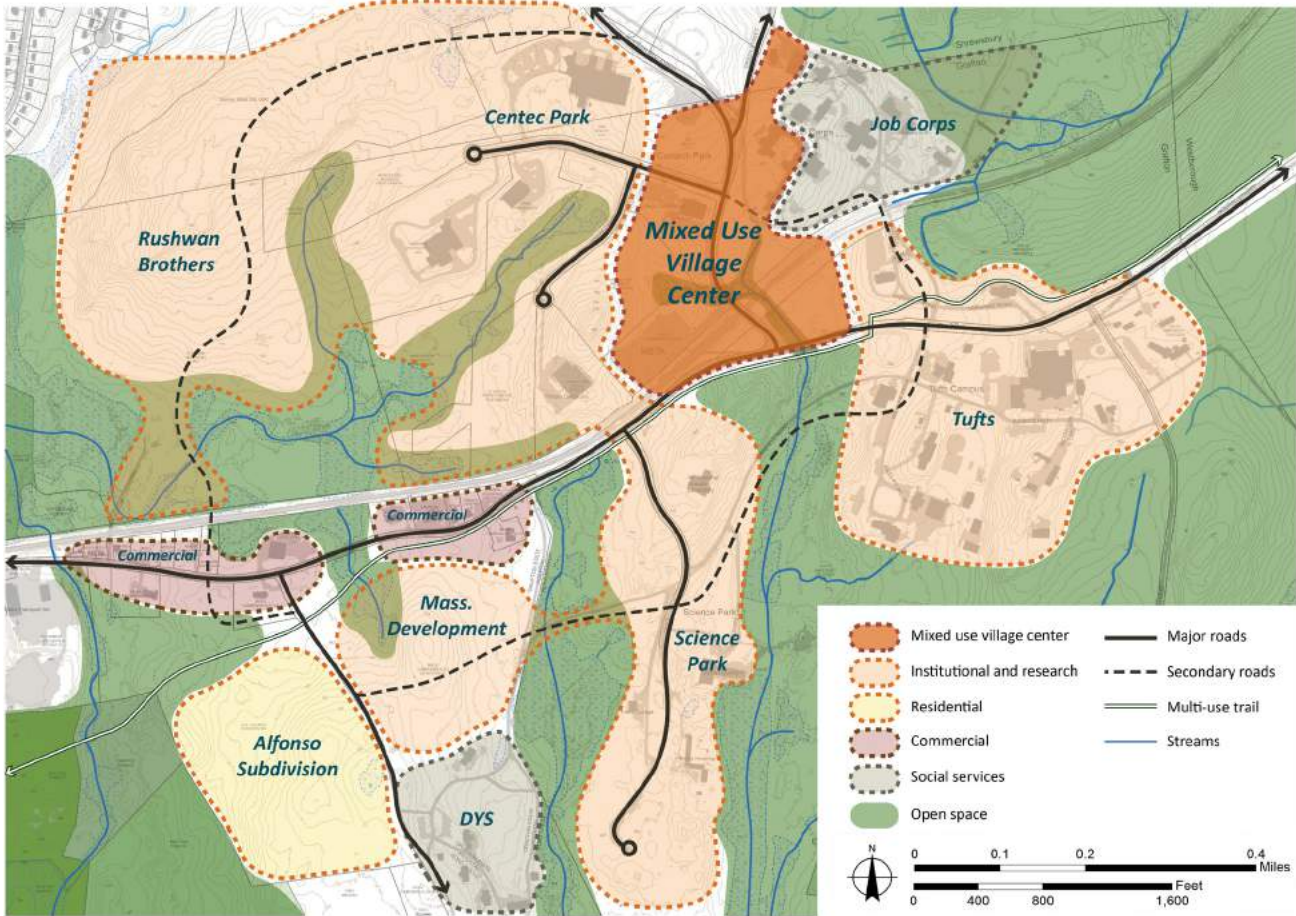


*Concept Diagram for the North Grafton Transit Village: A mixed use village center near the MBTA station would provide a unifying center for the currently isolated collection of land uses in the area. Multi-use trails and streetscape improvements would thread through these land uses, connecting them to the shared center.*

Act, these natural corridors are for the most part heavily wooded and can serve as permanent links to large patches of forest to the north and south. Even though the area is fragmented by the corridors of Route 30, the railroad, and areas of existing development, these habitat linkages will continue to provide some connectivity by which wildlife can move through the area. As development plans proceed, key culverts, bridges and other crossing points should be upgraded as needed to enhance passage for various animal species.

Directing the majority of future growth into a village center adjacent to the train station will serve to reduce development pressure on undeveloped land elsewhere in the study area, but isolated development of outlying parcels will likely continue – most significantly those owned by Afonso Builders and the Rush-

## LAND USE DIAGRAM FOR NGTV



**Land Use Diagram for NGTV Illustrative Plan: a mixed use village center near the MBTA station, in conjunction with a network of multi-use trails, streetscape improvements, and vegetated corridors, could connect the separate land uses in North Grafton into a more cohesive village.**

wan Brothers land, both in the west side of the study area . Existing masterplans for the Centech Park and the Science Park will also see conversion of considerable amount of land from natural cover to pavement and buildings. As this development occurs, the existing stream and wetland corridors provide an open space framework that should be enhanced through thoughtful site planning on each parcel, including:

- Establishing open space buffers between buildings and parking lots and wetland resource areas.
- Using native species and naturalized plantings (e.g., meadows instead of lawns) in designing and maintaining buffer areas and other open space.
- Using Low Impact Stormwater techniques to minimize runoff, as well as incorporating constructed wetland systems, rain gardens, vegetated swales,

etc. into the stormwater management plans.

- Managing open space areas to reduce the use of toxic chemicals and minimize impacts on wildlife during migration and breeding periods, when mortality tends to be higher.

### Economic Development

The transit village already has some powerful economic development assets, anchored by the Tufts University campus, the Grafton Science Park, and the Centech Park. Each of these has available development sites within an approved masterplan. Less well understood is the potential for other kinds of economic activity, such as retail stores, restaurants and professional services, which would be expected in a village setting. While the train station will provide a

morning and evening rush of commuters, and additional housing on the site will boost the customer base, the site lacks the automobile traffic found in other areas of Grafton or Shrewsbury, which already provide many of the common retail outlets and services.

The village model offers one answer, particularly in a form of architecture designed not for a single type of use (or even a single branded business, as so often found along a commercial strip) but to accommodate a varied mix of uses over time. The core building type will be a mixed use structure, three to four stories tall, with active retail and office uses on the first floor and apartments above. Multiple stories provide an economy of scale that can reduce the cost of construction per square foot. This lowers the pricing structure. The residential units will likely be easier to lease out, providing ready cash flow to support retail uses below.

Over time, a well-designed village center with a mix of apartments, shops and services, conveniently located at the train station, will enhance the value of lots in the Grafton Science Park and Centech Park, spurring revitalization in those areas. With limited additional space for development after the available lots are used up, the town could consider allowing for increased density and greater mix of uses within the parks themselves as a way to continue momentum of redevelopment and support additional economic activity close to the village core.

### **Residential Development**

By all accounts, Grafton and Shrewsbury are already well supplied with single-family homes. Additional single-family building lots will be available when the Afonso subdivision comes on line. While a market study has not been performed, developers and others with a strong understanding of the local real estate market participated in the workshops. They indicated that mixed use buildings with apartments over retail, multifamily structures with 10-12 units, and townhouse style development should all be viable in this location. Access to the train station, the Tufts University campus and other businesses in the area support a market for one and two bedroom apartments or townhouse units, catering to commuters, students, and empty-nesters.

The masterplan illustrates a logical distribution of these units radiating out from the center of the village at the train station and Pine Street corridor. Mixed use buildings at the center of the village can have apartments above them, maintaining more active commercial uses on the ground floor that face out on attractive streetscapes and pedestrian plazas. Moving away from the center there are opportunities for entirely residential structures, including three story flats or townhouse units. Overall density could comply with the 20 units per acre minimum required by Chapter 40R for multifamily projects.

On the Tufts campus there is an opportunity for student and/or staff housing on the lot closest to the train station. This could easily accommodate 50-75 units in a mix of two and three story apartments and townhouse blocks designed to fit in with the architecture of the campus.

It is unknown if the former Grafton State Hospital buildings that are going to be split off from Job Corps can be renovated, or if they are simply too far gone to be viable. Elsewhere in the state similar structures have been converted to attractive apartments and condominium units, but usually in structures that have been reasonably well-maintained in the transition between uses. They are also often well-suited to affordable housing, and state and federal subsidies and tax credits can be applied that act as a subsidy for the cost of renovation. If such reuse proves feasible, they will provide a wonderful anchor at the north end of the village and provide a unique sense of place and connection to history.

### **Design**

The design of the village should follow guidelines rooted in the traditions of the walkable New England Village, with a modern focus on social, economic and environmental sustainability. This implies:

- Reuse of historic structures where possible.
- Design of new structures that reduces costs and impacts through appropriate village density and traditional building design and materials that reduce costs and fit the climate.
- Streetscapes designed for pedestrians, with on-

street parking, a canopy of shade trees, attractive finishes and furnishings – all enclosed by a continuous edge of buildings, with active ground floor uses open up onto the sidewalk.

- Façades that provide a welcoming face to the street, fit in with their neighbors, and have a high percentage of transparency to make a strong indoor-outdoor connection.
- Low impact stormwater management that reduces

and cleanses runoff with stormwater gardens and other techniques.

- Convenient parking integrated into the design of buildings and streetscapes, so that there is always enough parking, but where it is largely hidden from view behind buildings.
- Beautifully designed and actively programmed public spaces, outdoor dining, farmers markets and other elements that enliven the village.

### NORTH GRAFTON TRANSIT VILLAGE ILLUSTRATIVE PLAN



*North Grafton Transit Village Illustrative Plan: with existing buildings in grey and potential new buildings in brown, this plan illustrates the potential for a new mixed use village center. A detailed description of each area of the plan may be found on the following pages.*

## ILLUSTRATIVE PLAN DETAIL: PINE STREET CORRIDOR

Part of the former State Hospital Campus adjacent to Job Corps will be sold and redeveloped for Housing and other uses. The large former hospital building on the site could be redeveloped for housing around a central courtyard. New parking lots would have to be built along the road in front of the buildings to accommodate residents.

the core of the new village is centered on the intersection of Pine Street and Centennial Drive. Two and three-story mixed-use buildings line a broad sidewalk with a continuous canopy of street trees, creating a traditional Main Street character.

Parallel on-street parking slows traffic and provides for convenient short-term parking. Larger shared parking lots in the rear of buildings serve long-term workers and residents.

Internal roads with parallel parking and tree-shaded sidewalks continue the village theme. A small park acts as a focal point, with outdoor cafe seating in front of adjacent buildings.

Existing stormwater retention areas are upgraded and connected to a series of rain gardens and landscaped infiltration swales to manage runoff from new roofs and paved areas.

Continuous sidewalks on both sides of every street provide for comfortable pedestrian circulation.

Built on the corner with parking (and/or gas pumps) behind, a coffee shop or convenience store acts as a landmark at the entrance to the village.



**ILLUSTRATIVE PLAN DETAIL: TRAIN STATION**



*A new connector road links the train station directly to Millenium Drive and Centech Park. New office or industrial buildings frame the gateway.*

*Hemmed in by the rail line to the south, wetlands to the east and steep slopes on the west, there is little room for expansion next to the train station without using the existing parking lot. Terracing new parking up the side of the hill would open up space for new buildings next to the station.*

*As with the proposed village on Pine Street, new mixed-use buildings would cluster on the “Main Street,” with parking hidden behind. Interconnected sidewalks, street trees and active ground-floor uses encourage walking.*

*While MBTA has no need for a new building on the site, a traditional train station building could serve as a landmark and focal point at the center of the site. As with the other buildings in the area, this could contain cafe and convenience retail on the ground floor, with office and residential use on upper stories.*

*The 2014 Tufts Campus Master Plan calls for a new recreation center on the library circle. The library (grey) is slated for eventual expansion with a new wing.*

*Three apartment buildings step down the sloping site, with parking lot between them. With the footprints shown, each 2-3 story building could accommodate 8 apartments on each floor.*

*20-30 townhouse units along a loop road frame an open meadow. These could include 1 and 2 bedroom units with internal garages. A system of paths and sidewalks provides access to the train station, the transit village and the campus.*

**ILLUSTRATIVE PLAN DETAIL: TUFTS CAMPUS**





## 7.0 CHALLENGES, OPPORTUNITIES & ACTIONS

In defining opportunities and development potential in the NGTV Project Area, the goals and recommendations of the Town-wide Comprehensive Plan, Housing Trust Action Plan, and Open Space & Recreation Plan, and input from the public workshops and stakeholder interviews were used as a guide.

### GENERAL DEVELOPMENT CONSTRAINTS

#### Zoning Requirements

The required minimum lot size in the Industrial, OLI, and R-40 districts is 40,000 square feet. However, of the 40 parcels in one of these zoning districts, 11 do not meet these requirements. Additionally, the frontage requirement is 120 feet in the I and OLI, 125 in R-20, and 140 in R-40. There are 15 parcels in the Project Area that do not meet these requirements.

A number of properties in the OLI are currently used as single family homes with a few small on-site businesses. With a predominance of small lots with varying ownership, particularly on the north side of Westboro Road, the OLI could be an impediment to future development and investment if this segment of the corridor is envisioned to transition to a mixed use (commercial and residential) district.

The parking requirements under Section 4.2 are also a deterrent to traditional village center and neighborhood development (although Campus Development Overlay is a little more flexible). If the NGTV Vision Plan is going to fulfill its potential, context-based parking standards will need to be adopted to allow reduction in on-site parking for mixed uses with different peak use times, available public parking, satellite parking for employees, and smaller residential units that don't need as much parking.

#### Historic Places Designation

All of the properties that make up the former Grafton State Hospital are listed on the National Register of Historic Places. This includes all the parcels of the Tufts Veterinary School campus, Job Corps campus, DYS campus, and all other properties owned and controlled by the State in the NGTV Project Area. As

these properties are renovated or redeveloped, several issues need to be considered prior to approval such as the viability of preserving existing buildings located on the property.

All new construction projects or renovation of existing buildings require funding, licenses, or approval from the Massachusetts Historic Commission which determines the potential impacts that the development may have on the historic nature of the property. Additionally, projects requiring funding, licenses, or permits from a federal agency must be reviewed for compliance under Section 106 of the National Historic Preservation Act. This process requires the developer to identify and evaluate the historic properties, assess any potential adverse effects to the properties, and outline potential measures to avoid, minimize, or mitigate the effects. While there are several attractive and historically significant buildings on the former Grafton State Hospital campus, most of them are in deteriorated condition and the Section 106 review process can be both time consuming and costly.

#### DCAMM Property Disposition Process

The State owns approximately 144 acres of property in the NGTV Project Area including a large amount of developable land and potentially redeveloped sites such as the Job Corps campus, DYS facility off Grafton State Hospital Road and the 3 buildings along Westboro Road between Institute Road and Grafton State Hospital Road. The Department of Asset Management and Maintenance (DCAMM) is responsible for the disposition of surplus state land. They must follow MGL Chapter 7 Section 40E-J (enabling the disposition of public land) which can be time-consuming and resource intensive for both DCAMM and the potential recipient. For example, if the Town of Grafton wished to acquire some of the state properties for economic development, they must inquire with the agency using the property to determine if any of the land could be declared surplus. If so, all other state agencies are given the opportunity to utilize the land first. If no other state agency has a need, then DCAMM then polls the Town of Grafton to determine if there's a local need for the land. If the Town does not have an eligible need, the land is then disposed through an open public process. Ideally, surplus lands in the NGTV Project Area would be transferred to other state agencies that would repur-

pose the property for economic development, such as MassDevelopment.

### **Institute Road**

This corridor is a major connection between the neighborhoods to the south and Routes 20 and 30. It's also highly used by commuters coming and going from the MBTA Station. Institute Road is on State property but designated and maintained as a Town road as determined Land Court decision. As a result, DCAMM granted the Town a 60' right-of-way over the road to facilitate future improvements. The roadway is narrow and rises and falls with the natural terrain creating some steep pitches and blind spots, though the developer plans to lower the hill. As future development occurs, the roadway will have to be improved which will require the coordination of the State, Town, property owners and developers. The process of redesign, permitting, and construction could be lengthy and costly.

### **Public Sewer**

Sewer capacity and availability is critical to future growth in the project area if the vision is for a traditional village and neighborhood development pattern. The sewer may next be extended in the project area to the Afonso "Village at Institute Hill" project, which is a 48-unit conversional residential subdivision on land along the western edge of Institute Road. This sewer extension would allow for the OLI portion of the property on Westboro Road and Institute Road to be connected. This extension could also provide sewer access to adjacent state parcels and other properties across Westboro Road significantly improving the opportunities for redevelopment along the corridor.

In addition to the sewer collection system, the Grafton Wastewater Treatment Plant may be an impediment to growth in the NGTV Project Area. The system currently utilizes about 1.9 MGD, or approximately 79% of available capacity. Municipalities that surpass 80% of available capacity (1.92 MGD in Grafton) are encouraged by the EPA to conduct a MADEP upgrade study. If Grafton's wastewater usage increases by less than 1%, the change would trigger an upgrade study at considerable cost to the town.

## **GENERAL ATTRIBUTES AND OPPORTUNITIES**

### **The Community**

As an integral part of the "Birth of the American Industrial Revolution" Grafton is grounded in a rich history and committed to the future. Characterized then by farms, villages, and factories, the built landscape has changed over time, particularly in the past decade, when the Town was one of the fastest growing communities in Central Massachusetts.

Grafton is a business-friendly community committed to expanding its commercial-industrial tax base. To back this up, the Town maintains an attractive unitary tax structure, at \$16.75 per \$1,000 for FY2016.

The Town has taken active measures to support economic growth, affordable housing, and conservation of natural resources and historic landscapes. The Town's active Economic Development Commission (EDC) promotes sustainable economic development and assists the Board of Selectmen and the Planning Board in the implementation of the Town's economic goals and objectives. The residents of Grafton voted to adopt the Community Preservation Act (CPA) in 2001 and the Community Preservation Committee (CPC) has been actively conserving open spaces for active and passive recreational uses. The Town also has the Grafton Land Trust which independently, and in partnership with the Town, has worked to preserve significant open space and promote its active use. All of these entities could play a major role in enhancing the NGTV Project Area as development takes place over time.

The combination of industrial and residential diversity, housing affordability, relatively easy access onto the Massachusetts Turnpike, and a picturesque historic commons district have provided Grafton with high marks on quality of life issues.

### **Institutional Support**

The Worcester Business Development Corporation (WBDC) mission is to serve as an innovative and leading force in the economic development of the region, resulting in job creation and tax base expansion. In the implementation of this mission, the WBDC is dedicated to working with prospective developers and/or

companies to ensure success by assisting in permitting, funding, and any other development assistance. WBDC owns property in Centech Park and has been actively working with the Town and prospective businesses in bringing new industries, tax base and jobs to the NGTV Project Area.

The Tufts University Cummings School of Veterinary Medicine (TCSVM) is New England's only veterinary school and a major draw to the NGTV Project Area. The school has an international reputation for excellence in both veterinary education and biomedical research. TCSVM offers access to its unique research services and skilled-labor pool to science park companies. The campus hosts over 40 companies annually as research, development and testing clients. Six of these occupy over 30,000 GSF of space on campus.

Historically, Grafton has had a positive relationship with The Cummings School of Veterinary Medicine (TCSVM). Besides being the second largest employer in town, the school contributes to the local public schools, town government administration, and public safety. Reflecting broad support of TCSVM mission, Grafton's town meeting approved the biotechnology friendly zoning overlay district zoning (CPO) for this site in 1994, and the latest campus master plan in 2014. In 2007, Grafton's annual town meeting approved the state's Chapter 43D "Priority Development Site" designation for the park, intended to streamline the entire local permitting process.

### State Support

State agencies such as DCAMM, MassDevelopment and MBTA have demonstrated an interest in the NGTV Project Area. DCAMM is preparing bid opportunity for developers to obtain 8 acres of the former State Hospital and current Job Corps campus along the Pine Street frontage opposite Centech Park. This could be the pivotal property in creating a mixed use village center. A subdivision plan has been filed by the State creating separate lots for the DYS campus off Grafton State Hospital Road, the DEM and DOL buildings along the Westboro Road frontage, and the undeveloped land in the middle portion of the property. MassDevelopment has lead this process and is seeking biotech firms in need of large parcels with adequate infrastructure. MBTA is actively marketing excess parking lots at their commuter train stations

to encourage transit oriented development (TOD) to boost ridership, create economic opportunities, and support the production of more affordable and diverse local housing.

### Development Incentives

Priority Development Sites: Grafton Science Park, Lots 3 and 5 in Centech Park, and the Rushwan Brothers industrial properties have been designated as Chapter 43D Priority Development Sites, making it eligible for streamlined local permitting, statewide marketing, and priority for other state funding.

Economic Development Incentive Program (EDIP): EDIP is a state tax incentive program that is designed to foster full-time job creation and stimulate business growth. Projects in Grafton Science Park and Centech Park may be eligible for state and local tax incentives - including negotiated municipal tax rates, workforce training funds, and an up to 40% state investment tax credit for qualifying tangible, depreciable assets. In exchange for full-time job creation, job retention and private investment commitments by participating companies. (More information on the EDIP can be found at [www.mass.gov.edip](http://www.mass.gov.edip)).

10% Research and Development Tax Credit: If a company spends on R&D, Massachusetts has a 10% R&D Tax Credit. The percentage can increase with business collaboration with a local university, like the Cummings School.

3% Manufacturers Investment Tax Credit: A company may also be eligible to claim a 3% investment tax credit of depreciable assets, which can be applied directly against any Massachusetts tax obligation, as a state registered manufacturer.

Tax Increment Financing (TIF): To attract and retain its business base, the Town of Grafton has also historically used tax increment financing agreements, and has such agreements with four companies. They have provided for municipal tax exemptions between 40% to 80%, and have a typical duration of ten years with the highest tax relief in the earliest years.

## Transportation and Access

State Route 30 (Westborough Road) traverses the NGTV Project Area and connects to the town centers of Grafton and Westborough. Route 30 also connects to Route 140, which provides access to communities to the north and south of the site, and Route 9, which provides east-west access.

Interstate 90 (the Massachusetts Turnpike, Exit 11) is 3.5 miles from the site, providing regional highway access via State Routes 122 and 30. The project area is also 6.0 miles west of I-495, which can be reached via State Routes 9 and 30. Near this station, Centech Boulevard, a connector road to Route 20, was opened in 2007, providing additional north-south access to the project area.

The project area is within a reasonable range of four major airports for regional, national and international travel: the Worcester Airport; T.F. Green Airport (Providence); Hanscom Airport (Concord); and Logan International (Boston). All are located within a 25-45 minute drive from the site.

## Freight Rail Access

There are several industrially-zoned properties in the NGTV Project Area which abut the rail line and have the potential for access to freight service which is operated by CSX. Within a short distance of the project area is the Grafton & Upton Railroad which has operated for nearly 140 years and also provides an opportunity for freight rail transportation to parts of central and eastern Massachusetts. Its interchange with CSX provides greater transportation opportunities throughout the region.

## VISION STATEMENT, GUIDING PRINCIPLES & GOALS

### Vision Statement

Based on input from Town officials and boards, stakeholders, and interested citizens, the following Vision Statement was prepared for the NGTV Project Area:

Context-based and character-building design and

development standards will lead to new investment in this area of North Grafton in the form of moderate-density residential, commercial, civic, and mixed use development. Over time, the NGTV District will accommodate incremental growth, high quality and sustainable development including a healthy mix of uses, a broad range of housing choices, viable transportation alternatives to the personal automobile, and easy access to jobs, public transportation, educational and civic institutions, and recreational amenities. There will be multiple benefits of reinvestment including access to and expansion of local businesses, a vibrant and attractive gateway into Grafton on one of its main corridors, and municipal revenue generated by property reinvestment.

### Guiding Principles

**Revitalization and Infill Development:** The plan should foster organic redevelopment over time with a supportive “public realm” of streets, pathways, open spaces, and infrastructure. As the area evolves over time, flexibility will allow the district to adapt to changing market conditions, while creating a template for an attractive, pedestrian-friendly village center and neighborhoods.

**Improving the Public Streetscape:** As redevelopment moves forward, both the public right-of-way and private lot areas facing the street should be designed to enhance the attractiveness and pedestrian comfort of the streetscape.

**Rationalizing Access, Circulation and Parking:** Whenever possible, roads and driveways should be shared by multiple lots, providing efficient access to shared parking lots in the rear of buildings. Parking lots should be designed as continuous units, crossing lot lines and providing for interior circulation.

**Complement Other Uses in the NGTV District:** Provide for redevelopment while making it easier for existing uses to thrive. The NGTV Project Area currently hosts Tufts University Cummings School of Veterinary Medicine, major State programs for DYS and DOL, large corporations, and small local businesses. New development should complement these uses and support their continued success or succession to a new opportunity.



*This photograph (Pine Hills, MA) illustrates recommended design characteristics for the NGTV District: traditional building design; mixed use at a comfortable scale; outdoor gathering spaces; and attractive streetscapes with shade trees and decorative lighting.*

## Goals for the District

New “placemaking” development standards for the NGTV District should achieve the following community planning goals and development objectives:

Encourage sustainable development that is consistent with the latest Town Master Plan, Affordable Housing Production Plan, and Open Space & Recreation Plan which have been adopted by the Town of Grafton.

Provide incentives for landowners and businesses to reinvest in the NGTV District, and respond to market opportunities for diverse residential unit types and mixed-use development in an attractive and complementary way with surrounding neighborhoods, businesses and institutions.

Establish an attractive and vibrant gateway to North Grafton, and preserve and protect the historical settlement patterns and cultural heritage of the community.

Provide “lifecycle” housing choices for a range of households in all income, age, size, and family type in order to meet the goal of preserving community character and providing opportunities for all residents.

Expand opportunities to live, work, and play in close proximity to commuter rail service, major institutions, local businesses, and passive recreational amenities.

Retain existing goods and services and expand opportunities for small locally-owned businesses and other

entrepreneurial activity in addition to large public entities, a private university, and bio-tech and life sciences industries.

Foster sustainable development, low impact design (LID), green infrastructure with appropriate standards for parking, energy, water, sewer, stormwater management, and protection of the Town’s public water supply.

Establish development standards, design guidelines, and review procedures that ensure predictable, fair and cost-effective, efficient, and expeditious permitting process.

Enable the Town to receive Zoning Incentive Payments and/or Density Bonus Payments in accordance with M.G.L. Chapter 40R, 760 CMR 59.06, and additional Chapter 70 aid in accordance with G.L. Chapter 40S arising from the development of housing in the NGTV District.

## STRATEGIC ACTION PLAN

Based on the illustrative plan for future growth and change in the NGTV Project Area, a series of recommended actions has been organized below. These recommendations are also based on input from Town staff, local boards and commissions, project area stakeholders (primarily residents property owners, and business operators), civic organizations, and interested citizens who participated in the public workshops.

The NGTV Illustrative Plan breaks down into a series of public and private actions. These include a detailed framework of potential changes to the zoning map and development standards, new thoroughfare (streets, sidewalks and trails) network connections, the integration of active open spaces and streetscape enhancements, and infrastructure expansions, all necessary to create a vibrant mixed use district and pedestrian environment. Other recommendations address incentives for reinvestment in private properties. Several recommended actions will also require a cooperative partnership between the Town and property owners to achieve the vision of the community for the NGTV District.

## **ADOPT THE NGTV STRATEGIC AREA PLAN INTO THE GRAFTON MASTER PLAN**

The NGTV Strategic Area Plan should be adopted by the Town as an element of the Grafton Master Plan. Adopting this Strategic Action Plan as part of the Master Plan will allow the Planning Board to refer to (and utilize) the recommendations of the plan as part of site plan reviews in the district to guide applicants towards the desired outcomes. Since the Master Plan is used as a guide for municipal investment and to enhance grant funding, adopting the Strategic Area Plan as part of the Master Plan can also enhance these efforts.

## **INFRASTRUCTURE IMPROVEMENTS**

### **Public Water and Sewer**

Within the NGTV Project Area, most properties are served by public water but public sewer is not available to several properties. Infrastructure is a critical component of the successful transformation of the NGTV Project Area into a vibrant mixed use center as well as attracting more science and technology-based businesses. Currently, the Town's sewer infrastructure capacity and network limitation creates a significant impediment to development. Without infrastructure improvements, zoning changes and development partnerships are not likely to lead to significant improvements.

The Rushwan Brothers property has good development potential and could access water, sewer, and electrical service by extending Centennial Drive (see below). Stormwater utilities could be located on a Town-owned parcel adjacent to the WBDC parcel and Rushwan Brothers property, and service future development on both properties as well as the extension of Centennial Drive. This property might also provide some recreational value such as an infiltration park and trail connection.

The Town of Grafton must consider options for expanding sewer services to all properties in the project area. Individual or communal septic systems are inefficient and may not be compatible with a higher density, compact mixed use village development pattern envisions for the NGTV Project Area.

As a starting point, the Town should conduct a Return On Investment Analysis (ROI). This analysis projects new development and associated tax revenues made possible by expanded sewer capacity and system extension. Confirming committed investment by developer of taxable properties is a key factor in estimating whether the increased tax revenue would at least cover the debt service.

Sewer financing alternatives are fairly narrow. One possibility is the MassWorks program which provides grants for infrastructure improvements such as water and sewer capacity and service improvements. While this is a competitive program, the Town may be in good position for a grant given the proximity to the MBTA Station, Tufts, and underutilized private and state properties that are primed for development. Other sewer financing options include the following:

**Betterment Fees:** Where the service area is expanded, betterment fees are commonly used to reduce to impact on the Town and require users to pay for new service and development opportunity.

**District Increment Financing (DIF):** This is most in areas with strong markets and developable property. Under a DIF, the new tax revenues would be directed to repaying for sewer improvements such as upgrades to the WWTF, expansion of the collection system, or I/I reductions.

**Other Methods:** Other potential financing sources may include Community Development Block Grants (CDBG), Clean Water Revolving Loan Fund, USDA Rural Development Loan/Grant, use of MGL C59, Section 21n (shifting costs from WW ratepayers to town taxpayers), Annual Town Meeting funding and town bond, or special funding through the legislature.

## **ACCESS AND CONNECTIVITY IMPROVEMENTS**

### **Street Access and Connectivity**

There are a number of large underdeveloped and vacant parcels located with the NGTV Project Area that have poor access to primary streets. For example, the DYS facility, Afonso property, and Rushwan Brothers would require significant upgrades to current access roads in order to accommodate new development. The Town should work with the State,

Tufts, WBDC, the Town of Shrewsbury, and project area property owners to upgrade the street network such as Institute Road, Cornfield Road, and Grafton State Hospital Road.

Other potential access improvements include connections to the Rushwan Brothers property by extending Centennial Drive with an easement across Lot 3 which is owned by WBDC. This roadway could also connect with future public streets in Centech Park North over the line Shrewsbury that tie in with Centech Blvd and complete network of street connections throughout the park.

Another possibility is to create a new above grade crossing of the rail corridor on the vacant property owned by the Ruswan Brothers at 117 Westboro Road. This new access road could be aligned with another new access road to the Afonso development site on the south side Westboro Road to form a 4-way intersection in a segment of the corridor envisioned as a small mixed use village area.

The Job Corp property access could also be improved if future development is going to take place on site. This may include an upgrade to the Pine Street access where most of the new development is likely to occur. Additionally, the former bridge which spanned the rail corridor and provided direct access to Westboro Road could be reconstructed to provide a secondary access to the Job Corp campus and the future development area. Alternatively, this could be a pedestrian bridge that provides direct access to the main Tufts Veterinary School campus.

### **Bicycle and Pedestrian Facilities Network**

Currently there are no sidewalks, bikelanes, or trails along Westboro Road. As this area transitions into a mixed use village district, pedestrian and bicycle access will be critical. As illustrated on the NGTV Vision Plan, a network of these facilities should be planned for and connections made between the MBTA Station, Tufts, Grafton Science Park, Centech Park, Job Corps development site, Afonso development site, and other future developments along primary and secondary streets in the project area. This bicycle network should also connect to the future Boston Worcester Air Line Trail (BWALT).

## **COORDINATION WITH PROPERTY OWNERS AND PROSPECTIVE DEVELOPERS**

### **Prepare a Market Analysis**

The Town should conduct a comprehensive market analysis with a focus on the key development prospects such as the MBTA Station, Rushwan Brothers, open parcels in Centech Park and Grafton Science Park, the DYS and Job Corps properties, Afonso property, and a portion of the Tufts parcel adjacent to Pine Street and Westboro Road. This market analysis would provide greater detail as to development potential, targeted demographics, real estate products, and financing options.

### **Coordinate with On-going and Future Development Prospects**

As the State has made a final determination on the lease boundaries for the Job Corps program, DCAMM is now in a position to dispose of the remaining 8 acres, including some buildings that were previously used by Job Corps and have significant structure damage. Given the proximity to the MBTA Station and Tufts, this property has significant potential for residential and possibly mixed use redevelopment. The Town should work closely with DCAMM to ensure that future development is compatible with the NGTV Vision Plan.

The Town should coordinate with MassDevelopment regarding potential subdivision and future development on the DYS campus property including possible streetscape and pedestrian amenities, needed zoning amendments, and future development plans to ensure that they are compatible with the NGTV Vision Plan.

The Town should coordinate with WBDC in the marketing of available parcels in Centech Park, connections with Rushwan Brothers property, possible streetscape and pedestrian amenities, needed zoning amendments, and future development plans to ensure that they are compatible with the NGTV Vision Plan.

The Town should continue to work closely with Tufts University in carrying out the campus master plan, and considering some mixed use development in the

area around Pine Street and Westboro Road, and possibly along the frontage of Grafton Science Park. The Town should coordinate future pedestrian and bicycle facilities with those planned on the Tufts main campus.

The Town should work with Afonso Builder to consider alternatives to the proposed conventional subdivision including a mixed use area along Westboro Road and a broader range of single family and multifamily unit types that could be allowed under new mixed use zoning.

The Town should further discuss future development scenarios, the feasibility of a freight rail spur, and access options with Rushwan Brothers.

The Town should continue to discuss the possibility of transit oriented development at the North Grafton Commuter Station with the MBTA including structured parking and connections with Centech Park via Lot 7.

The Town should discuss potential development scenarios on Centech Park Lot 1 with State Street Bank. This is a prime development site and could be a key site for a future mixed use district.

The Town should coordinate with the Town of Shrewsbury on future infrastructure and street network improvements, zoning, and marketing of Centech Park.

## **ZONING AMENDMENTS**

### **Expand the PDOD**

The Town should consider expanding the its designation of Priority Development Sites Overlay District (PDOD) under the State’s Chapter 43D Expedited Permitting Law. Both public and private properties can be designated as a PDS and the underlying base zoning allows for commercial, industrial, residential, or mixed use. There are several properties in the NGTV Project Area that could benefit by the PDS designation. The State also encourages Priority Development Sites that are adjacent to areas of existing development such as Centech Park and Grafton Science Park;

on in underutilized buildings or facilities such as Job Corp campus; or near transit services such as the MBTA commuter station. The undesignated parcels in Centech Park and the new development parcel on the Job Corp campus are good candidates for the PDOD.

### **Adopt a New Village Center Base District (Alternative 1)**

The Town should strongly consideration creating a new North Grafton Transit Village base zoning district to replace portions of the R-20, R-40 and OLI along segments of Westboro Road and Pine Street. This new district should provide for small scale mixed uses including commercial, light industrial maker space, civic/publicly-oriented uses, and a range of residential types including small detached SF residential units, attached SF units, apartments, and Live/Work units. Design standards should ensure that development occurs in a pedestrian-oriented pattern with buildings placed toward the front of the property creating enclosure of the street, parking located to the side or rear of the buildings, integration of attractive streetscapes and active open spaces on site, and connected to surrounding properties with sidewalks and trails to enhance walkability. The Village Mixed Use Overlay District (VMUOD) covering South Grafton Village provide a template for mixed use zoning in the NGTV Project Area.

### **Adopt a Chapter 40R Smart Growth Overlay District and Bylaw (Alternative 2)**

As an alternative to a new base zoning district for the core area centered at the intersection of Westboro Road, and Pine Street, the Town should consider adopting a new Chapter 40R overlay districts similar the Fisherville Smart Growth Overlay District (FSGOD). Whether it’s a new base district or SGOD, the new zoning regulations in the NGTV District should prescribe clear development standards for new buildings and other features based on future planning and community development objectives, appropriate physical form and uses, and preferred design characteristics. New development projects would address building form and placement, parking and access, landscaping and streetscape, open spaces and activity areas, access, connectivity, and internal circulation consistent with the overall vision and described further below.



**Key Components:** The statute defines 40R as “a principle of land development that emphasizes mixing land uses, increases the availability of affordable housing by creating a range of housing opportunities in neighborhoods, takes advantage of compact design, fosters distinctive and attractive communities, preserves opens space, farmland, natural beauty and critical environmental areas, strengthens existing communities, provides a variety of transportation choices, makes development decisions predictable, fair and cost effective and encourages community and stakeholder collaboration in development decisions.”

The key components of 40R include:

- Allows local option to adopt Overlay Districts near transit, areas of concentrated development, commercial districts, rural village districts, and other suitable locations;
- Allows “as-of-right” residential development of minimum allowable densities;
- Provides that 20% of the units be affordable;
- Promotes mixed-use and infill development;
- Provides two types of payments to municipalities; and
- Encourages open space and protects historic districts.

**Incentive and Density Bonus Payments:** Chapter 40R include an incentive payment upon the passage of the Overlay District based on the number of projected housing units as follows:

<b>Chapter 40R Incentive Payment Schedule</b>	
<b>Dwelling Units</b>	<b>Payments</b>
Up to 20	\$10,000
21-100	\$75,000
101-200	\$200,000
210-500	\$350,000
501 or more	\$600,000

There are also density bonus payments of \$3,000 for each residential unit issued a building permit.

**Mixed Use and Density Standards:** To be eligible for these incentives, the Overlay District needs to allow mixed-use development and densities of 20 units per acre for apartment buildings, 12 units per acre for two and three-family homes, and at least eight units per acre for single-family homes. The Zoning Districts would also encourage housing development on vacant infill lots and in underutilized nonresidential buildings.

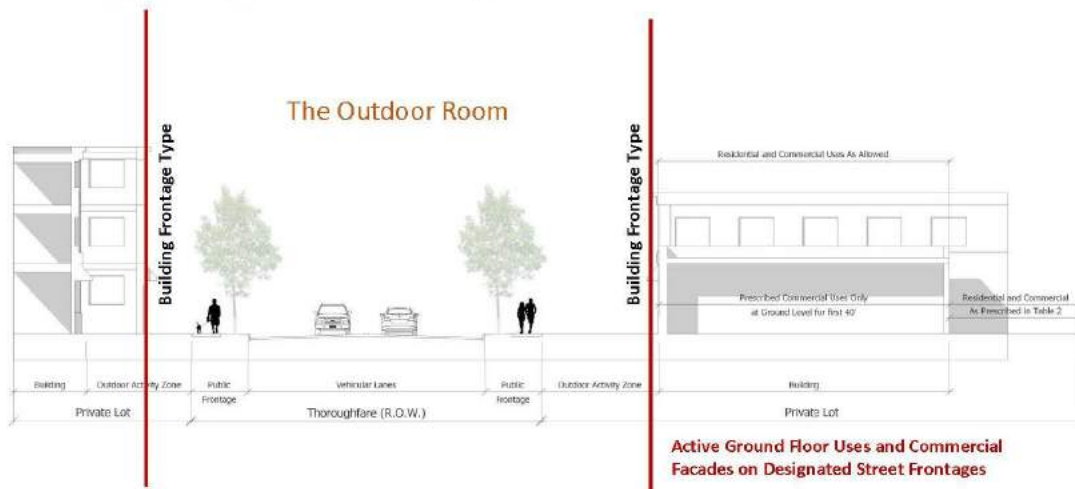
**Other Relevant Provisions:** The state recently enacted Chapter 40S under the Massachusetts General Law that provides additional benefits through insurance to towns that build affordable housing under 40R that they would not be saddled with the extra school costs caused by school-aged children who might move into this new housing. In effect, 40S is a complimentary insurance plan for communities concerned about the impacts of a possible net increase in school costs due to new housing development.

Other recent changes to Chapter 40R include provisions for Compact Neighborhoods and Starter Homes. While no communities have utilized these provisions to date, they might have benefit to Grafton. Like Compact Neighborhoods, the Starter Home amendment to 40R is intended to encourage municipalities to adopt zoning in certain eligible smart growth locations that allows for development of housing, specifically single family in the case of starter homes, at a density of at least 4 units/acre. Unlike Compact Neighborhoods, however, Starter Home Zoning Districts offer participating municipalities the Zoning Incentive and Density Bonus. (The absence of any direct, guaranteed financial incentive for Compact Neighborhoods limited interest in the program by communities). The state is currently working on the program details for Starter Home component.

**Permitted Use and Performance Standards**

**Allowed Uses:** The current Intensity of Use Table in Section 3.2.3.2 of the Grafton Zoning By-laws should allow for a broader range of uses “by right” under the new NGTV District to encourage mixed uses with moderate-density residential. Where potential conflicts between uses may occur (such as between new residential and existing industrial uses) they should be specially addressed through performance standards. Auxiliary uses such as farmers’ markets, food

## Building Frontage Zones and Types



*Potential Frontage Zones provide for prescribed ground floor uses in areas of the district where street activity is desired such as a village centers. While maintaining common design standards throughout the district, establishment of frontage zones along Westboro Road and Pine Street near the intersection would achieve this goal while supporting existing office, service, and industrial uses elsewhere in the district.*

carts and trucks, and vendor courts should also be allowed in the new NGTV District.

**Frontage Zones:** Frontage Zones include the contiguous land area along an existing or new street from the edge of the public right-of-way (the Street Line) to a prescribed Build-To-Zone. Within the Frontage Zones specific pedestrian oriented uses are permitted on the ground floor. Other uses are permitted but only above the ground floor or behind the Build-To-Zone. Street entrances may be allowed to all permitted uses for access to both ground floor and upper floor uses.

**Active Ground Floor Uses** may include retail, restaurants/bars (primarily sit-down), personal services, theaters, museums, libraries, and other uses that encourage public access. The purpose of this requirement is to ensure existing or fledgling clusters of retail and/or restaurant uses are not interrupted and diminished by less active ground floor uses such as residential or back office space. These uses activate the pedestrian environment and allow for clustering of complimentary uses in the most visible locations increasing their rate of success.

### Building Form, Placement, and Design Standards

The primary intent of Building Form Standards in the new NGTV District should be to shape the physical and functional character of the area through building placement, form and design. The Building Form Standards provide the minimum level of control necessary to meet this goal while providing a range of opportunities appropriate to the desired character of the new NGTV District. The Building Form Standards establish basic design parameters including the building envelope and certain permitted or required elements such as size, massing, articulation, height, fenestration, and pedestrian-oriented encroachments and elements (i.e. porches, balconies, terraces, awnings, signs, displays, etc.).

**Building Envelope:** The Building Envelope prescribes the specific set of dimensional standards that apply to all properties. Building Envelope Standards typically consist of minimum lot size, setbacks, frontage, building coverage or floor area ratio (FAR), and building orientation. In the NGTV District, the minimum lot size and frontage requirements should be low (i.e. 5,000 SF/50' frontage where public sewer and water is available). This is because the size of the lot is realisti-

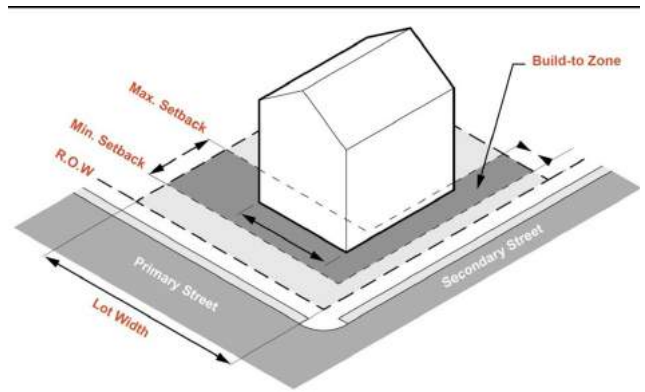
cally determined based on standards directly related to use, size of the building, and required parking and open space. Additionally, having a larger minimum lot size requirement may arbitrarily and unintentionally deter small start-up businesses and services desired in the NGTV District.

**Build-To-Zone (BTZ):** The BTZ is the area along the frontage representing the minimum and maximum setback from the Street Line (edge of the public right-of-way) in which the façade of the primary building must be located. The BTZ is generally determined by the type of building. For example, in the new NGTV District:

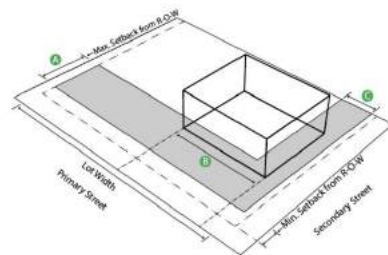
- Commercial buildings would typically have small setbacks to allow for seating terraces and be located at grade with the sidewalk.
- Residential buildings would typically have a small setback and be slightly elevated above grade.
- Civic buildings would typically be setback further and elevated above grade.

The BTZ would generally ensure that the buildings would be placed closer to the street line to create a relationship with the street and an attractive pedestrian environment. Parking would not be allowed between the building and the Street Line except under special circumstances. The BTZ also provides flexibility for Active Space amenities between the front façade and street line such as outdoor terraces and forecourts that contribute to the pedestrian environment. These types of site development standards provide for a degree of variation from adjacent buildings while maintaining consistency in overall character and street enclosure. Other building elements such as stoops, balconies, bay windows, eaves, outdoor seating, awnings, blade signs, and similar elements may encroach beyond the Build-To Zone, while porches typically may not.

**Build-To-Zone Occupancy:** This is the percentage of the Build-To Zone that is occupied by the principal building's primary façade. The purpose of BTZ Occupancy is to ensure that the street enclosure is generally maintained along a large percentage of fronting buildings. Active spaces such as dining terraces



*The build-to-zone (BTZ) is defined by the specified building placement and pedestrian orientation standards, with a focus on defining the maximum setback, rather than just the minimum setback that is usually required. Build-to Zone Occupancy designates the minimum percentage of the frontage that has to be occupied by the building.*



*The build-to-zone (BTZ) is defined by the specified building placement and pedestrian orientation standards, with a focus on defining the maximum setback, rather than just the minimum setback that is usually required. Build-to Zone Occupancy (B) designates the minimum percentage of the frontage that has to be occupied by the building.*

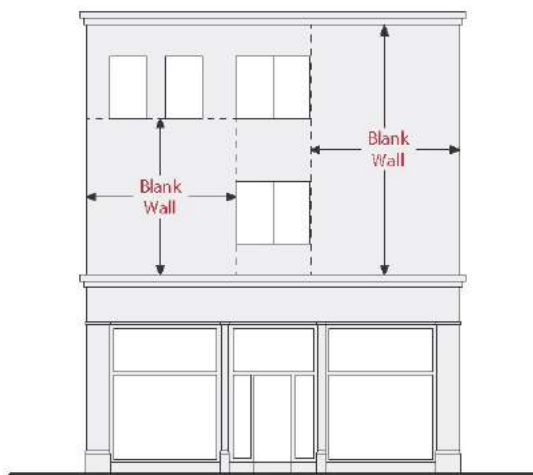
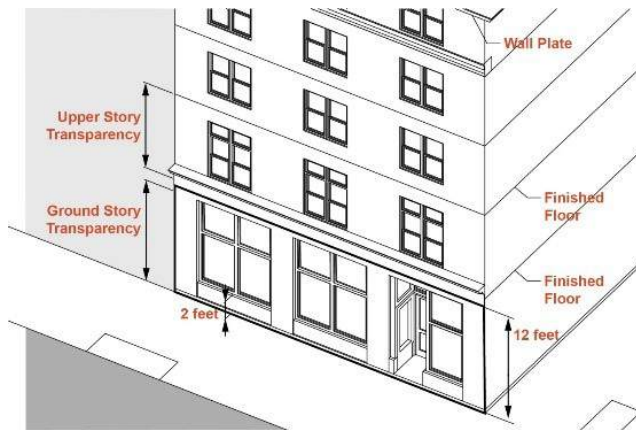
may count towards this requirement, depending on the location. Building facades and uses that are more pedestrian-oriented (i.e. shops and restaurants) will typically have higher occupancy requirements than residential or auto-oriented buildings and uses.

**Façade Activation:** In addition to the placement and orientation of primary building close to the sidewalk, the building facades in the NGTV District should actively engage the pedestrian, bicyclist, and driver. Blank walls should be avoided and long buildings should be articulated to break up the mass. Windows and doorways should be large with clear openings

and attractively decorated. Other façade elements that contribute to a vibrant pedestrian environment include attractive awnings, signs, lighting, terraces, balconies, displays, and street furniture.

**Building Size:** A maximum building floor-plate (footprint), gross square footage, and maximum number of dwelling units per building should be considered for the new NGTV District so that new buildings are at an appropriate scale for the context and development patterns in the project area. This may also be achieved with a Floor Area Ratio standard for certain types of buildings.

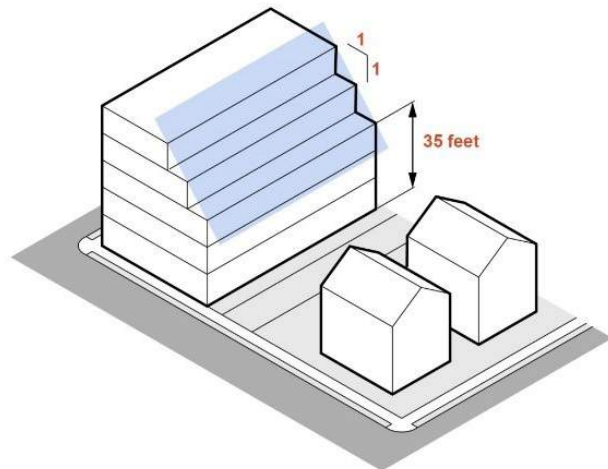
**Building Height:** Currently, maximum height in the OLI is 35 feet and 60 in the CPO. It is recommended that maximum height remain 35 feet in new NGTV District with certain performance standards (See “Stepbacks”



**Façade Activation Examples**

below). Additionally, there should be a minimum height requirement for the front façade elevation such as 14 feet. The purpose of the minimum height requirement is to ensure that street enclosure and active streetscapes are maintained at ground level. Single story buildings can be enhanced with large storefront windows, transoms, parapets and decorative elements such as cornices, pediments, brackets, and balusters.

**Bulk Planes and Building Stepbacks:** To address compatibility with neighboring buildings and the street, taller buildings should be required to have a stepback from the street line to avoid shadowing and a canyon effect over the corridor. The total street enclosure should also be considered in the new development standards for the NGTV District. This is determined by measuring to the distance between buildings on opposite sides of the street in relationship to their heights. This is also known as the Building Separation to Height Ratio. In a traditional neighborhood development district, such as the NGTV Project Area, a ratio of 0.5 to 1.0 would provide appropriate amount of street enclosure and an attractive pedestrian environment without creating a “canyon effect” with high levels of shading on the sidewalk.



**The Bulk Plane Diagram illustrates a stepback of the upper floors of a building from the front facade at certain height to avoid a canyon effect on the street and sidewalk.**



*Street enclosure example measuring the ratio of building heights on both sides of the street to the district between buildings across the street. A comfortable ratio for a small village center is about .75.*

### Building and Development Types

These provisions define the types of buildings and developments preferred in the district including basic dimensional and design standards. This may include basic design standards for architectural, façade, bulk, and building elements. Recommended building and development types for the NGTV District include the following:

- Cottage and Cottage Court (Small Single Family Detached)
- Single Family Attached (Townhouses and Row-houses)
- Paired House (2 and 3 DUs)
- Multi-Family Buildings (4+ owner and renter DUs)
- Live/Work or Shop House (Single Family with Commercial)
- General Commercial Building
- Mixed Use Building
- Flex Space/Fabrication Building
- Gas Backwards (Convenience with Gas Pumps to

the Rear)

- Civic Buildings
- Co-Housing Development

### Flexible Parking and Loading Standards

Parking requirements are typically a major factor in site plan design, and flexibility in the standards is critical in a traditional mixed use village environment. Where on-site parking is needed in the NGTV District, the intent of parking and loading standards should be to provide an adequate number of spaces, shared facilities, and access to parking areas while avoiding vast surface lots and curb cuts that create low-interest areas and conflict points for pedestrians. Excessive and consistently underutilized parking also creates a wasted economic and community development opportunity. Where applicable, the requirements should result in new on-street and shared off-street parking as an alternative to inefficient single-purpose reserved parking. New standards should also aim to limit the environmental and aesthetic impacts of large surface parking lots.

Off-street parking in the new NGTV District should meet the following objectives:

- Promote a “park once” environment that enables

people to conveniently park and access a variety of commercial enterprises in pedestrian friendly environments.

- Allow and encourage shared parking, reduce fragmented, uncoordinated, inefficient, and single purpose parking.
- Avoid adverse parking impacts on neighborhoods adjacent to the NGTV District.
- Allow of the creation and utilization of on-street parking.
- Provide incentives for increasing public parking in lieu of private on-site parking.
- Reduce stormwater run-off and water pollution through low impact design (LID) and light imprint development techniques such as pervious paving, natural infiltration systems, shade trees and landscaping.

As an alternative to the current parking standards under Section 4.2 of the Grafton Zoning Bylaws, a “Parking Toolbox” would provide relief from these high requirements and the resulting excessive parking through a variety of flexible techniques such as the following:

**Maximum Parking:** In addition to minimum parking requirements, the Town should consider setting a maximum parking standard to prevent excessive and unnecessary parking from being created in the new NGTV District.

**Shared Parking and Mixed Use:** Allow for a combination of uses with shared parking facilities and an agreement between owners. The criteria for determining shared parking should consider proximity between uses and properties; documented offsets between peak demand; uses having a high rate of parking turnover; or evidence of similar uses and location situations operating successfully with lower amounts of parking. New Institute of Traffic Engineers (ITE) and Urban Land Institute (ULI) shared parking manuals provide excellent resources for determining the amount of parking that can be reduced on a site by site basis.

**Satellite Parking:** Required parking spaces should be permitted at off-site locations under the following provisions:

Off-site parking spaces for customers should be located within 500 feet from the primary entrance of the building along the shortest available pedestrian route.

Off-site parking spaces for employees should be located within 700 feet from an employee entrance along the shortest available pedestrian route.

**Proximity to Public Parking :** Many communities allow for a reduction in on-site parking when there is a public parking facility with sufficient capacity within a reasonable walking distance. A distinction is also made between long-term parkers (such as employees) and short-term parking (i.e. customers) in terms of distances willing to walk to their destination. The new NGTV District should allow on-site parking exemptions for employees where public parking is available within 1,000 feet, and 500 feet for customer parking.

**Adequate Pedestrian Access and Facilities:** Parking reductions should be allowed where it can be demonstrated that sufficient residential and/or commercial density coupled with adequate infrastructure to support pedestrian and bicycle travel exists, and which can support pedestrian and bicycle access as a primary means of travel as a viable alternative to access by a personal vehicle. For example, residential and mixed use buildings that are within close proximity to commuter rail and bus stops/shelters (300 feet for example), and adjacent to multi-purpose pathways or bike lanes which connect to shopping and employment centers should be given consideration.

**Structured Parking:** Structured parking, including below and above ground, should be allowed and encouraged in the NGTV where appropriate. Design standards should require structured parking to be internal to the block, and behind and attached to the building were possible. Where structured is placed along the street line it should be well landscaped to visual impact from the street and sidewalk. Liner commercial uses at the ground floor should also be allowed and encouraged at the ground floors. Structured parking should have multiple openings, provide reasonable floor heights, and be well lite to provide a

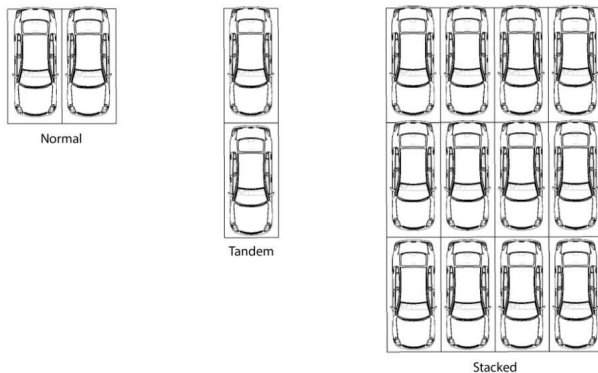
sense of security.

**Special Parking Types and Standards:** In addition to handicapped parking requirements, the Town should encourage the availability of special parking types in the NGTV District. For example, alternative fuel vehicles should be encouraged (particularly in parking structures). Finally, car sharing services (such as Uber, Zip Car or Enterprise) should be encouraged to provide parking spaces in the new district.

**Tandem Parking:** Tandem parking provide an opportunity to maximize the efficient uses of land and possibly reduce the number of required parking spaces on site. Tandem parking is managed by occupants of a shared dwelling unit and allows for a similar reduction in space, with one car to be parked directly in front of another.

**On-Street Public Parking Reduction Credit:** Off-street parking requirements should be reduced by the number of on-street public parking spaces directly in front of a given property.

**Bicycle Parking:** Sufficient and conveniently accessible bicycle parking for residential, commercial and mixed uses should be provided throughout the new NGTV District.



***Tandem parking, where two spaces assigned to a single dwelling unit or office are placed one behind the other, can double the number of parking spaces accessed by each aisle, reducing pavement by a third. Stacked parking carries the idea further, but requires full-time management.***

**Parking Requirement Exemptions:** Maximum parking limits should be waived for structured parking where spaces provided within the footprint of a structure containing one or more other uses, including rooftop, at-grade, or below-grade spaces, provided that additional spaces are made available for lease to other property owners within the new NGTV District in meeting their parking requirements. Additional parking requirements should not be applicable to outdoor dining or similar auxiliary uses on site.

**Drive-Through Facilities:** Drive-through facilities should not be allowed in the new NGTV District except for unique circumstances and should always be located to the rear of the property without a separate driveway.

**On-Site Parking Placement Standards:** Off-street parking should be located to the rear of the primary building or a minimum of 5 feet behind the front wall elevation of the building nearest to the Street Line. A landscape buffer should be provided to screen parking areas from the street.

**Parking in Front Yard Area/Non-Residential and Mixed Use:** Only under special circumstances should the Town allow parking in front of the building such as the following:

- Targeted Rehabilitation Site - A project involving the renovation of an existing building and site where parking currently exists in front of the building.
- Street Side Parking - Parallel or angled parking provided on a privately-owned lot directly adjacent to the public street right-of-way in combination with a tree planting strip and sidewalk connecting to abutting lots and to the primary building on-site. This would require a cooperative effort between the Town and private property owners but is relevant on NGTV District on Westboro Road and Pine Street near the intersection.

### **Landscaping, Screening and Lighting Standards**

The intent of these provisions should be to enhance the pedestrian environment and provide buffers where necessary in the new NGTV District with appropriate landscaping and lighting design.

Private Frontage: Landscaping should include a mix of trees and other plants, and should be properly maintained. Where the building is setback from the street line, Active Space with pedestrian amenities and deciduous canopy trees should constitute the primary landscaping elements and should be placed so as to maintain relatively clear views of the



**Parking Placement Examples**

ground floor elements including doorways, windows and signs. Hedges or shrubs planted along the front or side street yard property line should not exceed 4 feet in height except when abutting a neighboring area where increased screening is desired.

Parking Lots: Landscaping in parking lots should primarily include shade trees installed at or below the level of the parking surface to allow for capture of stormwater runoff. Plantings should not obscure site entrance and exit drives, or street intersections. Pervious or semi-pervious parking area surfacing materials, such as pervious asphalt, grass, “grass-crete”, or ring and grid systems, are encouraged where conditions allow for adequate infiltration.

Transitional Buffer: Landscaping and screening should be provided as a transitional buffer along perimeter lot lines between the new NGTV District and abutting residential zones.

**Open and Civic Space Standards**

It is recommended that a broad range of active public and private open spaces and civic gathering areas be provided in the new NGTV District that, over time, will amount to reasonable amount (such as 10%) of the total land area. The overall goal is for all property within the NGTV Project Area to be within a 5-minute walk (about ¼ mile) of an active or passive open space.

Developers should reserve a small portion of their site for open space. For properties in residential use, private yards and gardens, forecourts, and courtyards are appropriate. For commercial and mixed use sites, additional civic gathering and active recreation types of open space could be created (such as identified below). Two or more adjoining property owners within the new NGTV District are encouraged to create joint open spaces that benefit a larger group of people. These spaces can be small, integrated into the site or buildings, and serve dual purposes. Some appropriate examples for the district may include the following:

- Plazas and Squares
- Courtyards and Forecourts
- Yards and English Gardens (i.e. residential)
- Pocket Parks and Playgrounds
- Rooftop Gardens and Terraces
- Farmers Markets, Amphitheater, Outdoor Seating and Dining Terraces
- Infiltration Park and Parking Courts (permeable, multipurpose spaces)

**Street Design Standards**

The primary intent of the street design standards in the new NGTV District should be to create attractive,



engaging and pedestrian oriented streetscapes and open spaces; build strong and supportive relationships between streets and adjoining buildings and businesses; and to balance the needs and accessibility of vehicles, bicycles, and pedestrians. Thoroughfare design standards should be provided for primary streets, secondary streets, alleys, and pedestrian passages that may be added to the NGTV District over time.



*Private and Publicly Oriented Private Space (POPS) Examples – Pocket Park and Community Garden*

Key street design characteristics for the study area include the following:

**Balanced Modes of Transportation:** The reconfiguration of Westboro Road, Pine Street, and other streets in the NGTV District should be redesigned to improve walkability and pedestrian comfort, while balancing the need for efficient vehicle access and circulation.

**Curbing:** Minimized curb radii and curb extensions at intersections are effective techniques to calm traffic and provide a safer environment for pedestrians.

**Pedestrian Crossings:** Crosswalks should be installed

in key intersection and mid-block locations where informal pedestrian routes already exist in the NGTV District. Crosswalks should also be consistent in design treatments in terms of patterns, colors, materials, and signage.

**Travel Lanes:** Vehicular travel lane widths in the NGTV District should be 11 to 12 feet to calm traffic and provide more space in the public right-of-way for street trees, and pedestrian and bicycle amenities.

**Parking Lanes:** On-street parking configurations should be planned where appropriate. Parallel parking should be the standard within the ROW and possibly angled where public/private agreements can be reached for “street side” parking (see below). Parallel parking spaces should be a minimum of 7½ x 18’ to a maximum of 8½ x 22’ (property owner cooperation may be needed).

**Access:** To enhance the pedestrian environment and maximize the amount of on-street parking, which serves all businesses in the area, common driveways and internal access between adjoining lots should be allowed and highly encouraged. Curb cuts should be narrow (a maximum of 22 feet) and turning radius at corners should be narrow (between 15-25 degrees) to slow vehicles as they make turns.

**Sidewalks:** Sidewalks should be a minimum of five (5) feet wide on the NGTV District and concrete with raised granite curbing to provide separation between pedestrians and vehicles. They should include tree pits and brick inlays or other accent materials where sufficient width exists. Curb extensions should be installed at intersections where feasible to short the crossing distance for pedestrians, slow down turning vehicles, and provide opportunities for streetscape enhancements and activation on these wider spaces.

**Bike and Bus Facilities:** Bicycle lanes or sharrows should be installed on Westboro Road and Pine Street where appropriate to connect the NGTV District area and surrounding neighborhoods, Tufts, Centech Park and other nearby destinations. Bus shelters should be located at strategic locations along the WRTA route.

**Street Trees:** Public and private street frontages should contain a variety of street trees. Within the right-of-way (public frontage) street trees should be

generally located in a tree belt or tree pit within the sidewalk placed at the back of the curb. Deciduous, salt tolerant trees should be used and canopies should be pruned so that building signage and ground floor windows are visible from the street and sidewalk. Street trees within the right-of-way should be 40 to 60 feet on center. Where necessary, spacing should accommodate curb cuts, cross walks, fire hydrants and other infrastructure elements. Where possible, native species should be planted, and under no circumstances should any invasive species be planted.

**Street Lights and Fencing:** Pedestrian level, ornamental street lights should be installed along Westboro Road and Pine Street in the NGTV District. They should be 9-16 feet in height and aligned with the street trees at intervals of not more than 80 feet. Where necessary to screen parking or service areas, attractive and high quality opaque or semi-opaque fencing should be placed along the street line frontage.

**Active Street Space:** Streetscape standards should be adopted for the “Street Space” in the NGTV District, which is the area between the front façade of the primary building and the back of the curb. This includes street space within the public right-of-way, or “public frontage” as well as the “private frontage” within the adjacent building lot. This space should be dedicated to improving the pedestrian environment through various combinations of landscaping, hardscaping (i.e. seating terraces), street furniture and displays. Street furnishings should not obstruct the clear walkway, and should be simple, functional, and durable.

### **Sustainable Design and Development Performance Standards**

Sustainable Design and Low Impact Development (LID) techniques are highly recommended in the NGTV District to achieve low net energy consumption, reduce stormwater runoff and improve water quality, reduce vehicle miles traveled, reduce light pollution, and support healthy growth of street trees. Pervious surface materials (i.e. turf, groundcover, gravel, soil, or mulch) should be used for common open spaces and landscaped areas. Pervious paving materials allowing oxygen for tree roots and absorb stormwater run-off are also encouraged in parking lots and ball courts.

**Stormwater Management:** Stormwater best management practices should be employed to achieve pre-development hydrology through site design, site development, building design and landscape design techniques that infiltrate, filter, store, evaporate and detain stormwater close to its source.

**Canopy and Shade Trees:** The broad use of street and parking lot canopy trees in the NGTV District is a simple and attractive solution to improving the pedestrian environment and reducing heating and cooling needs for buildings and sites.

**Sustainable Landscaping and Open Space:** Natural landscaping with non-invasive plants native to local climate and soil conditions should be installed in open spaces. The Town should think of open spaces as part of the stormwater system. For example, an Infiltration Park is a form of bio-retention allowing rainwater to be temporarily captured and stored for a short time, cleaning storm water runoff before infiltration. Surrounding areas can be graded so that the rainwater flows towards the parks.

**Building Applications:** Buildings in the NGTV District should strive to achieve a zero net energy goal of 100% through best practices in design and construction practices such as governed by the Energy Star Program the U.S. Green Building Council LEED Rating System. Some sustainable building design techniques include the following:

- Solar orientation and utilization (thermal and solar photovoltaic).
- Natural cooling (glazing, shading of glazed surfaces, and operable windows).
- Daylighting (using natural light as the primary source of general illumination).
- Heat reflective roofs and pavement.
- Green walls and green blocks.
- Open and simple floor plans (i.e. square and cubes).
- Increased insulation (i.e. R-26 and triple-glazed windows).

- Groundsource heat exchange (closed system geothermal energy).
- Energy Star rated appliances.
- Dual-flush and waterless toilets.
- Greywater systems.
- EcoStar Program (shared recycling streams between businesses).

### Other Site Development and Design Standards

- Some additional general standards recommended for the NGTV District include the following:
- The primary building entry should be placed at the front of the building (facing the street line) and be clearly identifiable from the street.
- Parking should be placed at the side or rear of the lot. Where possible, break the parking areas up into groups of no more than 20 spaces per area separated by landscaping areas.
- Place as much of the building width at the front

of the lot as possible to maximize front façade exposure to the traveling public. The front facade should be kept parallel to the street.

- To reinforce the “street-edge”, align with adjacent buildings which are also close to the street line. Landscaping can also be used to reinforce this line.
- Link adjacent parking lots or provide shared parking areas which can serve neighboring buildings simultaneously and efficiently.
- Provide sidewalks for the full width of the property with a direct link to the primary building entry.
- Loading docks, service areas and trash facilities should be located at the rear of the building and not be visible from the street. Fences, walls or landscaping should be used to screen them from view.
- Existing, older trees should be incorporated into new site plan development whenever possible.
- Curb-cuts should be limited to a single driveway in and out of the property. Curb cuts should only be as wide as necessary to accommodate needed lanes. Curb radiuses should be kept to a minimum



*Driven by new stormwater standards established by US EPA, cities throughout the country are using creative ways to store and infiltrate rain water close to the source. With careful design, such areas can also serve to enhance the beauty and functionality of parking lots and pedestrian spaces.*

to minimize interruption in the sidewalk. Any raised curbing used at site access point should allow for sufficient stormwater infiltration.

- Landscaped islands and other green space should be used to break up impervious surfaces and shade parking plots.
- Provide a continuous landscape screen on property boundaries that abut residential zones.
- Using the area in front of the building for outdoor activity, seating and display is highly encouraged.
- Provide supplemental street trees where appropriate to shade the sidewalk or outdoor terraces while providing filtered views of the front façade by traveling motorists.

All design standards should strive to coordinate all the elements of the building envelope, open space, parking, and streetscape standards. This is critical to establishing a traditional pedestrian-oriented development pattern in the new NGTV District.

**N. GRAFTON TRANSIT VILLAGE PROPERTY INVENTORY & ANALYSIS 2017**






Parcel ID	St. No	Street	Zoning	Property Owner	Property Owner Address	Land Area (Acres)	Land Area (S.F.)	Street Frontage	Year Built	FY08 Total Value	FY13 Total Value	FY17 Bldg Value	FY17 Land Value	FY17 Total Value	Δ Total Value FY08-17	Land Use Code	Building Finished SF	Surrounding Zoning	Public Water	Public Sewer	Public Gas	Uses on Site
110/005.0-0000-0001.B	3	CENTENNIAL DRIVE	OLI, CDO	3 CENTENNIAL DRIVE LLC	BOSTON, MA	4.75	206,910	469.2	2002	\$ 1,673,400	\$ 2,086,700	\$ 3,051,800	\$ 527,300	\$ 3,579,100	\$ 1,905,700	402-OFFICE-BLDG	30,336	OLI	Yes	Yes	Yes	IDEXX Laboratories Office Building; 623 ft of front on Pine St
110/005.0-0000-0001.C	4	CENTENNIAL DRIVE	OLI, CDO	SSB REALTY LLC	BOSTON, MA	5.40	235,224	629.1		\$ 905,600	\$ 673,100		\$ 695,700	\$ 695,700	\$ (209,900)	440-IND-DEV-LAND		I, OLI	Yes	Yes	Yes	State Street Bank vacant parcel
110/005.0-0000-0001.D	8	CENTENNIAL DRIVE	OLI, CDO	SSB REALTY LLC	BOSTON, MA	1.80	78,408	772.6		\$ 301,900	\$ 171,800		\$ 177,500	\$ 177,500	\$ (124,400)	440-IND-DEV-LAND		OLI	Yes	Yes	Yes	State Street Bank vacant parcel along Centennial Dr
110/005.0-0000-0001.E	12	CENTENNIAL DRIVE	OLI, CDO	WORCESTER BUSINESS DEV. CORP	WORCESTER, MA	5.80	252,648	315.7		\$ 525,100	\$ 518,500		\$ 535,500	\$ 535,500	\$ 10,400	440-IND-DEV-LAND		I, OLI	Yes	Yes	Yes	Vacant Industrial Land off end of Centennial Dr
110/005.0-0000-0001.G	13	CENTENNIAL DRIVE	OLI, CDO	13 CENTENNIAL REALTY LLC	WORCESTER, MA	6.01	261,796	368.2	2003	\$ 1,056,700	\$ 2,379,000	\$ 2,084,900	\$ 373,800	\$ 2,458,700	\$ 1,402,000	340-GEN-OFFICE	15,396	OLI	Yes	Yes	Yes	Autism Behavioral Services
110/005.0-0000-0001.A	15	CENTENNIAL DRIVE	OLI, CDO	CENTECH ASSOC., LLC	AVON, CT	14.48	630,749	264.9	2002	\$ 2,557,300	\$ 4,896,400	\$ 1,257,000	\$ 4,074,300	\$ 5,331,300	\$ 2,774,000	400-MANUFACTURNG	74,797	I, OLI	Yes	Yes	Yes	Verrillon Telecommunications Equipment Manufacturer
110/020.0-0000-0022.0	71 Rear	EAST STREET	R2	GRAFTON TOWN OF	SAME	25.39	1,105,988	0.0		\$ 199,100			\$ 199,100	\$ 199,100	\$ -	930 - TOWN LAND		R2				Town Conservation-Rec Land near N.G. Elementary School
110/020.0-0000-0023.0	81 Rear	EAST STREET	R2	GRAFTON TOWN OF	SAME	10.50	457,380	0.0		\$ 82,400			\$ 82,400	\$ 82,400	\$ -	930 - TOWN LAND		R2				Town Conservation-Rec Land near N.G. Elementary School
110/021.0-0000-0001.E	33	INSTITUTE ROAD	R2	MASS COMMONWEALTH DYS and DOL	BOSTON, MA	2.74	119,354	921.0		\$ 341,200			\$ 348,200	\$ 348,200	\$ 7,000	922-DYS-COR-NR		R2, R4, R8, OLI	Yes	Yes	No	Open parcel at corner of Institute Road and East Street
110/021.0-0000-0001.D	42	INSTITUTE ROAD	OLI, R2, R4	MASS COMMONWEALTH DYS and DOL	BOSTON, MA	81.27	3,540,121	1927.9	1930	\$ 2,985,500	\$ 3,264,000	\$ 1,866,900	\$ 1,913,400	\$ 3,780,300	\$ 794,800	922-DYS-COR-NR	41,272	R2, R4, R8, OLI	Yes	Yes	No	DEM Environmental Police off Rt 30; Mass DYS and DOL Key Program and Campus; 11 primary buildings; Approx 3,665 linear feet of frontage Institute Road
110/005.0-0000-0001.0	4	MILLENNIUM DRIVE	OLI, CDO	WORCESTER BUSINESS DEV. CORP	WORCESTER, MA	19.31	841,144	1370.3		\$ 42,100	\$ 42,100		\$ 16,800	\$ 16,800	\$ (25,300)	441-IND-PDV-LAND		I, OLI	Yes	Yes	Yes	Vacant Industrial Land; 427 ft frontage on Centennial Dr
110/005.0-0000-0001.H	5	MILLENNIUM DRIVE	OLI, CDO	WORCESTER BUSINESS DEV. CORP	WORCESTER, MA	9.50	413,820	790.1		\$ 554,100	\$ 547,500		\$ 564,500	\$ 564,500	\$ 10,400	440-IND-DEV-LAND		OLI	Yes	Yes	Yes	Vacant Industrial Land Behind MBTA parking lot
110/005.0-0000-0001.J	8	MILLENNIUM DRIVE	OLI, CDO	85 GREEN ST. LIMITED PARTNERSHIP	WORCESTER, MA	10.61	462,172	100.0		\$ 882,500	\$ 556,300		\$ 316,500	\$ 316,500	\$ (566,000)	440-IND-DEV-LAND		OLI	Yes	Yes	Yes	Vacant Industrial Land
110/005.0-0000-0001.I	9	MILLENNIUM DRIVE	OLI, CDO	MICKELSON J., JDM MILLENNIUM R.T.	SAME	7.47	325,393	100.0	2003	\$ 983,100	\$ 1,994,600	\$ 1,769,200	\$ 466,900	\$ 2,236,100	\$ 1,253,000	400-MANUFACTURNG	24,955	OLI	Yes	Yes	Yes	Primary Colors Plastic Fabrication
110/005.0-0000-0002.0	1	PINE STREET	OLI, CDO	MASS COMMONWEALTH MBTA	BOSTON, MA	5.25	228,690	185.5		\$ 1,291,100	\$ 1,362,500	\$ 949,600	\$ 367,900	\$ 1,317,500	\$ 26,400	928-DCAM-BSOB-NR	-	OLI	Yes	No	No	N. Grafton MBTA Commuter Rail Station and Parking Lot
110/005.0-0000-0004.0	100	PINE STREET	R4	MASS COMMONWEALTH DYS and DOL	BOSTON, MA	49.29	2,147,072	1885.1	1906	\$11,365,600	\$13,768,200	\$17,739,100	\$ 1,815,800	\$ 19,554,900	\$ 8,189,300	922-DYS-COR-NR	340,328	I, OLI	Yes	Yes	No	Job Corps Campus; 19 buidings
110/012.0-0000-0013.0	82	WESTBORO ROAD	OLI	FLOOD DAVID A, TAYLOR SHARON L	SAME	0.97	42,253	142.5	1920	\$ 295,200	\$ 259,500	\$ 165,400	\$ 89,200	\$ 254,600	\$ (40,600)	101-SNGL-FAM-RES	1,724	R2, OLI	Yes	Yes	Yes	Single Family Home
110/012.0-0000-0015.B	83	WESTBORO ROAD	I	N.E. POWER CO, PROP. TAX DEPT	WALTHAM, MA	3.00	130,680	0.0		\$ 137,300	\$ 57,100		\$ 58,500	\$ 58,500	\$ (78,800)	423-ELEC-EASEMNT		R2, I, OLI	Yes	No	Yes	New England Power; Power line easement bisects property
110/012.0-0000-0016.0	84	WESTBORO ROAD	OLI	BELL ROY E II, ROY CLAIRE H	SAME	1.14	49,658	50.0	1975	\$ 273,700	\$ 246,500	\$ 130,300	\$ 90,500	\$ 220,800	\$ (52,900)	101-SNGL-FAM-RES	1,056	R2, OLI	Yes	Yes	No	Single Family Home
110/012.0-0000-0012.A	86	WESTBORO ROAD	OLI	POLSELLI MARIO J	SAME	0.92	40,075	175.1	1950	\$ 325,200	\$ 262,500	\$ 213,600	\$ 102,200	\$ 315,800	\$ (9,400)	104-TWO-FAM-RES	2,980	R2, OLI	Yes	Yes	Yes	Dana Transportation Inc. and Duplex
110/012.0-0000-0011.0	93	WESTBORO ROAD	OLI	MAGNANT SETH	GRAFTON, MA	0.15	6,534	131.3	1950	\$ 217,000	\$ 174,300	\$ 142,000	\$ 76,300	\$ 218,300	\$ 1,300	101-SNGL-FAM-RES	1,440	I, OLI	Yes	No	No	Single Family home on small lot
110/012.0-0000-0010.0	95	WESTBORO ROAD	OLI	SHAUGHNESSY JOSEPH	SAME	0.16	6,970	87.5	1950	\$ 183,500	\$ 142,700	\$ 81,400	\$ 78,000	\$ 159,400	\$ (24,100)	101-SNGL-FAM-RES	660	I, OLI	Yes	No	No	Single Family home on small lot
110/012.0-0000-0009.0	97	WESTBORO ROAD	OLI	LAHAIR NANCY M	SAME	0.14	6,098	90.0	1950	\$ 181,900	\$ 141,200	\$ 71,300	\$ 75,800	\$ 147,100	\$ (34,800)	101-SNGL-FAM-RES	762	I, OLI	Yes	No	No	Single Family home on small lot
110/012.0-0000-0022.0	100	WESTBORO ROAD	OLI	D & F AFONSO BUILDERS INC	MILFORD, MA	48.90	2,130,084	513.3		\$ 1,851,800	\$ 1,153,600	\$ -	\$ 821,000	\$ 821,000	\$ (1,030,800)	130-RES-DEV-LAND		R2, OLI, NB	Yes	No	No	Developable land with 48-lot subdivision pending
110/012.0-0000-0015.0	105	WESTBORO ROAD	I	RUSHWAN BROTHERS INC	WORCESTER, MA	96.00	4,181,760	0.0		\$ 912,600	\$ 877,700	\$ -	\$ 752,700	\$ 752,700	\$ (159,900)	440-IND-DEV-LAND		R2, I, OLI	Yes	No	No	Ruswan Bros Industrial Property
110/012.0-0000-0008.0	107	WESTBORO ROAD	OLI	PIIRAINEN ANDREW	ROY, UT	0.38	16,553	100.0	1935	\$ 254,300	\$ 205,800	\$ 65,600	\$ 91,200	\$ 156,800	\$ (97,500)	101-SNGL-FAM-RES	1,024	I, OLI	Yes	No	No	Single Family Home
110/012.0-0000-0007.0	109	WESTBORO ROAD	OLI	SMALL JOHN W	SAME	0.78	33,977	189.0	1924	\$ 283,700	\$ 221,900	\$ 129,500	\$ 100,300	\$ 229,800	\$ (53,900)	101-SNGL-FAM-RES	1,155	I, OLI	Yes	No	No	Single Family Home
110/012.0-0000-0005.0	111	WESTBORO ROAD	OLI	BODIAN ELLIOT	SAME	0.43	18,731	85.0	1963	\$ 281,700	\$ 212,000	\$ 127,900	\$ 92,200	\$ 220,100	\$ (61,600)	101-SNGL-FAM-RES	1,060	I, OLI	Yes	No	No	Single Family Home
110/012.0-0000-0006.0	113	WESTBORO ROAD	OLI	KNAPIK THEODORE, SUZANNE	MOULTONBOROU	1.02	44,431	170.0	1982	\$ 343,600	\$ 293,400	\$ 250,200	\$ 102,900	\$ 353,100	\$ 9,500	111-4-8-UNIT-APT	5,880	I, OLI	Yes	No	No	Apartment building
110/012.0-0000-0002.0	117	WESTBORO ROAD	OLI	RUSHWAN BROTHERS INC	WORCESTER, MA	0.68	29,621	100.0		\$ 166,800	\$ 135,500		\$ 5,300	\$ 5,300	\$ (161,500)	130-RES-DEV-LAND		I, OLI	Yes	No	No	Vacant parcel; possible access to industrial lands

Parcel ID	St. No	Street	Zoning	Property Owner	Property Owner Address	Land Area (Acres)	Land Area (S.F.)	Street Frontage	Year Built	FY08 Total Value	FY13 Total Value	FY17 Bldg Value	FY17 Land Value	FY17 Total Value	Δ Total Value FY08-17	Land Use Code	Building Finished SF	Surrounding Zoning	Public Water	Public Sewer	Public Gas	Uses on Site
110/012.0-0000-0021.0	120	WESTBORO ROAD	OLI	MASS COMMONWEALTH DMH / DMR	BOSTON, MA	2.00	87,120	300.0	1960	\$ 440,300	\$ 448,100	\$ 254,300	\$ 223,700	\$ 478,000	\$ 37,700	914 - STATE/DMR DMR	3,732	OLI	Yes	No	No	State DMH Buildings used by DEM
110/012.0-0000-0001.0	121	WESTBORO ROAD	OLI	BLUE WATER DEVELOPMENT LLC	SAME	6.32	275,299	1017.3	2000	\$ 314,900	\$ 643,500	\$ 473,600	\$ 212,900	\$ 686,500	\$ 371,600	400-MANUFACTURNG	10,000	I, OLI, NB, R8	Yes	No	No	Sunshine Sign Company
110/012.0-0000-0020.0	122	WESTBORO ROAD	OLI	MASS COMMONWEALTH DMH / DMR	BOSTON, MA	2.00	87,120	281.5	1950	\$ 330,700	\$ 505,700	\$ 223,600	\$ 335,800	\$ 559,400	\$ 228,700	914 - STATE/DMR DMR	2,816	OLI, NB	Yes	No	No	State DMH Buildings used by DYS
110/012.0-0000-0017.0	131	WESTBORO ROAD	OLI	BACHAND W., BACHAND FAMILY TRUST	MILLBURY, MA	1.10	47,916	250.7	1987	\$ 553,300	\$ 537,100	\$ 512,000	\$ 103,600	\$ 615,600	\$ 62,300	111-4-8-UNIT-APT	9,520	I, OLI, NB	Yes	No	No	Apartment building
110/013.0-0000-0002.0	135	WESTBORO ROAD	OLI	GRAFTON ISHTAR LLC	N. GRAFTON	1.08	47,045	217.0	1920	\$ 559,000	\$ 523,200	\$ 401,200	\$ 171,800	\$ 573,000	\$ 14,000	323-SH-CNTR/MALL	13,533	I, OLI, NB, R8	Yes	No	No	Grafton Crossing Plaza: Perro Shotokan Karate; Pecorino - Artisanal Cheeses and Fine Wine; T Station Pizza; Holy Cow Ice Cream; Fore Seasons Mini Golf
110/013.0-0000-0010.0	136	WESTBORO ROAD	OLI	MASS COMMONWEALTH DCAMM	BOSTON, MA	1.00	43,560	100.0	1960	\$ 381,400		\$ 284,400	\$ 97,200	\$ 381,600	\$ 200	928-DCAM-BSOB-NR	3,832	R2, OLI, CDO	Yes	No	No	State Building used by DEM
110/013.0-0000-0003.0	137	WESTBORO ROAD	OLI	RENZI ANNE	OXFORD, MA	0.50	21,780	113.7	1915	\$ 285,300	\$ 286,100	\$ 181,600	\$ 94,100	\$ 275,700	\$ (9,600)	013-MULTIUSE-RES	3,668	OLI, NB	Yes	No	No	Small mixed use building/SF home and comm office (1,12 SF built 1935)
110/013.0-0000-0001.0	139	WESTBORO ROAD	OLI	WINDOW LOGIC GEN. CONTRACTORS	N. GRAFTON	0.56	24,394	139.0	1961	\$ 269,400	\$ 209,000	\$ 138,800	\$ 93,700	\$ 232,500	\$ (36,900)	101-SNGL-FAM-RES	1,197	OLI, NB	Yes	No	No	Single Family Home/Window Logic Office
110/013.0-0000-0004.0	141	WESTBORO ROAD	OLI	WINDOW LOGIC GEN. CONTRACTORS	N. GRAFTON	0.62	27,007	398.9		\$ 89,300	\$ 8,700		\$ 4,900	\$ 4,900	\$ (84,400)	131-RES-PDV-LAND		OLI, NB	Yes	No	No	Window Logic lot - Vacant land
110/021.0-0000-0001.A	200	WESTBORO ROAD	OLI, CDO	TUFTS UNIVERSITY TRUSTEES	MEDFORD, MA	371.55	16,184,718		1890	\$32,979,000	\$42,256,200	\$34,663,800	\$ 9,720,300	\$ 44,384,100	\$11,405,100	942 - COLLEGE/UNIV	358,080	OLI, NB, R4	Yes	Yes	No	Tufts Veterinary School Campus; Grafton Science Park; All other fields and facilities
110/004.0-0000-0001.0	105 Rear	WESTBORO ROAD	OLI	GRAFTON TOWN OF	SAME	0.85	37,026	0.0		\$ 6,600	\$ 5,500		\$ 6,600	\$ 6,600	\$ -	936 - TOWN VACANT		I, OLI	Yes	No	No	Town Land between WBDC and Rushwan
110/012.0-0000-0015.A	81 Rear	WESTBORO ROAD	R2	GRAFTON TOWN OF	SAME	22.00	958,320	0.0		\$ 172,500	\$ 306,700	\$ -	\$ 172,500	\$ 172,500	\$ -	930 - TOWN LAND		R2, I, OLI	Yes	No	Yes	Town Conservation Property
110/012.0-0000-0012.0	88A	WESTBORO ROAD	OLI	EQUIP. CARE CTR OF GRAFTON LLC	SAME	13.30	579,348	297.0	1959	\$ 990,100	\$ 1,063,700	\$ 812,600	\$ 365,600	\$ 1,178,200	\$ 188,100	330-TRANSIT-WHSE	15,760	R2, OLI	Yes	Yes	Yes	Dana Trans/Equipment Care of Grafton; Primary Building
110/012.0-0000-0012.0	88B	WESTBORO ROAD	OLI	EQUIP. CARE CTR OF GRAFTON LLC	SAME			0.0	1959						\$ -	302-IND-R/E-MEZZ	1,200	R2, OLI	Yes	Yes	Yes	Dana Trans/Equipment Care of Grafton; Secondary Bldg 1
110/012.0-0000-0012.0	88C	WESTBORO ROAD	OLI	EQUIP. CARE CTR OF GRAFTON LLC	SAME			0.0	1959						\$ -	330-TRANSIT-WHSE	2,464	R2, OLI	Yes	Yes	Yes	Dana Trans/Equipment Care of Grafton; Secondary Bldg 2
110/022.0-0000-0021.0	25	WILLARD STREET	R4	GRAFTON TOWN OF	SAME	17.45	760,122	0.0			\$ 243,200				\$ -	936 - TOWN VACANT		OLI, R4	No	No	No	Axtell Forest on Tufts Campus


<b>TOTAL</b>	<b>44</b>	<b>854.57</b>	<b>15,048</b>	<b>\$68,826,800</b>	<b>\$83,681,100</b>	<b>\$68,041,600</b>	<b>\$ 26,614,400</b>	<b>\$ 94,656,000</b>	<b>\$25,829,200</b>	<b>970,627</b>	
<b>AVERAGE</b>		<b>19.42</b>	<b>846,024</b>	<b>1956</b>	<b>\$ 1,600,623</b>	<b>\$ 2,092,028</b>	<b>\$ 2,268,053</b>	<b>\$ 618,940</b>	<b>\$ 2,201,302</b>	<b>\$ 561,504</b>	<b>33,470</b>

## GRAFTON VISUAL PREFERENCE SURVEY

SITE AMENITIES AND ACCESSORY USES					
No.	Image	Green	Yellow	Red	Score
1		2	1	0	5
2		3	0	1	4
3		2	1	0	5
4		3	1	0	7
5		2	1	0	5

6		2	2	2	<b>2</b>
7		2	2	0	<b>6</b>
8		2	1	1	<b>3</b>
9		0	1	3	<b>-5</b>
10		6	0	0	<b>12</b>









11		4	1	0	9
12		4	0	3	2

## GRAFTON VISUAL PREFERENCE SURVEY

BUILDINGS					
No.	Image	Green	Yellow	Red	Score
1		2	2	0	6
2		1	1	0	3
3		1	2	1	2
4		0	2	0	2
5		0	0	6	-12
6		1	0	6	-10

7		3	1	0	7
8		0	2	1	0
9		3	1	1	5
10		2	2	1	4
11		4	0	0	8
12		0	2	2	-2
13		2	2	0	6
14		3	0	7	-8









15		2	2	3	0
16		3	0	0	6
17		2	2	1	4
18		0	4	0	4
19		3	1	0	7
20		3	0	0	6
21		2	3	3	1
22		4	2	0	10

23		0	4	1	<b>2</b>
24		3	0	0	<b>6</b>
25		0	0	5	<b>-10</b>
26		3	1	2	<b>3</b>
27		1	2	3	<b>-2</b>
28		0	1	3	<b>-5</b>

## GRAFTON VISUAL PREFERENCE SURVEY

STREETSCAPES					
No.	Image	Green	Yellow	Red	Score
1		2	2	0	6
2		5	0	0	10
3		3	0	0	6
4		3	0	0	6
5		8	0	0	16
6		3	0	0	6

7		5	0	0	<b>10</b>
8		3	1	0	<b>7</b>
9		1	1	0	<b>3</b>
10		0	2	0	<b>2</b>
11		2	0	0	<b>4</b>
12		4	0	0	<b>8</b>
13		0	4	3	<b>-2</b>

14		0	3	3	<b>-3</b>
15		6	0	0	<b>12</b>
16		3	0	0	<b>6</b>
17		3	1	0	<b>7</b>
18		4	0	0	<b>8</b>
19		3	2	0	<b>8</b>
20		4	0	0	<b>8</b>
21		7	0	0	<b>14</b>



22		5	0	0	<b>10</b>
23		3	1	1	<b>5</b>
24		3	1	0	<b>7</b>
25		1	2	2	<b>0</b>
26		2	0	1	<b>2</b>