

Executive Summary

Vanasse Hangen Brustlin, Inc. (VHB) has been retained by the Town to conduct this study by evaluating land use alternatives for the Golden Triangle area (a 135 acre parcel of land that falls within the Elm Street/ I-95 corridor) that meet the goals of the Town Master Plan. As part of this process, an extensive transportation, and environmental data collection effort was undertaken to provide a base from which the anticipated impacts from various development proposals can be compared. From this base condition, a future planning year of 2016 was chosen to analyze conditions both with and without the potential development of the Golden Triangle. An assessment of the transportation corridors and modes related to potential development of the Golden Triangle was conducted to allow the Town to make informed decisions on maximizing the development potential and the economic base of the Town while minimizing transportation impacts on the surrounding community.

The study area for this assessment is shown in Figure ES-1. It generally encompasses Route 110 and Elm Street between I-495 and I-95 and includes the interchange ramp junctions with Route 110. The parcel extends to the north into Salisbury to the I-95/I-495 interchange; encompassing approximately 135 acres.

Methodology

To determine what types and sizes of development could be located on this parcel, a maximum build-out scenario needed to be established. In early 2006, the Town of Amesbury was presented with a proposed development program for the Golden Triangle by a private developer who was interested in developing the parcel. This program consisted of 407,000 square feet of retail development and 113,000 square feet of office development. This development program was of a magnitude that appealed to Town officials. Therefore, it was determined that this development program would be the maximum potential development for this site.

This study's objective is to evaluate the environmental, land use, and transportation impacts associated with a development of this type and size, determine what roadway and traffic improvements would be needed to mitigate transportation impacts, and determine whether the mitigation program would be palatable for interested developers. If the mitigation was not considered cost effective or if the impacts were so great that they could not be mitigated, the objective is then to determine potential development types and sizes that might be accommodated with reasonable mitigation and acceptable impacts.



I-95

I-95

Golden Triangle

Route 110

I-95 Exit 58

- 495 Exit 55

MAIN

OLD ELM STREET

BILL STREET

CLARKES ROAD

ANDREWS STREET

LAURENCE STREET

RIVER STREET

ROCKHILL ROAD

LAKEVIEW STREET EXT

GOSS AVENUE

ELM STREET

BAY STREET

MARSTON STREET

WINDY STREET

ALBION STREET
CONGRESS STREET
MADISON STREET

HUNTINGTON AVENUE
PEARL STREET
COLLINS AVENUE

MUNroe STREET
AMIDON AVENUE

COTE COURT



Environmental Constraints

The first step VHB completed in determining development opportunities for the Golden Triangle was to review the site's environmental properties, with the intent of creating a development that minimizes impacts to environmentally sensitive areas, and therefore can be permitted. The resources areas within the Golden Triangle can be defined as wetlands and rare species habitat. As part of this initial environmental assessment, VHB delineated wetland boundaries using available data provided by the current property owner, and field verifying wetland boundaries. Based on these efforts by VHB Wetland Scientists, it was determined that 53 acres of the 135 acre site contain wetlands and 3 acres contain rare species habitat.

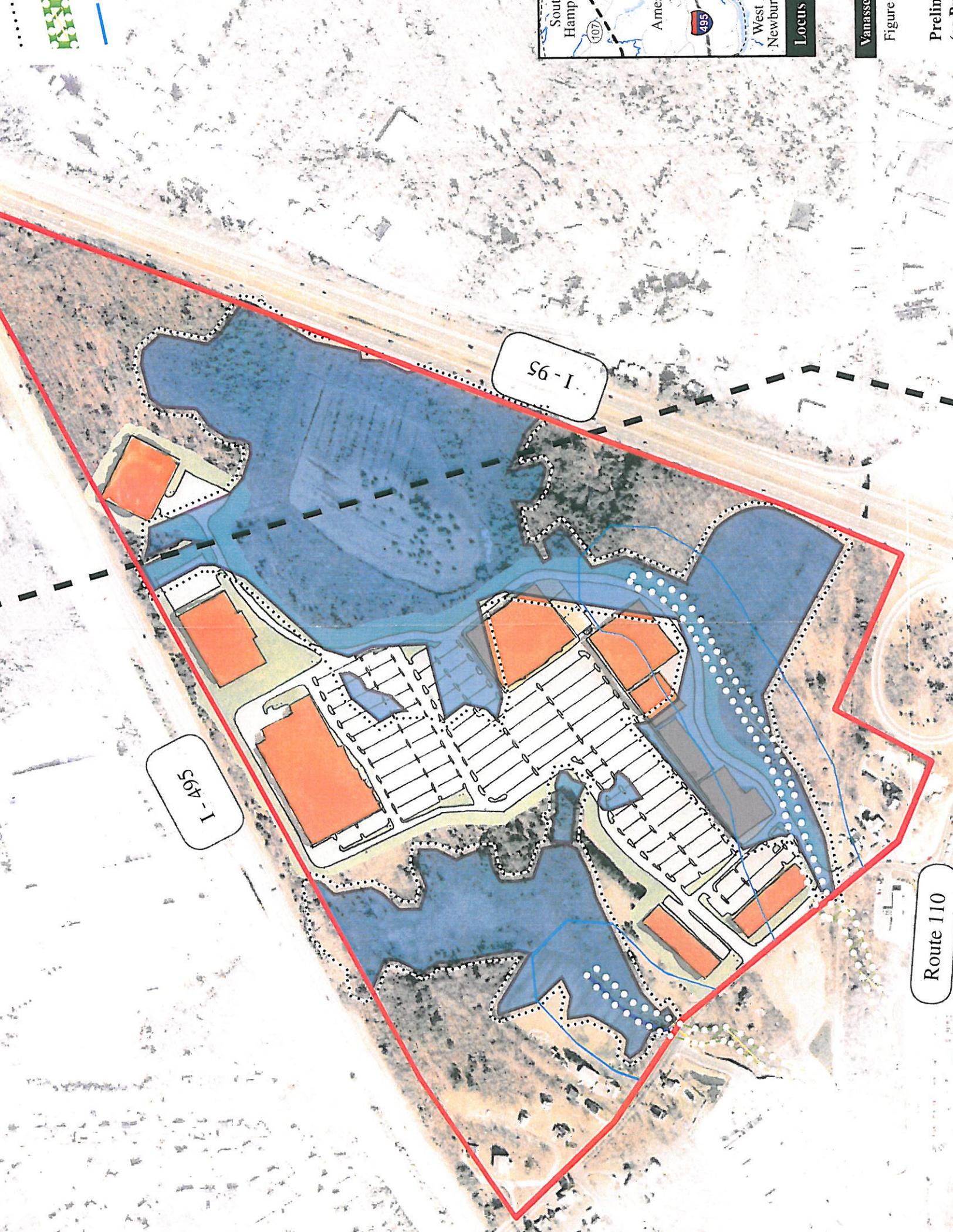
The maximum build-out development plan provided to the Town in 2006 used what appear to be the wetland boundary lines from the Massachusetts GIS database, which was substantially less than VHB's in-field observations. Due to the variation in the wetland resource boundary lines, the wetland impacts associated with the maximum build-out scenario were re-evaluated to determine if the original development program could be permitted. The wetland and rare species habitat boundaries established by VHB were superimposed on this development to determine the environmental impacts associated with this build-out (Figure ES-2). Based on the magnitude of current wetland areas and rare species habitat, it is unlikely a development of this scale could be permitted.

Potential Developable Land Area

Since the findings of the environmental analysis indicate that impacts associated with the previously proposed maximum build-out are too great to be permitted, a land area analysis was completed to determine the potential developable area of the site. This determination was made by dividing the Golden Triangle into separate developable parcels. Each parcel represents the maximum land area that could be developed without impacts to adjacent wetland resource areas. These parcels were established by creating setback boundaries around wetland areas. The boundaries were determined based on the actual wetland delineations conducted on site and correspond to three levels of interpretation of state and the Town of Amesbury's Wetland By-laws, as described below.

Alternative 1

Alternative 1 is based on the strictest interpretation of the Town of Amesbury's wetland protection bylaw and is shown graphically in Figure ES-3. The bylaw stipulates that a no build zone exist within 100 feet of wetland areas unless otherwise approved by the conservation commission. In its strictest interpretation, it is assumed that the conservation commission would not grant approval if construction



S6-1

I-495

Route 110

South Hampton Amesbury West Newbury
107 495
Locus

Vanasse
Figure
Prelim

occurred within 100 feet of a wetland. Since this bylaw is more stringent than the Commonwealth's it is considered the governing bylaw. The intent of this alternative is only to illustrate how the development potential of the Golden Triangle changes if a 100-foot wetland setback was enforced.

As shown in Figure ES-3, if no waiver of the Town bylaw is granted, development could occur on 46 acres (out of a potential 79 acres) of the Golden Triangle. The 46 acres are a compilation of six smaller parcels that are divided by wetland, riverfront, and rare species habitat buffers. Three of the parcels (labeled 2A, 3, and 4), accounting for 28 acres, are land locked with no access possibilities from Elm Street or other parcels on the site unless wetlands are disturbed and wetland crossings constructed.



Alternative 2

Alternative 2 is based on the Massachusetts Wetland Protection Act (MWPA), and is shown on Figure ES-4. This act stipulates a no impact zone within 50-feet of wetland areas.

As shown in Figure ES-4, if a waiver of the Town of Amesbury's bylaw is granted and the MWPA's 50-foot wetland buffer is imposed, development could occur on approximately 60 acres (out of a potential 79 acres) of the Golden Triangle. Reducing the wetland setback to 50 feet allows the parcels previously labeled 2A and 2B to be combined (now parcel 2). This not only adds to the total area available, but also eliminates the previously defined land locked parcel 2A without impacts to wetlands.

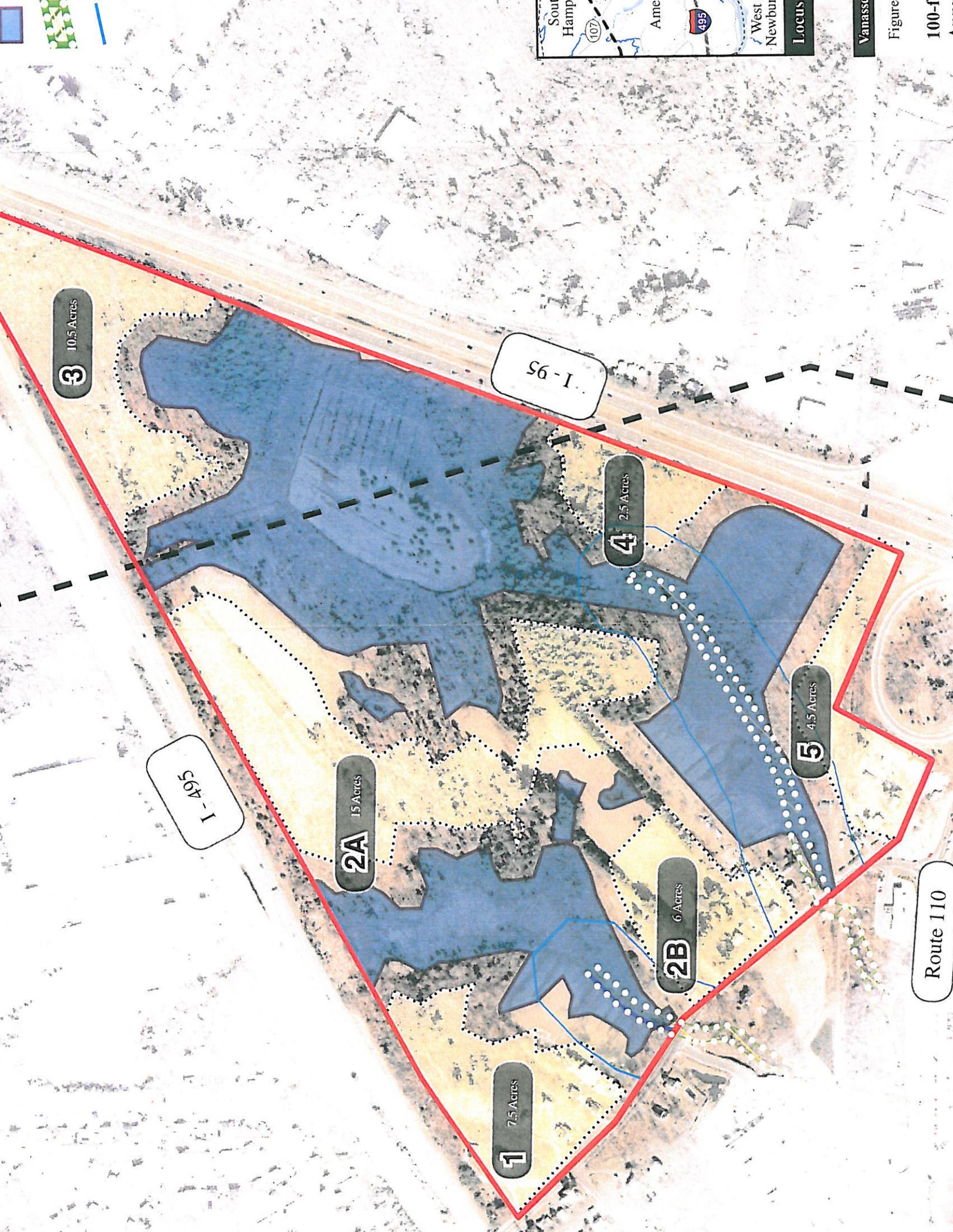
Under Alternative 2, only parcels 3 and 4 remain land locked. These parcels would not be accessible without impacts to wetlands and construction of wetland crossings.



Alternative 3

Alternative 3, shown in Figure ES-5, considers a 25-foot wetland setback based on a reasonable assessment of field conditions. This alternative was developed in cooperation with the Town's Conservation Commission agent, who indicated that a 25-foot setback from all environmentally sensitive areas could be considered for the Golden Triangle.

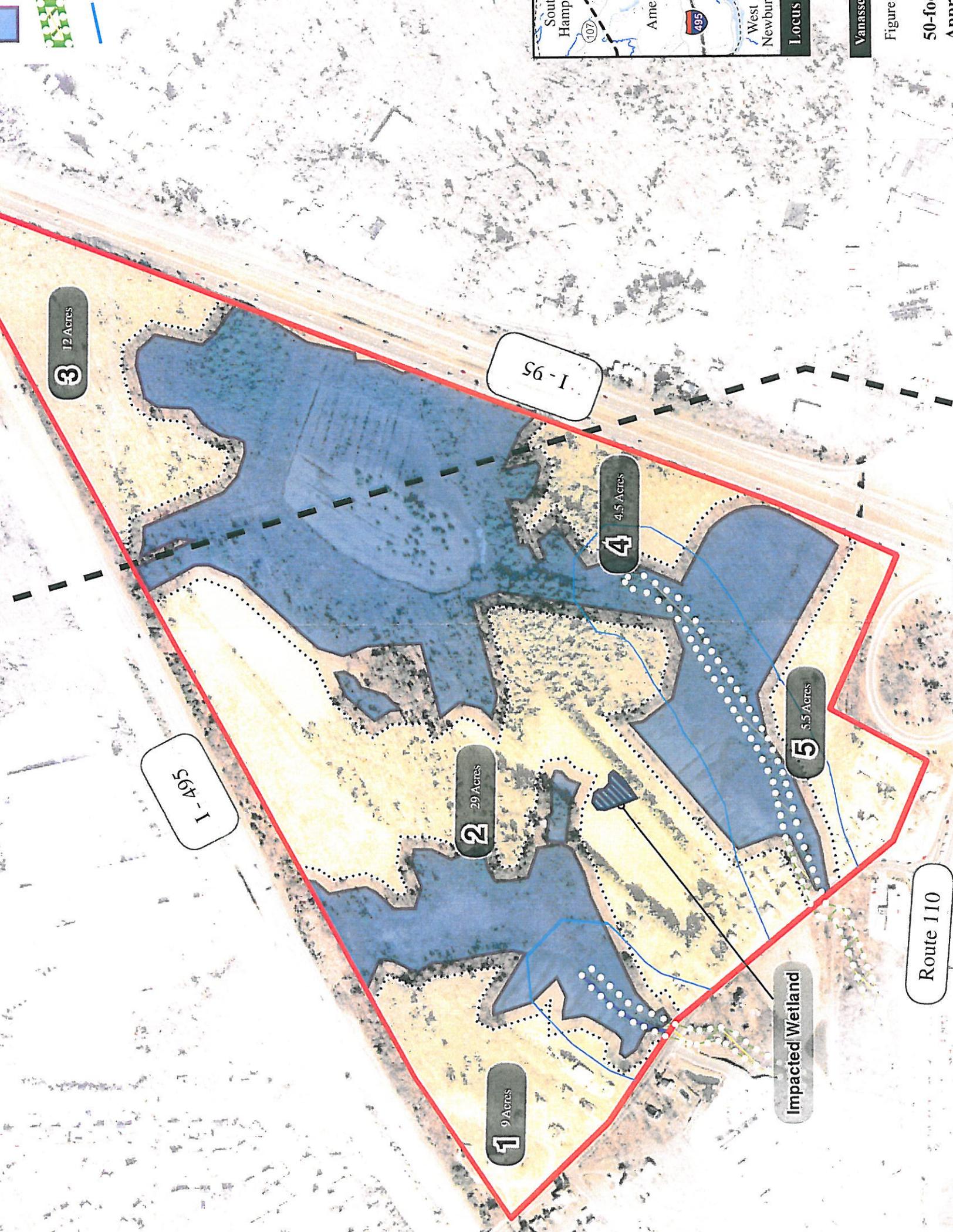
As shown in Figure ES-5, the 25-foot setback allows about 73 acres (out of a potential 79 acres) of the Golden Triangle to be developed. As with Alternative 2, a waiver of the Town bylaw allows the parcels in the center of the Golden Triangle to be combined. Under Alternative 3, only parcels 3 and 4 remain land locked. These parcels would not be accessible by automobile without impacts to wetlands.

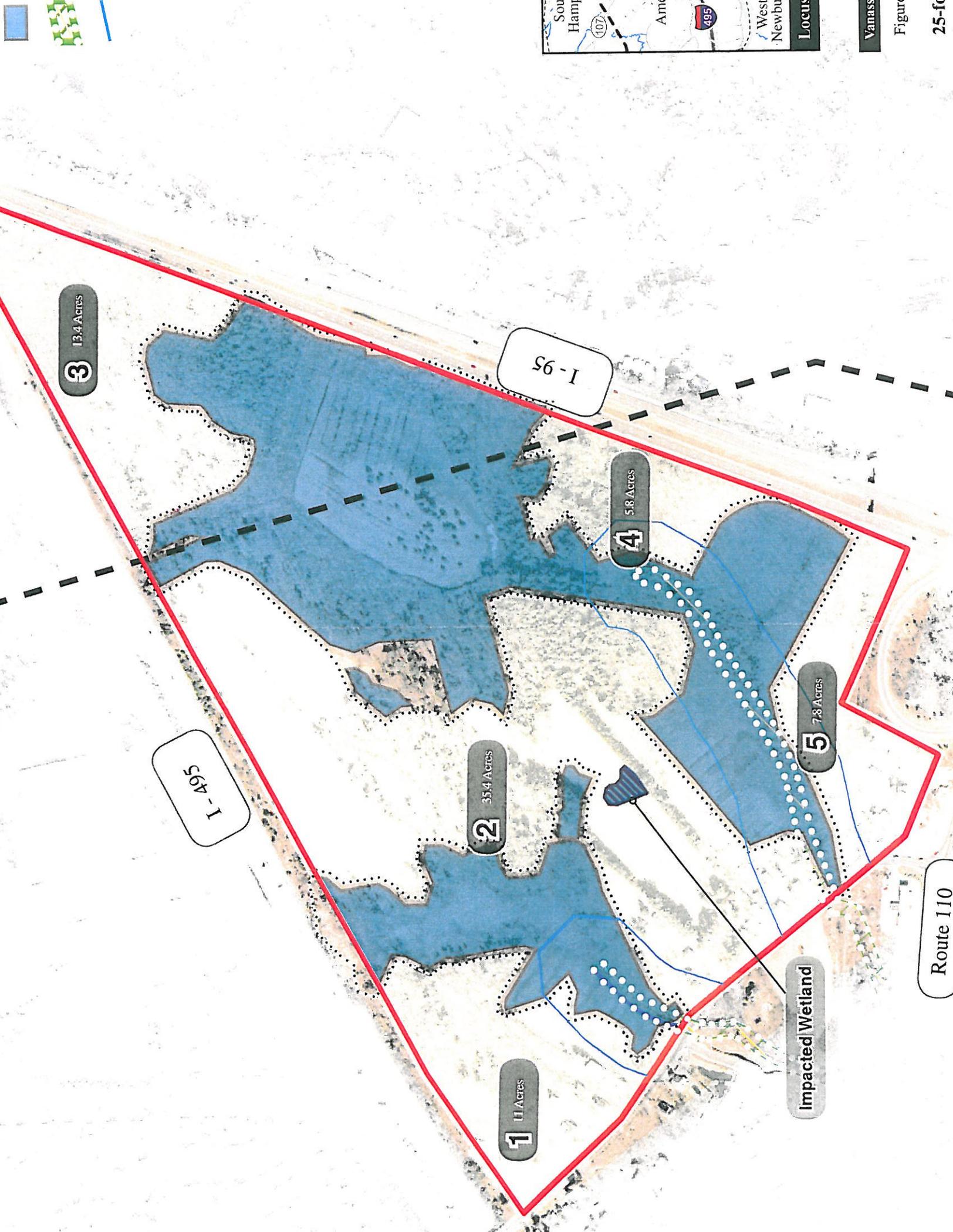


56-1

1-495

Route 110





3 13.4 Acres

I-95

4 5.8 Acres

I-495

2 35.4 Acres

5 7.8 Acres

1 11 Acres

Impacted Wetland

Route 110



As explained in Chapter 4, the land use analysis indicates that Alternative 3 represents the most reasonable approach to developing the Golden Triangle. Under this alternative, there are a number of development options that could be considered. Therefore Alternative 3 (in combination with the preliminary traffic analysis completed for the proposal submitted to the Town), was used to assess the transportation impacts that could occur if development was realized.

The transportation impacts associated with each of the scenarios are summarized below and detailed in Chapters 4 and 5.

Summary of Transportation Impacts

As part of the study process, an extensive traffic data collection program was undertaken to provide a base condition from which impacts can be compared. From this base condition, a future planning year of 2016 was chosen to analyze transportation conditions both with and without the development of the Golden Triangle. An assessment of transportation-related development impacts was conducted to allow the Town to make informed decisions on maximizing the development potential of the site and the economic base of the Town while minimizing transportation impacts on the surrounding community.

Transportation

As discussed in Chapter 3, a proponent has approached the Town with a preliminary plan for a development containing 407,000 square feet of retail and 113,000 square feet of office space. Transportation mitigation requirements needed to support this development involve substantial improvement to both the local and regional roadway infrastructure. Due to the permitting process requirements and magnitude of improvement costs, this development would not be cost effective for a proponent to undertake.

To determine a development program that is more reasonable than the preliminary plan, an iterative process was used to assess transportation impacts to Route 110 and the I-95 and I-495 ramps at Rte 110. As part of this iterative process, the initially proposed office space was eliminated and the initially proposed retail space within the development was reduced until it was no longer necessary to widen Route 110 beyond the currently planned four-lanes. The size of the development that could be accommodated with a four-lane Route 110 was then compared to the Alternative 3 land use assessment to ensure that it could be constructed within the environmental constraints on the site. Considering the objective of this study, the preferred build-out scenario identified consists of 134,000 square feet of retail use and 203 residential



units. A land site plan rendering of a potential layout for this site is provided in Figure ES-6.

Transportation Mitigation

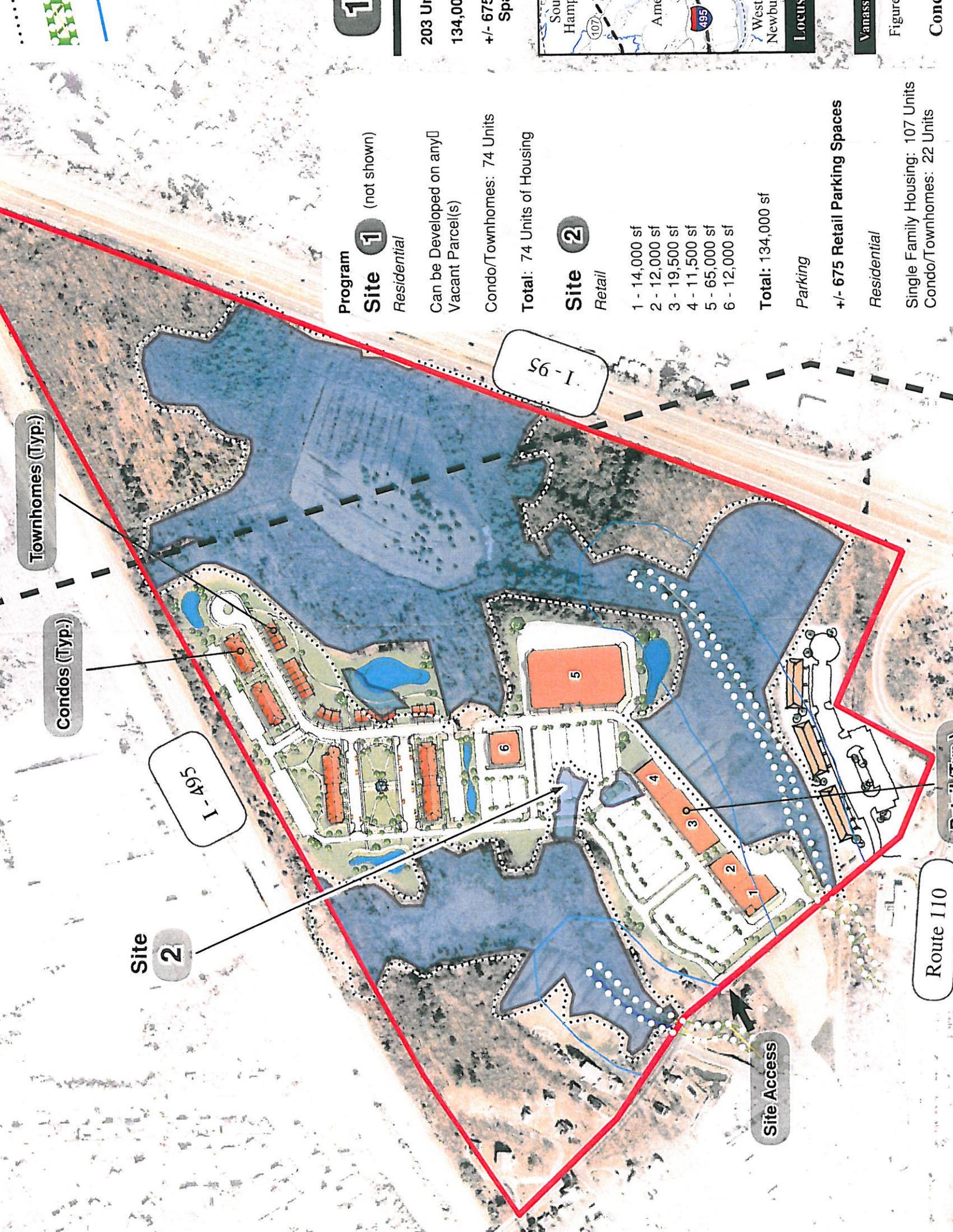
Based on the transportation assessment, the improvement program necessary to mitigate the transportation impacts of the preferred build-out scenario consists of the following measures:

- Signalization of three study area intersections:
 - Route 110 at I-495 northbound off-ramp;
 - Route 110 at all I-95 off Ramps (with queue detection); and
 - Elm Street and Site Driveway.
- Geometric changes along several sections of the corridor:
 - Elm Street from the future site driveway (location to be determined) to Route 110 would be widened to provide two lanes in each direction (based on the ultimate location of the site driveway, Elm Street may need to be widened from Route 110 to Rocky Hill Road);
 - Elm Street would be widened at its intersection with Route 110 to provide two exclusive left-turn lanes from Elm Street onto Route 110.
 - A fair share contribution would be made toward widening the I-95 northbound off-ramp to Amesbury to provide two lanes at the approach to the intersection.

A conceptual improvement plan for the intersection of Route 110 and Elm Street has been designed for the Town to provide to interested proponents. In addition to the geometric and operational mitigation presented above, improvements to preserve or encourage alternate modes of transportation must also be incorporated. These measures include:

- Provision of pedestrian crossings at new traffic signals along Rocky Hill Road and at the Elm Street/Route 110 intersection;
- Provision of ADA (Americans with Disabilities Act) compliant sidewalks and wheelchair ramps along all reconstructed roadways;
- Completion of a feasibility study of providing shared parking for a regional park and ride facility with shuttle connection to the Newburyport Commuter Rail Station. This study should also include the feasibility of providing a stop for the C & J express bus to downtown Boston; and
- Coordination with the Merrimack Valley Regional Transit Authority (MVRTA) to provide public transportation to/from the site.

The Town should work with MassHighway and FHWA to evaluate reconstruction of the I-495/I-95 interchange to provide a full interchange at this location. As explained in Chapter 5, this would require construction of an I-495 northbound off-ramp to



Townhomes (Typ.)

Condos (Typ.)

Site 2

I-495

I-95

Route 110

Site Access

Program
Site 1 (not shown)
 Residential

Can be Developed on any
 Vacant Parcel(s)

Condo/Townhomes: 74 Units
 Total: 74 Units of Housing

Site 2
 Retail

- 1 - 14,000 sf
- 2 - 12,000 sf
- 3 - 19,500 sf
- 4 - 11,500 sf
- 5 - 65,000 sf
- 6 - 12,000 sf

Total: 134,000 sf

Parking

+/- 675 Retail Parking Spaces

Residential

Single Family Housing: 107 Units
 Condo/Townhomes: 22 Units

1

203 Units
 134,000 sq ft
 +/- 675 Retail Parking Spaces



Locus

Vanass

Figure

Conc

I-95 southbound and an I-95 northbound off-ramp to I-495 southbound. Currently, vehicles needing to make these connections must use Route 110 to do so. Therefore, a full interchange could substantially reduce traffic on Route 110 between I-495 and I-95. If the interchange is reconstructed to provide for full access between I-95 and I-495, the mitigation measures along Route 110 detailed above may be able to be reduced. An origin-destination study would be required to determine whether enough traffic could be removed from Route 110 to justify interchange reconstruction and reduce the related Route 110 capacity enhancements.

General industry standards estimate that mitigation costs for a retail development average \$20 per square foot, including the cost to purchase the land. While the mitigation program identified includes costly mitigation measures to alleviate impacts created by the development, it is not anticipated that these costs would be considered unreasonable by potential developers.

Traffic Operations

The mitigation measures identified for the build-out scenario are sufficient to allow all study area signalized intersections to operate at overall acceptable levels of service under 2016 conditions. However, some intersection movements (such as the left turn from Elm Street to Route 110) would operate at unacceptable levels of service during the evening and Saturday peak periods.

Two of the unsignalized study area intersections (Route 110 at Elm Street and Route 110 at I-95 northbound off-ramp to Salisbury) operate at poor levels of service under both No-Build and Build conditions. Traffic operations at these locations are not affected by the development.



Recommendations

As the Town is approached by potential developers, this study should be used as a baseline for discussion. Since no market analysis was completed as part of this project, it is likely that any proposed development would differ substantially from the land use plans presented. However, based on 2006 existing traffic volumes, this study presents the maximum number of trips, with the recommended mitigation program, that could be generated by the site without major transportation impacts within the community.

The Build scenario offers the Town an increased tax base and opportunities to increase employment and housing, while offering a proponent a reasonable improvement program. The conceptual layout presented was created to avoid on-site environmental impacts and be more aesthetically pleasing to the Town than previous proposals for the site.

As is described in Chapter 4, it is important to note that it is the number of trips and their distribution that govern the type of mitigation needed, not the land use and square footages alone. Therefore, there are a number of other land uses that could be acceptable, depending on their trip generation statistics. Although these land uses would generate less income for the town, they could include hotels, medical office buildings, or warehouses. Recreational facilities such as soccer fields, hockey arenas, and hiking trails could also be considered.

Considering the land use preferences indicated by the Town, Table ES-1 provides the maximum square footage that could occur on each of the smaller parcels identified within the Golden Triangle. The table shows that based on environmental constraints alone the Golden Triangle could support up to 513,800 square feet of retail development, 1,101,000 square feet of office development, or 632 residential units. Mitigation costs associated with needed transportation improvements and access limitations in developing some of the land further reduces the maximum square footage of development possible.

Table ES-1
Alternative 3 - Maximum Development Size by Land Use¹

Land Use	Guideline Per acre	Amesbury Parcels				Salisbury Parcel	Total
		1 (9.7 acres)	2 (36.5 acres)	4 (4.5 acres)	5 (5.5 acres)	3 (12.5 acres)	69 acres
Retail (square feet)	7,000	77,000	247,800	40,600	54,600	93,800	513,800
Office (square feet)	15,000	165,000	531,000	87,000	117,000	201,000	1,101,000
Residential (units)	8.6	95	305	50	67	115	632

¹ Based on industry standards and a 25 foot wetland setback as requested by the Town of Amesbury