

2011

Growth Incentive Zone Application



Prepared by the Bourne Planning Department

DOWNTOWN BOURNE - Village of Buzzards Bay

May 2011

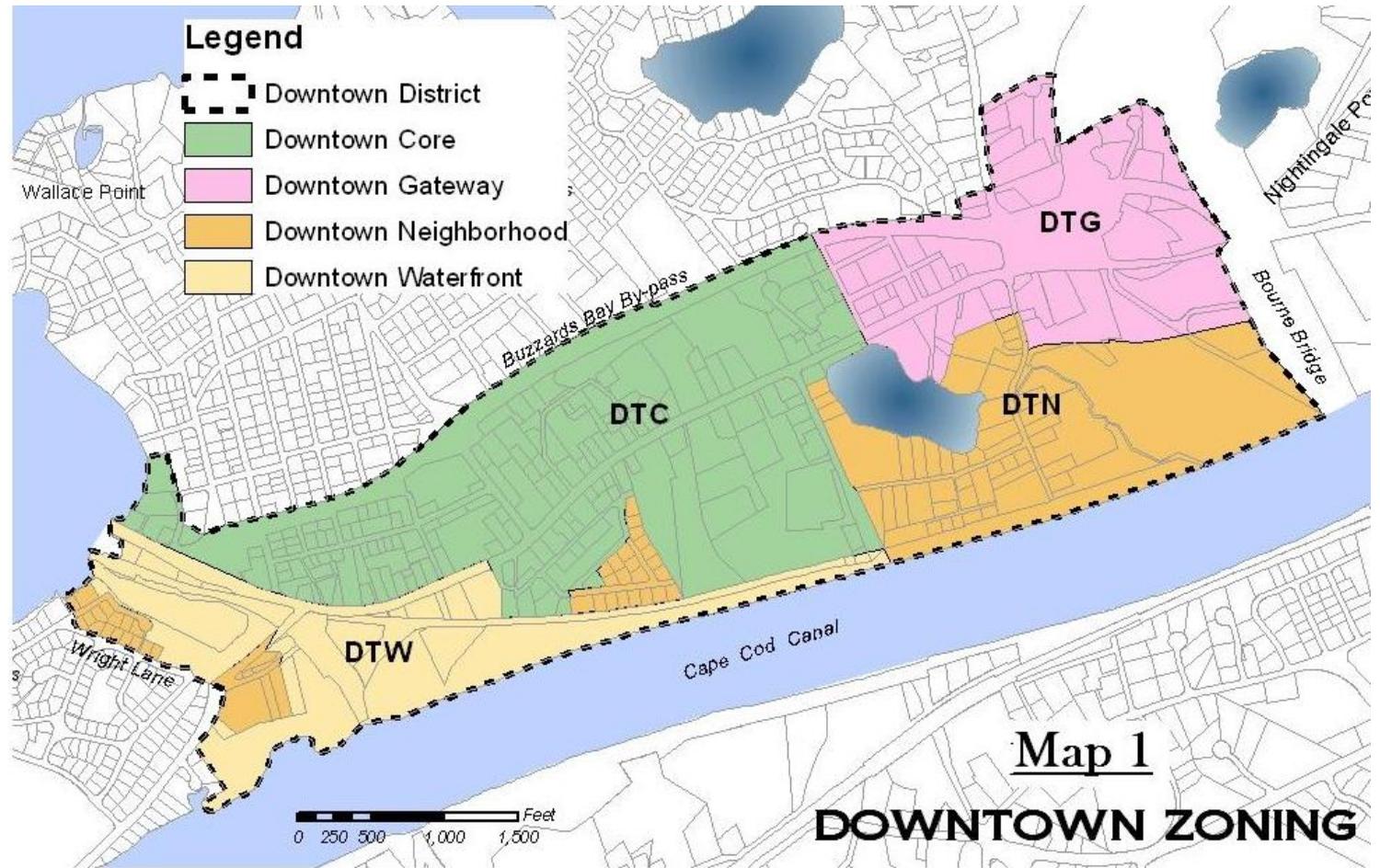
	DESCRIPTION	PAGE
I.	<u>INTRODUCTION</u>	3
II.	<u>PROPOSED GROWTH INCENTIVE ZONE BOUNDARY</u>	7
	<u>Phase 1</u>	9
	<u>Phase 2</u>	10
	<u>Phase 3</u>	11
	<u>Phase 4</u>	12
	<u>Phase 5</u>	13
III.	<u>GENERAL DESCRIPTION OF EXISTING DEVELOPMENT IN PROPOSED GIZ</u>	14
IV.	<u>INFRASTRUCTURE AND SERVICES</u>	17
V.	<u>ENVIRONMENTAL ATTRIBUTES</u>	24
VI.	<u>PLANNED DEVELOPMENT: CHALLENGES AND RECOMMENDATIONS</u>	27
VII.	<u>OFFSETS</u>	35
VIII.	<u>BUILDOUT</u>	40
IX.	<u>APPENDIX</u>	42

I. INTRODUCTION

The Town of Bourne has compiled this document as an application to the Cape Cod Commission requesting the designation of a Growth Incentive Zone (GIZ) in the Village of Buzzards Bay in the area now known as Bourne's Downtown. This designation will allow more local control by raising the Development of Regional Impact (DRI) thresholds in the areas shown in this application.

The Village of Buzzards Bay has been identified in the town's Local Comprehensive Plan (LCP) as a place for desired growth, particularly commercial and mixed-use growth. Buzzards Bay is unique among Bourne's village centers in that it has direct highway access and public infrastructure, including sewer (albeit limited) and water. Capitalizing on the existing infrastructure, Bourne's LCP includes goals to focus development north of the Canal and specifically in Buzzards Bay. One of the LCP's "Highest Priority Actions for Land Use" identifies the Main Street area of Buzzards Bay as the focus area for directing new commercial growth. Both the LCP and the Cape Cod Regional Policy Plan indicate the preferred patterns of growth to be redevelopment and infill, stressing the need to protect undeveloped areas and critical resources.

Downtown Buzzards Bay has many underperforming properties including both residential and commercial. This plan proposes to maximize these properties by using the existing infrastructure while minimizing the negative impacts of growth. This plan focuses on the potential for people to live and work on a smaller footprint while supporting the revitalization plan for Downtown. It focuses on the unique opportunity for people of various means to live as neighbors unified by a common desire for active social interaction in a livable, workable, walk-able village. The Village of Buzzards Bay has played an important role in Bourne's civic and government center since 1884. The area has been a hub for transportation for nearly 400 years, first as a maritime port for freight shipments from Europe, then as a railroad hub between Boston and New York. Main Street once served as the main connector to the Cape for



those traveling from major cities west and south. However construction of the Buzzards Bay Bypass in 1956 and the construction of I-195 and I-495 resulted in the rerouting those traveling through Buzzards Bay and causing a significant drop in business traffic.

In March of 2008 the Bourne Financial Development Corporation commissioned a study for the purpose of facilitating creative thinking beyond Main Street. The result of that study was the creation of a “Vision Plan for Bourne’s Downtown”. Through the work of the vision plan the Town adopted new zoning for the Village of Buzzards Bay specifically for the area that is now known as Bourne’s Downtown. Using the GIZ in conjunction with the newly adopted zoning otherwise known as “form-based code” that allows for higher-density, mixed use development will provide a clear incentive for those interested in investing in Downtown Buzzards Bay.

The new zoning divided the downtown into four separate zones as depicted in Map 1:

▪The Downtown Gateway (DTG)	▪The Downtown Waterfront (DTW)	▪The Downtown Neighborhood (DTN)	▪The Downtown Core (DTC)
-----------------------------	--------------------------------	----------------------------------	--------------------------

DTG, DTW, and DTC are all very similar, allowing for much higher density and mixed use. The DTN remains a conventional suburban zoning district without significant change and little opportunity for further development. The zoning in the DTG, DTW, and DTC allows for four-story buildings by right with a Floor-Area Ratio (FAR) of 2:1. This includes commercial uses on the first two floors and residential uses above. Taller buildings can be built with a special permit. More common forms of commercial and residential development, such as single-story retail and individual houses, are either not permitted or allowed only by special permit. The zoning also encourages shared parking and parking structures to allow greater on-site density. The purpose of creating this zoning was to encourage and even require urban development forms in the downtown.

Demographics and Trends

Bourne is the 4th largest town on Cape Cod with a total of 41 square miles that span the Cape Cod Canal, including the Bourne and Sagamore bridges. However, 40% or 16.4 square miles of the town’s land area is occupied by the Massachusetts Military Reservation. The town has approximately 23 square miles in public/semi-public/tax exempt categories, which includes a total of 9.3 square miles classified as open space. Of this, 2.5 square miles are owned by the town and 6.8 square miles are owned by other land trust entities. As a result of this large amount of public or tax-exempt property, there are relatively few areas suitable for commercial or industrial development. In fact, only 4.4 square miles are zoned for commercial use and only contributes 9 - 11% of the tax revenues. The Downtown Buzzards Bay project area represents approximately 10% of this commercial/industrial land base.

With the limited development opportunities posed by the presence of the Massachusetts Military Reservation, the Cape Cod Canal, the large amount of exempt properties, and the state/federal roadway system, the town is reaching build-out under current zoning. The village area of Buzzards Bay is one of only four remaining areas of the town with development or redevelopment potential (MacArthur Boulevard, Bournedale and the new configured area of Sagamore beach area are the others).

- 1. Population:** The Town of Bourne has a winter population of just fewer than 20,000 and summer population of about 50% higher, which is typical for communities on Cape Cod. Cape Cod and Bourne in particular continue to see increases in year-round population but not in peak seasonal increases, which results in excess capacity during the off-seasons.

New highways are generally not needed for year-round use, and only select roadways that have been long inadequate need to be improved. MISER predicts that under current population growth rates, the year-round population of Bourne will be 29,470 by 2026.

2. Housing: According to the 2010 Census, the Town of Bourne had a total of 8,584 year round dwelling units, per DHCD 568 qualified as affordable units giving Bourne 6.6% towards the States mandate of 10%. The Village of Buzzards Bay is home to more than 4,500 of Bourne’s residents (nearly 25% of the towns population). The village has a relatively higher percentage of residents between 15 and 24 due largely to the student population at the Massachusetts Maritime Academy (MMA). About 21% of residential properties in Bourne are seasonal dwellings. However, about one third of residential tax values are collected from the same. According to the town assessors’ records, average assessed values for homes owned by seasonal residences is about one third higher than housing values for year-round residences (about \$520,000 vs. \$396,000 in FY05).

3. Employment Trends: There have been significant changes in Bourne’s employment conditions between 1990 and 2000. The Agriculture and Fisheries sector dropped from 2,732 jobs to 874 (-68%); Manufacturing declined from 6,421 to 4,875 jobs (-24%); Retail Trade from 18,846 to 15,022 (-20%); and Health and Education increased from 12,589 to 22,732 (+81%).

4. Tourism and Community Events: The Cape Cod Canal Region Chamber of Commerce estimates that there are approximately 150,000 visitors to Buzzards Bay annually. This estimate is based on attendance at the visitor center (about 27,000 per year) and local events including about 50,000 at the annual Scallop Festival and 3,000 at the Concerts on the Park. Additional events in Buzzards Bay that draw local residents and visitors include the BBVA road race, St. Margaret’s Carnival in the Park, March of Dimes Walk on the Canal, ALS events, YWCA events and several other seasonal events and programs.

5. General Land Use Trends: According to the town’s Local Comprehensive Plan, 90% land in Bourne outside the Massachusetts Military Reservation is developed. The edges of the Downtown Buzzards Bay Project Area are well defined, with the Cape Cod Canal to the south, the Buzzards Bay Bypass to the north, Belmont Circle to the east, and Memorial Circle and the Taylor’s Point neighborhood to the west. The majority of land in the project area is privately owned. The Town of Bourne, however, is the single largest property owner. Additionally, the state owns some properties around the former railroad station, and the Army Corps of Engineers (ACOE/federal government) owns the lands adjacent to the Cape Cod Canal and several

Buzzards Bay Economic Data¹	Number	U.S. Rank (Percentile)	State Rank (Percentile)
<u>% People in Labor Force</u>	62.1%	12,621 (of 25,150) (50%)	171 (of 235) (27%)
<u>% Drive Alone to Work</u>	74.2%	17,403 (31%)	184 (22%)
<u>% Take Public Transportation</u>	1.1%	5,919 (76%)	154 (34%)
<u>% Walk to Work</u>	6.4%	4,438 (82%)	36 (85%)
<u>Average Commute Time (Minutes)</u>	28.7	6,098 (76%)	70 (70%)
<u>% Households making less than \$10,000</u>	9.7%	12,645 (50%)	70 (70%)
<u>% Households making over \$200,000</u>	1.7%	5,327 (79%)	116 (51%)
<u>Median Household Income</u>	\$39,750	8,627 (66%)	178 (24%)
<u>% Households Receiving Public Assistance</u>	1.6%	16,547 (34%)	133 (43%)
<u>Per Capita Income</u>	\$18,304	9,420 (63%)	201 (14%)

¹ Information taken from www.statjump.com

other adjacent parcels in the project area. The project area is largely divided into small parcels of land with the majority of owners having one or two properties.

6. Economic Trends: Among the most common occupations in Bourne are Management, professional and related occupations, 36%; Sales and office occupations 25%; and Service occupations at 14%. Approximately 69 percent of workers in Bourne work for companies, 16 percent work for the government and 10 percent are self-employed².

Commercial uses contribute about 40% of tax revenues and another 40% is contributed from residential property. Residential properties are more densely developed within the project area compared to other areas of Bourne but are underperforming in terms of their assessment value and, therefore, property tax contribution. Residential growth has been limited in the Downtown project area; between 1999 and 2008 only 1 single family home and 26 condominium or apartments were constructed in the downtown as compared to 2,800 single-family homes and 460 condominium units constructed town wide.

The Downtown area has a limited supply of land for future commercial development, although the development potential under the newly adopted zoning allows for significant increases in density. Of the remaining undeveloped but developable land, about 5.5 acres categorized on Main Street are classified as developable parcels. These are non-contiguous and scattered parcels for the most part. There are also a few large publicly-owned parcels that have development potential, and a few large privately owned parcels that have redevelopment potential. The largest and most developable parcel is located across the street from Town Hall and was permitted for a 40B condominium project with 80 units on 12 acres. Though the project has been canceled, there is very good potential for a high density mixed-use, town-centered development on the same parcel.

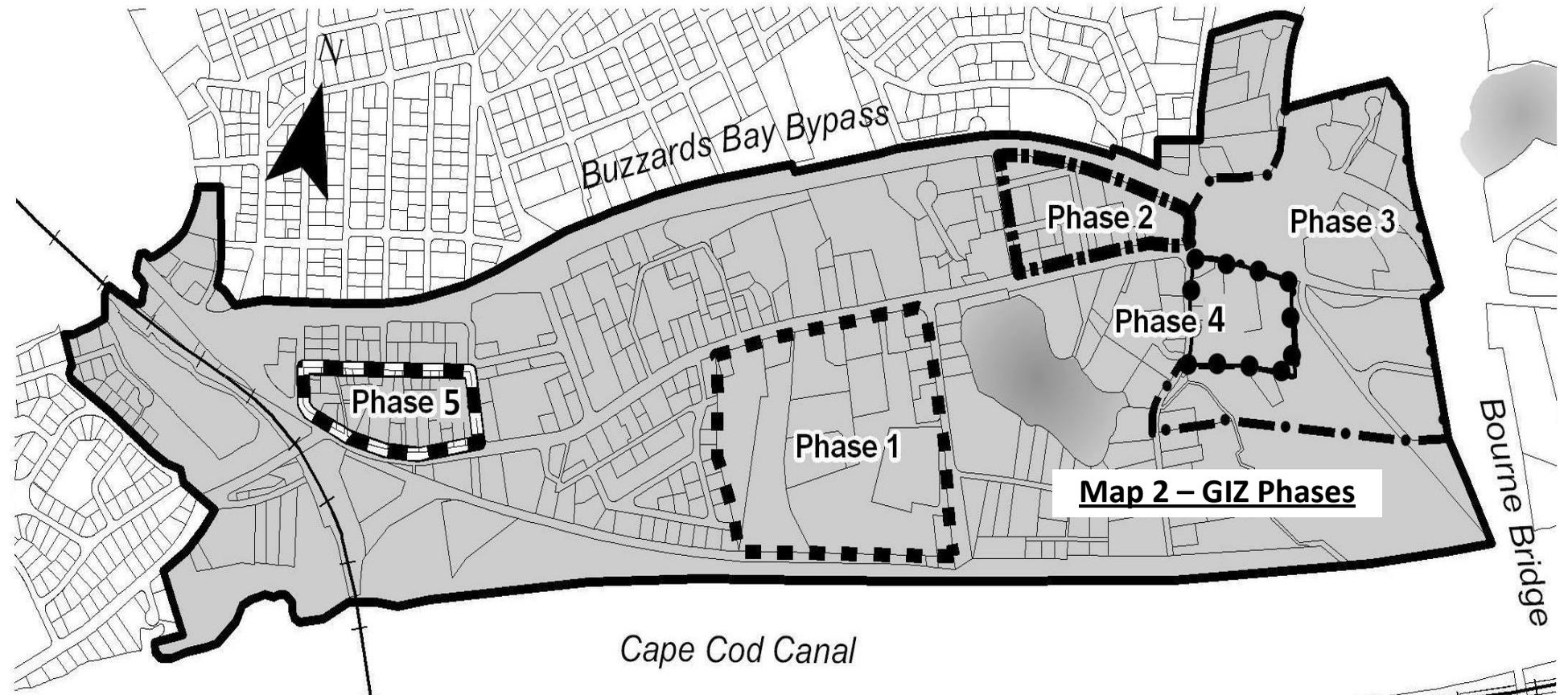
[Return to Table of Contents](#)

² According to *Simply Hired* website on 5.20.11

II. PROPOSED GROWTH INCENTIVE ZONE BOUNDARY

The Town of Bourne is proposing a five phase Growth Incentive Zone; however at this time we are requesting relief only for Phase 1, Phases 2, 3, 4 and 5 would occur later, much of it after wastewater treatment is expanded. However we are requesting flexibility to move from one phase to another depending on the readiness of a project or the failure of a project to proceed in Phase 1.

The Town of Bourne is requesting immediate relief for Phase 1 particularly for the area outlined in red on the Phase 1. The Town has been approached by a developer proposing an assisted living facility. Discussions with the developer have revealed a desire to locate the facility in the northern portion of the parcel and in the future develop the southern portion as a high-density mixed-use development. The project is located across the street from the Town Hall located on Perry Avenue and across the street from the Bourne Community/Senior Center on Main Street.



PHASE 1: South of Main Street and immediately west of Perry Avenue - (36+/- acres)

Phase I is central to the downtown, it is ready for development, we purport that the development of the property can take place within the existing wastewater treatment capacity. The Bourne Sewer Commissioners have already reserved 23,000 gpd for a proposed assisted living facility in this phase. The proposed development is planned for approximately 15 acres, and may be the largest possible development allowed in the downtown before the wastewater issue is resolved. Negotiations are ongoing however the swift review and approval of this Growth Incentive application is imperative.

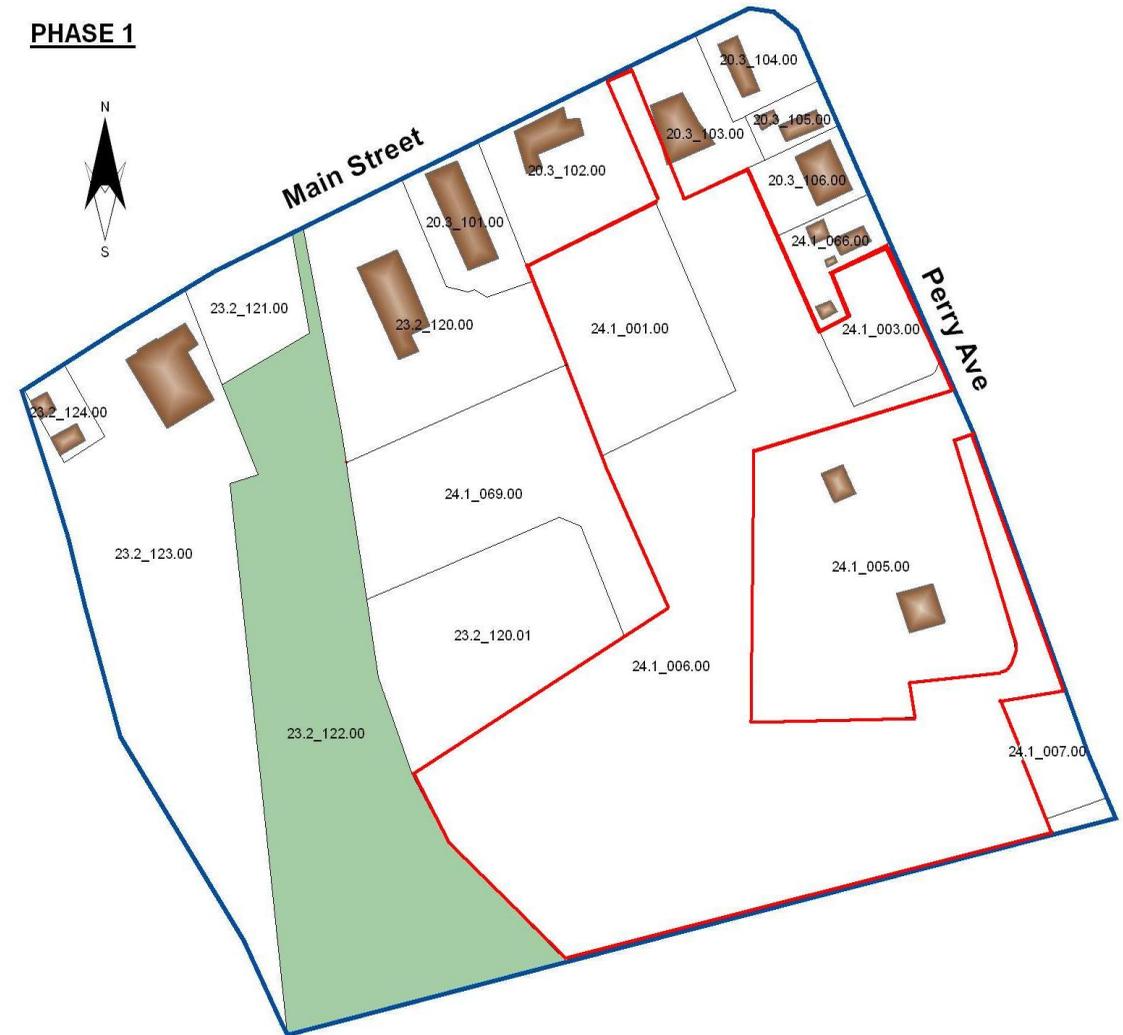
Site Location: Beginning at the corner of Main Street and Perry Ave. go south \pm 1300 feet, then west \pm 1300 feet, and then proceed north towards Main Street \pm 1030 feet and then east \pm 1300 feet; back to the point of beginning (corner of Main Street and Perry Avenue)

Site Characteristics: Phase 1 has a total of 36 acres including 19 parcels ranging from 0.18 acres to 9 acres.

- One (1) parcel is protected open space owned by the town, shown in green to the right on Map 3.
- Five (5) parcels are vacant, including 3 parcels outlined in red which were once part of an assemblage of properties previously approved for an 80 unit affordable housing development, the permit has since expired.
- Eleven (11) parcels are considered developed however approximately half are underdeveloped.

Land Use: Phase 1 has a majority of commercial properties, of the 19 parcels 14 are designated as commercial by the assessor using the state class code; 1 is designated a residential, 3 industrial and 1 exempt. (See map in appendix for the actual land use)

Topography: The topography of Phase 1 is generally flat, with a maximum of differential elevation of approximately 5.0 feet. There are two relatively low points, one at the southwest part of the parcel near the Canal, and the other in the northern portion. The area ranges from 3.3 to 8.4 feet below the FEMA base flood elevation of 14 feet. The entire landform is in the glacial outwash plain composed of Carver soil.



Environmental:

Wetlands and Wildlife: Phase 1 has approximately 24 acres of woodland considered upland. It contains no Bordering Vegetative Wetland (BVW) or Isolated Vegetative Wetland. There is, however, a BVW located on the far-east side of Perry Avenue bordering Bourne Pond, which is approximately 270 feet from the site at the nearest point of Phase 1. In addition, a coastal bank exists along the Cape Cod Canal, approximately 130 feet to the south of the site. Based on two previous reports from the Massachusetts Natural Heritage and Endangered Species Program of the Division of Fisheries and Wildlife – namely, the *2000-2001 Estimated Habitats of State-Listed Rare Wetlands Wildlife* and the *2000-2001 Estimated Habitats of Rare Wildlife and Certified Vernal Pools* – there does not appear to be any priority or estimated habitat located on the site.

Flood Zone: The site is located within an AE 100-year flood zone, specifically, an AE Zone (EL=14) as shown in the Flood Insurance Rate Map, the entire site is considered as Land Subject to Coastal Storm Flowage according to the State Wetlands Protection Act. The delineation of the 100-foot buffer from the top of the coastal bank has not been approved or confirmed by the Bourne Conservation Commission.

Note that the site is not located in a Zone II or Water Resource District.

Soils: Soils on the site consist of Amostown Sandy Loam (AmA) and Udipsamments Smoothed (Ud), according to the Soil Survey of Barnstable County prepared by the U.S. Soil Conservation Service (SCS). AmA is a very deep, nearly level and gently sloping moderately well-drained soil found in depressions and swales in areas of glacial lake deposits. It is typically covered by about one inch of undecomposed pine needles, leaves and twigs and one inch of partly and well decomposed organic material. Permiability is moderately rapid in the subsoil to moderately slow in the substratum. Ud levels are nearly level soils that have been excavated or filled during construction. They typically have a friable loamy sand layer several inches deep, underlain by several feet of loose course sand, but they vary from area to area. Groundwater was observed at a depth of 78” to 84”.

Utilities and Services: Phase 1 contains or has access to a number of utilities and service, including water, sewer, gas, electricity, and telephone. Road access is through a corridor that connects to Main Street on the north end of the parcel and an access area directly on Perry Avenue to the east.

[Return to Table of Contents](#)

Phase 2: West of the Belmont Circle, south of the Buzzards Bay Bypass, and north of Main Street (10.36 acres)

Phase 2 is located within the Gateway of the Downtown and is the highest elevation within the Downtown therefore the easiest to develop. It has three vacant parcels, paper roads, with potential future access to the bypass.

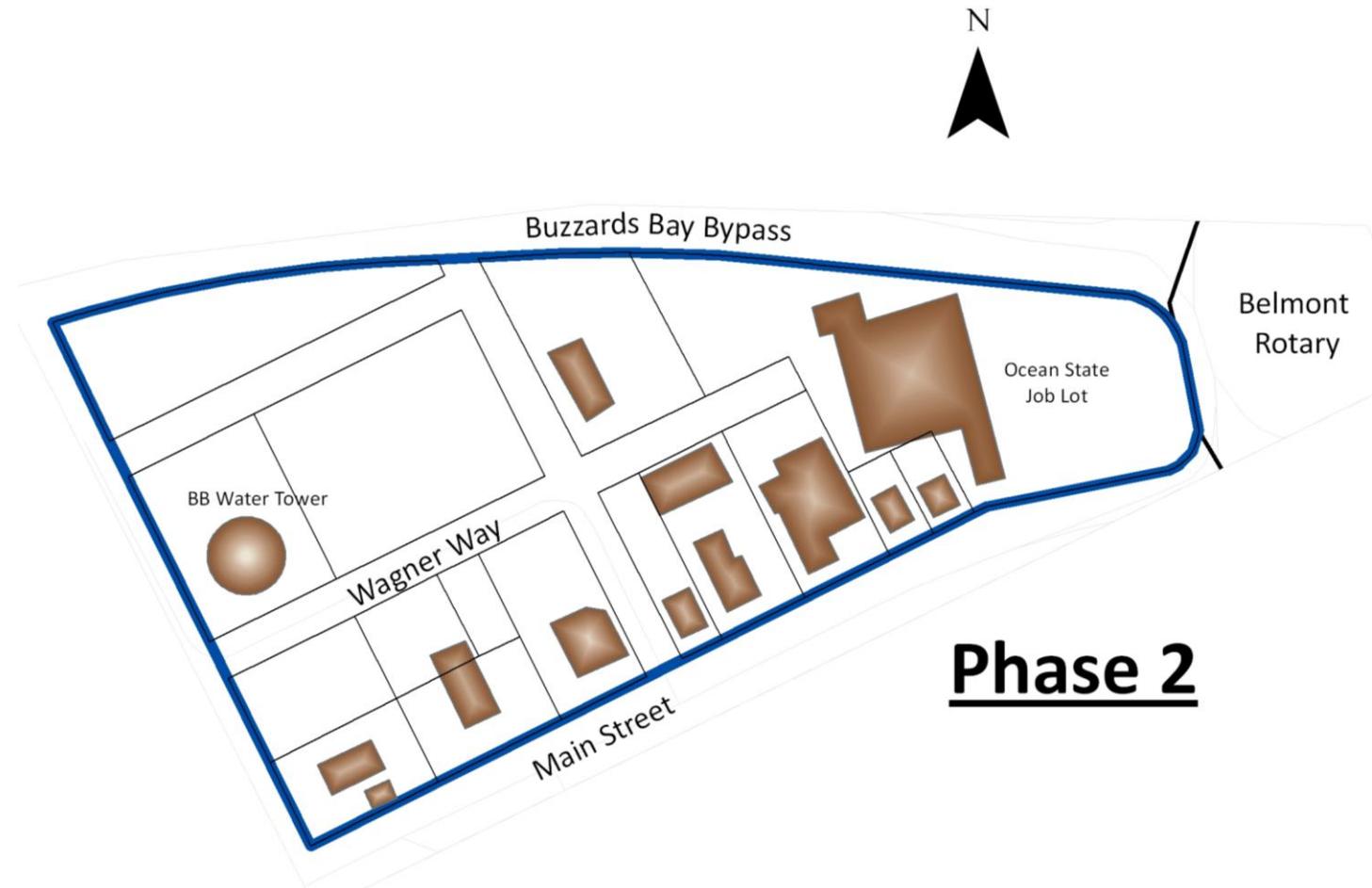
Request: Allow this site to be developed under a threshold reflecting allowable zoning at a point in the future, contingent upon the provision of centralized or private wastewater treatment.

The town of Bourne hereby requests relief contingent upon construction of a new wastewater treatment system, either public or private, that effectively allows an expansion of growth in this area. This is the area from Belmont Circle (including points east, north and south of the circle) to Wagner Way (a partly paved and partly paper road that connects perpendicularly south to Main Street across from Bourne Pond). The area totals approximately 10 acres. If wastewater treatment were not a limiting factor, this area would be included in Phase 1. From a development perspective, it is the most important section of town because it is outside of the flood zone, has vacant parcels, and has a great potential of redevelopment. Moreover, it forms the gateway to Buzzards Bay, beginning at Belmont Circle. The granted relief would be similar to the relief granted in Phase 1 but would require:

- The development of a permanent long-term tertiary wastewater treatment facility or facilities, public or private
- A transportation management plan and implementation schedule *(depending upon intensity of the proposed development)*
- Roadway improvements, Wagner Way is only partially built.

(See Land Use Map in the Appendix)

[Return to Table of Contents](#)



Phase 3: Located at the beginning of the downtown district, east of the Belmont Rotary and west of the Bourne Bridge - (45.46 acres)

Phase 3 is a large area on eastern end of town that is located in the Downtown Gateway District. This phase is the host to key regional roadways such as the Belmont Circle, Scenic Highway and the on ramps to the Bourne Bridge and Route 25. This phase will be a challenge to develop. Until the problems with Belmont Circle are addressed the northern part of Phase 3 will have limited growth, however a major investor or developer may be able resolve the transportation hurdles, therefore we have included this area in the GIZ.

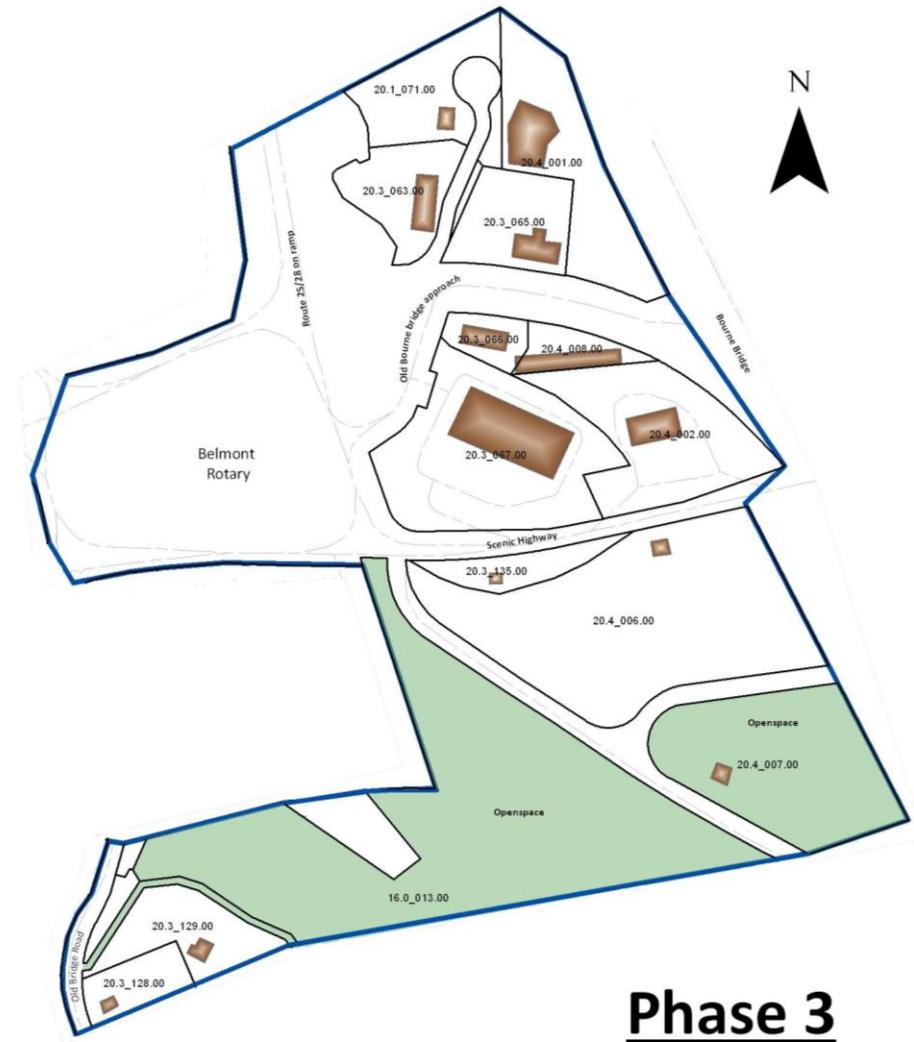
Request: Allow this site to be developed under a threshold reflecting allowable zoning at a point in the future, contingent upon the provision of centralized or private wastewater treatment and transportation improvements consistent with the growth plans of the town.

The town of Bourne hereby requests relief that will be contingent upon construction of a new wastewater treatment system, either public or private, that will effectively allow an expansion of growth in this area. Phase 3 is partially in the flood zone, however the northern portion, has the most potential for development is outside the flood zone. This area would allow for gateway type growth close to the highway exit.

The granted relief would be similar to the relief granted in Phase 2 with some minor differences. It would require:

- The development of a permanent long-term tertiary wastewater treatment facility or facilities, public or private, to serve at least the development in the phase.
- A comprehensive transportation management plan and implementation schedule, taking inconsideration implementation of the BBVA Comprehensive Transportation Plan including changes to the Belmont Rotary.

[Return to Table of Contents](#)



Phase 3

Phase 4 Is located at the beginning of Main Street, south of Belmont Circle, and east of Old Bridge Road - (7.38 acres±)

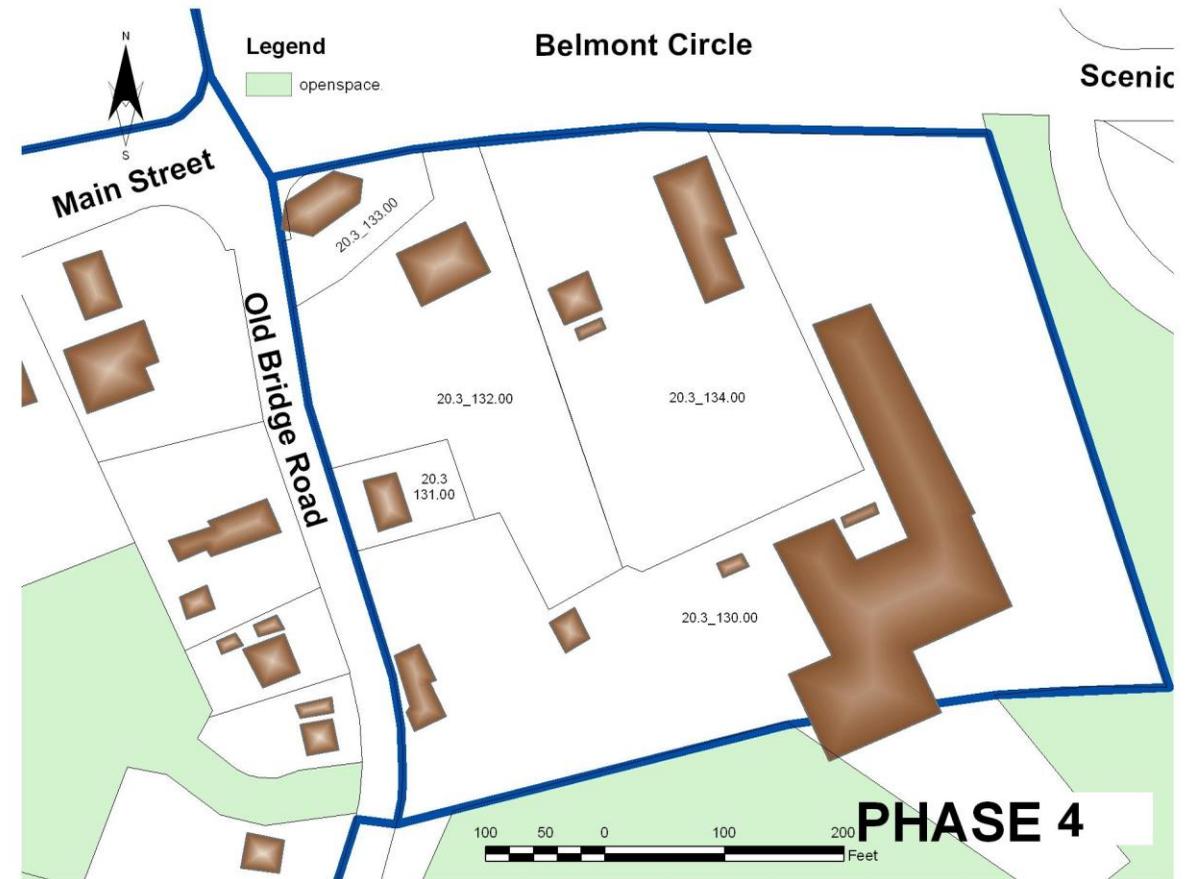
Request: Allow this site to be developed under a threshold reflecting allowable zoning, subject to the limits of existing wastewater treatment capacity, as an alternative to Phase 1.

The town of Bourne hereby requests immediate regulatory relief for an alternative area if development of the Phase 1 area does not occur or in addition to Phase 1 if redevelopment can use its existing wastewater capacity. This area is composed of five parcels on the south side of Belmont Circle – Map 20.3, Parcels 130 through 134. The parcel is part of the gateway to the downtown, and is ready for development, the development of the property can more than likely take place within the existing wastewater treatment capacity (*the current wastewater allocation for this parcel is 3,443 gallons per day*).

One major drawback is traffic; this particular site, because of its location on Belmont Rotary, could create severe traffic problems that would not be problematic for a development located farther to the west, down Main Street. This phase would serve as development exempted from Cape Cod Commission review depending on the type and intensity of the proposed redevelopment and the mitigation of transportation issues and if its development would not exceed the wastewater limitations.

The granted relief would be similar to the relief granted in Phase 3. It would require:

- The development of a permanent long-term tertiary wastewater treatment facility or facilities, public or private, to serve at least the development in the phase.
- A comprehensive transportation management plan and implementation schedule, taking inconsideration implementation of the BBVA Comprehensive Transportation Plan including changes to the Belmont Rotary.



[Return to Table of Contents](#)

Phase 5: Land between Main Street and Cohasset Avenue and between Wallace Avenue and Washington Avenue - (8.89 acres)

Phase 5 includes the area designated as Priority Sites through the States 43D program, this portion of the Downtown is the more traditional style of main streets however an area difficult to develop due to the existing structures and the floodplain regulations.

Request: Allow this site to be developed under a threshold reflecting allowable zoning at a point in the future, contingent upon the provision of centralized or private wastewater treatment and consistent with the best available floodplain regulations.

Phase 5 is a special case. It is targeted for development as a result of its history and location. This area, although in the flood-prone AE-Zone, serves as a civic anchor and is the center of the old downtown. It also includes eight parcels (seven north of Main Street, where development is feasible) identified in the town's 43D application and report to the Department of Housing and Community Development. The total area is approximately 9 acres.

The granted relief would require:

- The development of a permanent long-term tertiary wastewater treatment facility or facilities, public or private, to serve at least the development in the designated area, especially the 43D site
- A comprehensive downtown transportation management plan and implementation schedule
- Zoning and design controls to accommodate development in a flood plain.

[Return to Table of contents](#)



III. General Description of Existing Development in Proposed GIZ

Downtown Bourne has many uses, the nature and extent of those uses, however, are far less than what would be typical of a healthy downtown. While there are, within certain areas, some commercial, residential and institutional uses, the mix of those uses and their relatively low densities falls far short of what is needed for a healthy, well-functioning downtown. Some of the uses that were historically in the downtown have disappeared or changed over the years.

Land Use Types

The Assessor’s database (2010) and the Planning Departments GIS database was used to find the area, land use, and characteristics of each of phase. The following table lists the composition of existing land use within the Downtown.

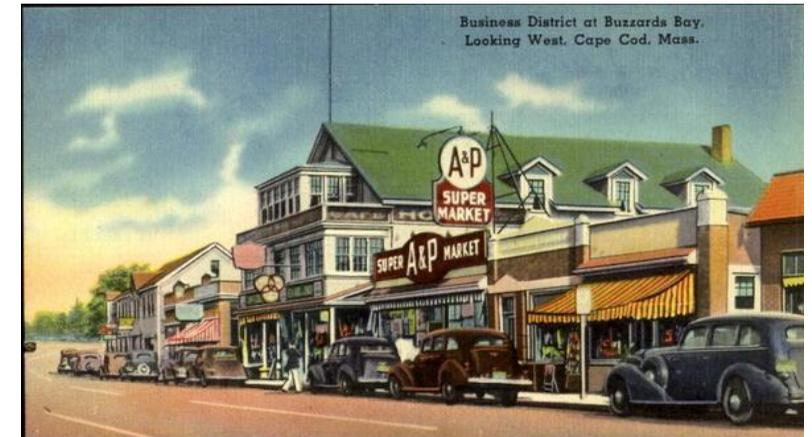
Downtown Land Area by Use	SF	AC
Cemetery	4,356	0.10
Charitable Organizations	201,395	4.62
Churches, Synagogues &Temples	182,517	4.19
Commercial	3,809,391	87.45
Mixed Use	105,632	2.42
Open Space/Forest/Chapter Lands	641,084	14.72
Public/Semi Public	1,176,230	27.00
Recreational	34,412	0.79
Residential	3,185,504	73.13
Vacant Developable	878,733	20.17
Vacant Undevelopable	77,363	1.78

Residential: Residential growth in the last decade has been in short supply in the Buzzards Bay area, in the last decade only 6 of the 2,800 single-family homes and 16 out of 460 condominium units constructed in Bourne were located in Buzzards Bay. Residential properties are more densely developed within Downtown area (*currently there are 336 residential units in the downtown*) compared to other areas of Bourne but are underperforming in terms of their assessments and values, and therefore their property tax contributions.

Commercial/Retail: There is ample commercial development in the downtown, although many are underutilized given the prior zoning. Commercial development in Buzzards Bay contributes about 40% of tax revenues.

Municipal Land and Structures: While the majority of land in the downtown area is privately owned, there are a number of key parcels that house essential public services or provide open space and recreational opportunities. Perhaps most notable is the Town Hall on Perry Avenue. The downtown also is host to several other critical facilities such as the fire department head quarters, the Police Station, the Community/Senior Center. These structures are considered an essential component of public service, although there is recognition that they can be affected by flooding. There are also several parcels that contain recreational fields, owned open space, and the Town park. Overall, the town of Bourne is the single largest property owner on Main Street. The state owns some properties around the former railroad station and the Federal Army Corps of Engineers owns the lands adjacent to the Cape Cod Canal and several other parcels.

Institutional: Perhaps most notable of all institutional developments on Cape Cod is the Massachusetts Maritime Academy (MMA)– Cape Cod’s only four-year educational institution and one of the finest maritime colleges in the nation. Though it logically is built in a flood-zone, it contains one of the tallest buildings in Barnstable County. The MMA can serve as an institutional and economic anchor for downtown redevelopment.

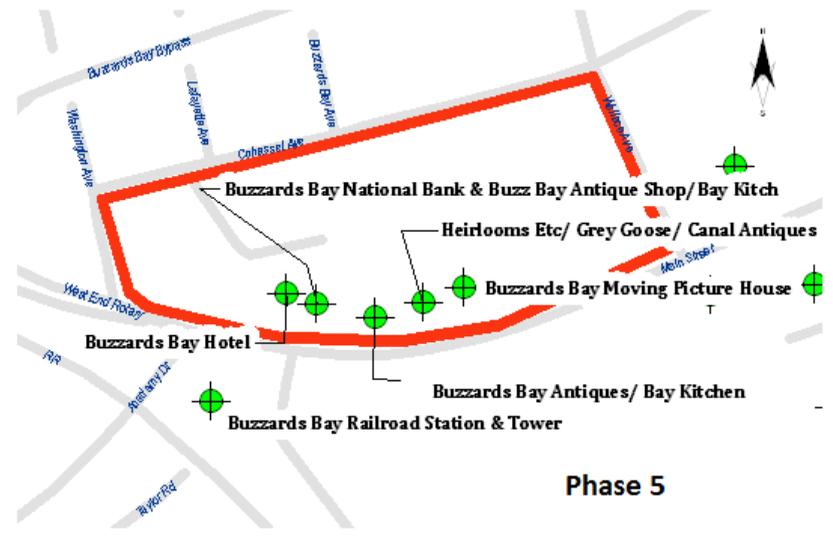
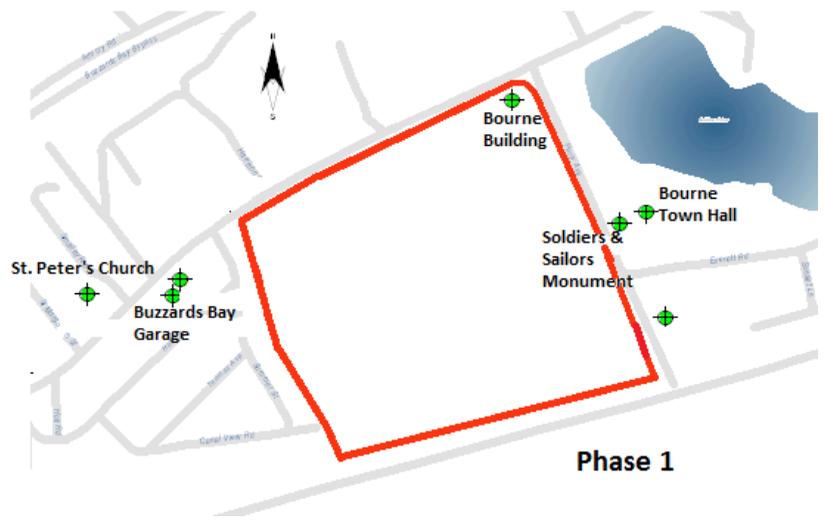


A once healthier Main Street seen on an old postcard date unknown

Recreation: Buzzards Bay has sizable areas that are used specifically for recreation, and more areas that could be used. Aside from the athletic field at the Community Center, there are additional areas of town-owned open space in the center of town and most prominent is the Buzzards Bay Park that was focus of an international design competition. There is also a bike trail along both sides of the Canal that serves as a place for recreation and scenic vistas. Any development plan should consider how to aggregate growth on higher areas of downtown while preserving some of the most flood-prone areas as civic space with low development potential.

Historic Structures: Buzzards Bay has a number of historic structures and sites on Main Street, many located in the flood zone. Several of them are commercial structures as shown below in Phases 1 and 5. According to the recommendations of the Town’s consultant Public Archaeology Laboratory, Inc. (PAL) the Main Street Commercial Area does not appear to meet the eligibility requirements for the listing in the National Register of Historic Places. The area contains numerous examples of various periods and styles typical of the late 19th and early 20th century residential and commercial architecture, many with artificial siding, replacement windows, and new additions. It lacks the visual continuity for the National Register eligibility as a district under Criterion C. While it possesses several individual buildings with potential local historical significance and the historic of the development of the area reflects the overall growth of the town, the area lacks a strong cohesive historic theme or specific events to qualify under Criteria A or B.

Historic Structures	Phase ³
● Buzzards Bay Hotel	5
● Buzzards Bay National Bank- Phase	5
● Buzzards Bay Antiques – Phase	5
● Buzzards Bay Kitchen	5
● Soldiers and Sailors Monument	-
● Buzzards Bay Moving Picture House	5
● Buzzards Bay Railroad Station and Tower	-
● Buzzards Bay Garage	-
● St. Peters Church-on-the-Canal	-
● Bourne Family Cemetery	-
● St. Margaret’s Church	-
● Bourne Main Fire Station	-
● Eldredge Lumber Company	-
● Bourne Building- 240 Main Street	1



Phase I contains only one historic structure the “Bourne Building” at 240 Main Street. The Towns historic inventory includes the achitectural description and lists the property in its area data table, but does not include the Historical narrative. The Bourne Building has been extensively renovated in the past few years including the addition of vinyl siding. Of primary concern are historic structures in the flood zone that cannot be moved. Particularly those made of masonry, are very difficult and expensive if not impossible to move. These structures can have some on-site improvements to make them more flood resistant, or to make their use less consequential in a flood

³ - depicts historic structure in Downtown not in a GIZ Phase

situation. Thought needs to be given as well to those structures that may be historic in nature but have no particular state or federal protections. In the instance where such a structure is located where future growth could go, there may be a conflict between retention of the structure and economic development goals.

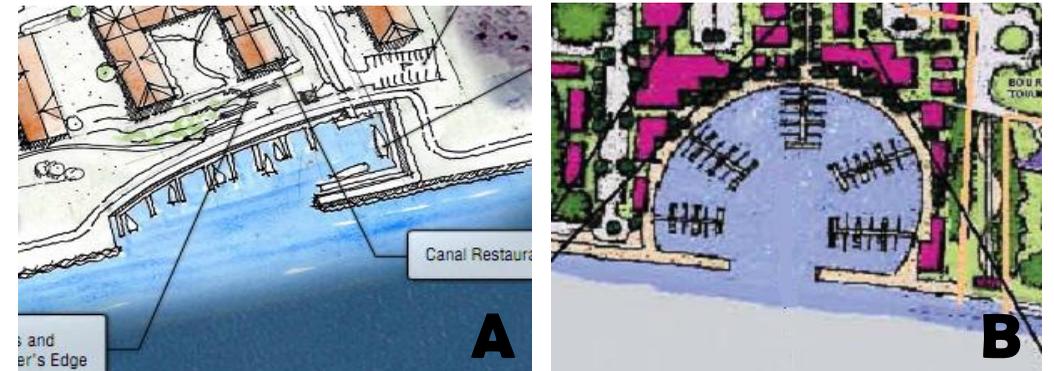
Affordable Housing: The Town of Bourne was well on its way of reaching the States mandate of 10% Affordable housing until the release of the 2010 Census. According to the 2000 Census data Bourne reached 7.3%, which represents 568 subsidized units. As of the date of the publication of this document the percentage of subsidized units has dropped to 6.6%. According to the 2010 Census data year round housing has increased by 797 therefore decreasing the percentage of affordable housing units in Bourne.

Downtown Buzzards Bay's growth of affordable units has been severely limited. Within the last ten years the downtown has only seen the permitting of 25 affordable units of which only four (4) have been built. The implementation of the GIZ in the Downtown represents an opportunity to provide affordable housing, particularly because of the increase density and the allowance for many housing types, such as apartments and townhouses, rather than detached, single-family homes that dominate other areas of town.

Under the newly adopted zoning for downtown, 10% of all residential units in any development of more than 10 such units must be made affordable. Because of the requirement for a minimum of 2 stories, there is ample opportunity to provide in excess of 10 units in most new buildings. Mixed-income housing is allowed to build up to 1 unit/2,500 square feet of lot area, or 17+ units per acre of lot area.

Municipal Harbors: Downtown contains one of the most important maritime environments in southern New England. The southwestern end of the Cape Cod Canal is home to the Massachusetts Maritime Academy, one of New England's premier four-year learning institutions. The Canal serves as a major tourist attraction and visual benefit. For example, both sides of the Canal feature bicycle paths, although access from Main Street proves difficult. The bike paths serve as both a recreational benefit as well as a continuous path for potential access to the downtown. Attention should be paid to increasing the visibility of and access to the bike path, especially to and from one or several key points in the downtown.

Planning efforts for downtown have also examined the idea of creating a central urban harbor/waterfront that would serve as an attraction to boaters and tourists. Several concepts have been developed that include development of the waterfront area and even structural basins that allow for temporary boat docking and related or associated retail development. The Downtown Vision Plan provides several different scenarios for a "boat basin" that would allow docking, retail, entertainment and even housing. A planning exercise performed by the Cecil Group on a property across the street from town hall created a redevelopment vision including a mixed-use development with a boat basin (A) in addition, the Downtown Vision Plan also included a possible boat basin (B). While any of these scenarios would require lengthy and difficult Army Corps of Engineers approval, it is nevertheless a helpful and proactive way to tie development on Main Street to water-dependent uses on the Canal.



[Return to Table of Contents](#)

IV. INFRASTRUCTURE AND SERVICES

Wastewater Treatment: Wastewater capacity is the single greatest limiting factor in downtown redevelopment. Buzzards Bay has a wastewater treatment system, which is shared with the town of Wareham. Connection to this treatment system came about through an Intermunicipal Agreement (IMA) in the 1980s and most recently updated. While the connection relieved the most severe wastewater problems in town, a number of estuaries still suffer from nitrogen pollution.

The current system involves two major separate collection systems: 1) east rotary to west rotary, bypass to Canal including Bourne Oaks, Continental Apartments, and all buildings surrounding the east rotary and 2) Hideaway Village. In Buzzards Bay, the sewer system extends from the former Quintal's Restaurant on the Scenic Highway at the east end of town to the Bourne/Wareham town line on the west. Projects currently planned in the downtown area to be connected to the sewer system include an Assisted Living Facility with a reserved capacity of 23,000 gpd, and the National Marine Life Center at 12,500 gpd, in total, there are nearly 1,000 units currently connected to the sewer system.

Sewage is pumped through the town to the Wareham wastewater treatment plant through a series of grinder pumps, including one behind the fire department on Main Street, which is in a deteriorated condition. In addition, the two sewage pumps are long overdue for replacement, and any significant growth in the downtown will require that existing sewer lines be replaced with lines of a larger diameter in order to accommodate increased flow.

In 2007, Tighe and Bond completed a comprehensive wastewater study which concluded that the downtown area had the highest and most imperative need for wastewater treatment of any area of town. This was due to the high groundwater and floodplain issues, significant predicted economic redevelopment, and limitations of capacity due to the connection to Wareham's wastewater treatment system.

The IMA between the towns of Bourne and Wareham allows for treatment of 200,000 gpd. This IMA expired in 2009; the towns have renegotiated the terms of the agreement at the same level as the previous agreement, with some minor changes in the notification procedure. Part of the 200,000 gallons is already used by existing demand, as much as 126,000 gpd during the highest use period (July).

The maximum allowable gallonage that can be sent to Wareham is 200,000 gallons per day (gpd). A discussion with the Sewer Inspector George Tribou has revealed that the winter sewer usage is approximately 10,000 gpd for the Hideaway housing complex, and 85,000 gpd for the remainder of the Downtown, leaving approximately 105,000 gpd. Mr. Tribou has cautioned us that the usage numbers quoted are the winter estimates, summer usage is higher due to the increase of the summer residential and tourist population. Of the remaining gallonage **23,000 gpd has been reserved for the Assisted Living Housing project proposed for Phase I**, leaving approximately 82,000 gpd. And additional 10,000 gpd is set aside for potential Hideaway usage leaving 32,000 gpd for summer usage and other small projects outside the GIZ, therefore **leaving approximately 40,000 gpd for new projects** in Phases 2-5. This is inadequate for allowing significant growth in the downtown, however enough to accommodate a number of noteworthy projects. The areas designated as Phase 1 or Phase 3 are candidates for immediate development under the Growth Incentive Zone

The Massachusetts Estuaries Project (MEP) provides information that the Massachusetts Department of Environmental Protection (MassDEP) uses to assess what is known as Total Maximum Daily Loads (TMDL) of nitrogen for estuaries in coastal Massachusetts. TMDLs are regulatory limits that define the maximum pollutant load that a waterbody can accept and still meet Massachusetts water quality standards. A major source of nitrogen pollution is standard septic systems, which remove none of the nitrogen in wastewater. Lower levels of nitrogen can only be achieved by advanced wastewater treatment at regional, centralized or decentralized treatment facilities. Although TMDL studies for the Buzzards Bay watersheds have not been completed, several other estuaries (such as Phinney's Harbor) are contributing excess nutrients. Phinney's Harbor, for example, must reduce its nitrogen load by 68%. The fact that increased growth in Downtown is planned around expanded wastewater treatment means that there are opportunities to maintain and even reduce nitrogen loading in key Buzzards Bay watersheds, such as Buttermilk Bay/Little Buttermilk Bay. TMDL reports for these areas are still in draft form.

New and greatly expanded wastewater treatment will be needed to allow significant growth and redevelopment in the rest of the downtown. The leading wastewater options include renegotiation for allowance of larger wastewater volumes with Wareham (not considered feasible) or constructing a new wastewater treatment facility in Bourne off the Scenic Highway near the new elementary school site (already examined by town-sponsored studies as a likely site). Because obtaining increased capacity from Wareham through renegotiation is unlikely, Bourne is currently working with Tighe & Bond to identify options and alternatives for wastewater treatment. At present, it is estimated that a substantial wastewater treatment plant capable of treating wastewater flows from Buzzards Bay at maximum 20-year development levels will need to have a minimum capacity of 461,000 gpd at buildout. According to the Tighe and Bond Study, study area 1 (the downtown area) will need approximately 206,000 gpd assuming 180,000 gpd will be pumped to Wareham for treatment and disposal.

Description

The amount of wastewater that can be expected from any given source, commercial or residential, varies depending upon the assumptions used. In the case of current wastewater loading, Tighe and Bond has used an estimation of an average of 50 gallons per day per 1,000 square feet for commercial development. This is a number based on recent historic trends, which may not necessarily reflect what would happen under a prosperous redevelopment scenario. George Tribou, Sewer Inspector, has estimated that 75 gallons per day per 1,000 square feet is a more accurate estimation of wastewater loads. This number has been confirmed by Sue Guswa at Tighe and Bond as conservative. Therefore, a year-round average of 75 gallons per day per 1,000 square feet of commercial use is assumed.

Residential use generally relies on an estimation of 110 gallons per day per bedroom. At an average of two bedrooms per unit in the downtown, an estimate of 220 gallons per day per unit is assumed. This number has been confirmed by both Sue Guswa and George Tribou as reasonable and even conservative.

Water Supply: The Buzzards Bay Water District supplies public water to the downtown area as well as most of Buzzard Bay. Water supply is less of a restriction than wastewater capacity, but the supply is limited far beyond what is needed for even a substantial buildout. The district has well sites on the north side of the Scenic Highway along with two water tanks with a combined capacity of 2 million gallons. The water district is currently limited to 580 million gallons per day (mgd) and is within approximately 100,000 gallons of reaching this limit. The district needs to develop new public water wells as the current sources of the Scenic Highway are at or near capacity. They have identified a potential site for a new well but the superintendent estimates that the new well is probably four to five years from going on-line and will only supply 15% more capacity. Although this would be more than adequate for the Phase 1 of the GIZ, this is a very significant restriction on long-term growth plans. Unlike wastewater treatment, a new water source must be found in order for the town to grow. This includes additional sources in Bourne on the north side of the Canal as well as sources in other towns, such as Plymouth or Wareham.

The District is currently working within the authorized withdrawal limits associated with the Water Management Act (Act) including both registered and permitted volumes. The limits do place an operational burden on the District during periods of high demand especially within the summer months. An additional issue raised by the superintendent is the poor condition of

some of the water lines. The District has worked hard to follow the policies set by the Act including conducting annual leak surveys and audits. It was successful in obtaining a 2009 DEP Water Conservation Grant, and has met the performance standards over the past two years for unaccounted water (less than 15%) and the residential per capita water use of less than 80 gallons per day or less. The district has recently raised rates to cover the expense of repairing the system and siting additional water supplies.

Transportation: Buzzards Bay faces a host of transportation issues that have disadvantaged its proper use as a downtown. Because of its proximity to the Cape Cod Canal, the Bourne Bridge, and several key regional highways, what could have been a major benefit to growth and development has instead impair the town – not because of the proximity of transportation corridors but rather because of the way in which highway systems were designed to ignore and even detract from access to the downtown. Now, however, with a redevelopment plan and a 21st century understanding of growth issues, the town stands to benefit with appropriate redesign and consideration of traffic issues.

Buzzards Bay Bypass – Arguably the foremost transportation issue in Buzzards Bay is the “Bypass,” built to accommodate through traffic before the highway (Route 25) was built. The Bypass – essentially a highway severing the downtown – resulted in a complete disconnection of roads between the downtown and residences to the north. Built by the state in 1956 to alleviate congestion on Main Street when all of the traffic between Cape Cod and points west traveled through the village, it is two lanes westbound for its full length, two lanes eastbound west of the armory, and one lane to Belmont Circle. Once Route 25 was opened, the Bypass itself was largely abandoned, and now serves as Bourne’s “highway to nowhere.”

The right of way (ROW) varies between 80 to 110 feet. The speed limit is 40 mph and the capacity, according to CCC, is 1,100 vph. Traffic volumes were last recorded in 2005: the ADT was 9,700, the peak hour volume was 794 vehicles, and the AADT was 7,566. This represents a slight decline since the 2002 traffic counts, which measured ADT at 10,419. The bypass operates at LOS B west of St. Margaret’s and LOS A the remainder of its length. Traffic volume trends indicate that there is consistently about twice as much traffic traveling westbound (toward Wareham) then eastbound. The bypass no longer carries much tourist traffic, which now uses Route 25. Seasonal counts made by CCC over the last several years indicate that Main Street still gets about 30% more traffic than the bypass during the summer months. The bypass has severed Main Street from the northern neighborhoods and has created a barrier with very few connections (a pedestrian tunnel under the road at the community center and an at-grade connection at St. Margaret’s Street). The rusted chain link fence that lines the Buzzards Bay Bypass creates not only a physical barrier between the downtown area and neighborhoods but portrays an image of poor quality and disinvestment.

This now-underutilized highway, however, presents a great opportunity for redevelopment into an integrated byway that reconnects the downtown and avoids flood hazards. Most importantly, through roads that were severed and fenced can now be reopened and reconnected to both the “Byway” and the rest of the downtown. By reducing speeds and increasing connections, what was once a scar can be turned into a new gateway into downtown creating an attractive setting for cars, walkers and bicyclists and boosting investment in the downtown.

Main Street – One lane in each direction, between the former railroad station and Memorial Circle on the west end. Travel lanes are typically 14 feet wide with unofficial turning lanes in each direction, and on-street parking is provided on most of the corridor. The speed limit is 30 mph but the excessive width of the street induces higher speeds, particularly in the eastern segment beyond Harrison Avenue where streetscape and traffic-calming improvements (i.e., the bump-outs) have not been installed. Relatively few destinations, low density, and very wide lanes allows for a constant, high-speed thoroughfare on Main Street. Traffic moves too fast, making entry or left turns difficult and barring safe pedestrian access.

The average daily traffic (ADT) was 22,506 and the average annual daily traffic (AADT) was 19,580. This represented a slight increase over the 1996 traffic counts. Traffic volumes were generally balanced in each direction. The traffic on Main Street east of Academy Drive was last recorded in 1996 and the ADT was 13,554 while the AADT was 13,012. The level of service (LOS) at the time was calculated to be D during peak hour and C during off-peak hours, and the capacity of the street to be 1,800 vehicles per hour (vph). (The peak hour traffic in 1996 was recorded at 1,049 vph). Traffic on Main Street at the counter just west of St. Margaret's Street was last recorded in 1996. The ADT was recorded to be 14,607 with a peak flow of 1,126 vph. The AADT was recorded to be 11,504. Traffic on Main Street just west of Belmont Circle was last recorded in 2004 with an ADT of 11,318 and an AADT 8,715. Traffic was essentially equal in both directions. Under current conditions, Main Street operates at LOS B west of Harrison and LOS A the remainder of its length. It has adequate capacity to accommodate new development and redevelopment into the foreseeable future.

Other Downtown Roadways – There are 30 streets in the downtown project area (which includes both the GIZ and adjacent non-growth areas contained in the downtown). The type and function of roadways varies greatly from major arterials (such as the Scenic Highway), major collectors (such as Main Street), collectors (such as St. Margaret's Street and Cohasset Ave.), and subcollector neighborhood streets (such as Everett Road, Lafayette Ave., and Harrison Ave.). In total, there is about 7.4 miles of roadway in the project area. Other key roadways in the project area include Head of the Bay Road and Academy Drive. Each has ADTs in the range of 2,000 vehicles. St. Margaret's Street serves as a primary link between the bypass and Main Street and is a key gateway into downtown. The street is wide with limited streetscape improvements. Such improvements, as well as gateway treatment and expanded/reorganized on-street parking, should be made. Cohasset Avenue is another key secondary connector that provides internal circulation between Main Street and the bypass on the west end of downtown. It is also very wide with limited streetscape improvements. Similar improvements should be made to Cohasset Street as are proposed for St. Margaret's Street. Washington Street is a small but very important connection between Main Street and the bypass. It provides a unique opportunity to reconnect the northern neighborhoods to Main Street and the waterfront. To accomplish this, consideration should be given to realigning the intersection with Main Street to form a four-way intersection with Academy Drive, and create a four-way intersection at the bypass to reconnect the neighborhood.

Memorial Circle – Is located on the west end of Main Street forming a gateway into Buzzards Bay for traffic coming from Wareham to the west on Routes 6 and 28. It is not a welcoming entrance and the Memorial Park and monument inside the circle is essentially inaccessible (the monument is planned to be relocated to a site at Town Hall). Changes to the approaches into the circle have allowed vehicles to carry higher speeds and little indication that they are required to yield to traffic in the circle. There is also confusion as to the right of way on traffic in the circle as opposed to entering traffic.

Changes to Memorial Circle have been included in a Comprehensive Transportation Plan⁴ commissioned by the Buzzards Bay Revitalization Association (BBVA). The Plan calls for a redesigned or eliminated circle create an attractive gateway into Downtown while providing safe and steady traffic flow. Reconfiguring the circle as a more conventional intersection could possibly improve the visual character of the west end and free up land in and around the circle for improved access to the park, gateway treatments, and other potential uses.

Cohasset Narrows Bridge – The current bridge was built in 1921 and reconstructed in 1935. It has structurally deteriorated and is of inadequate width by current design standards. It is listed on the Massachusetts Department of Transportation Accelerated Bridge Program and scheduled to be rebuilt with an estimated cost of \$15 million. As of January 19, 2011 design was not completed. The new bridge should also include a separate entrance to the western gateway to Buzzards Bay with decorative lighting and other design features. The Memorial Circle reconfiguration could possibly be done as part of this project.

⁴ Buzzards Bay Village Comprehensive Transportation Plan by Wesley Ewell and the Maguire Group 2007

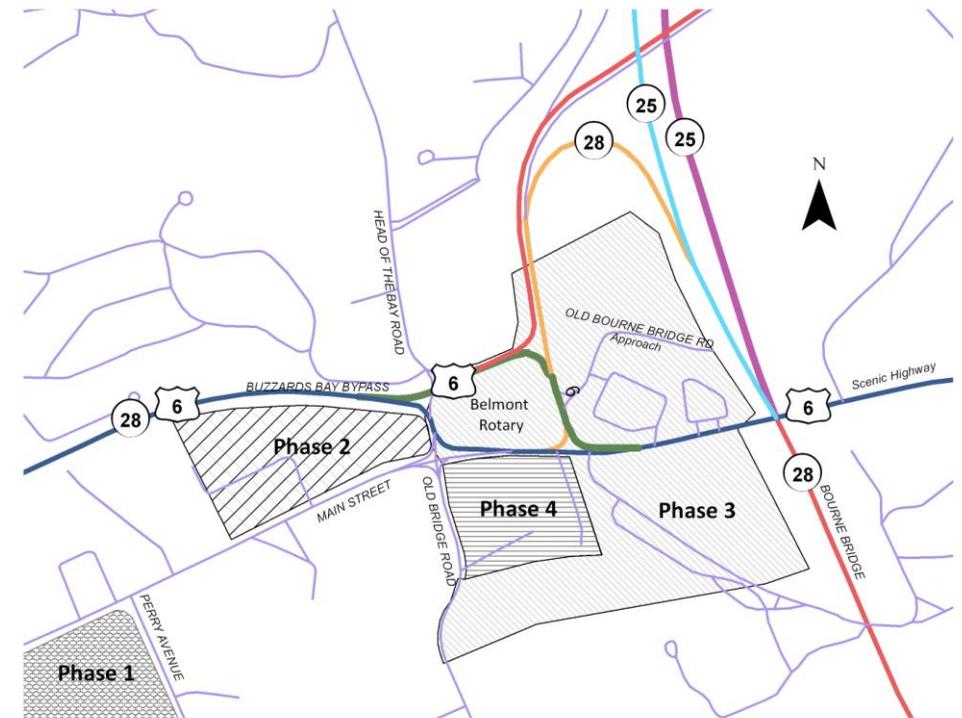
Belmont Rotary – Belmont Rotary is the eastern gateway to Downtown and is the confluence of Route 25/Exit 1, the Scenic Highway (Routes 6), Old Bridge Road, Main Street, the Buzzards Bay Bypass (Routes 6 & 28) and Head of the Bay Road. Downtown Buzzards Bay does not take advantage of all of the routes that converge at Belmont Circle, however, and is hurt by congestion during peak summer periods. The circle creates a physical and psychological barrier to people who might visit Main Street due to the large mix of visitor and local traffic processed through it. The circle can be confusing to visitors as they are trying to find the roadway they're seeking while crossing lanes and maneuvering around other vehicles. There are no streetscape or gateway improvements around the circle, which makes finding Main Street more difficult. These improvements, as well as possibly reconfiguring the circle to improve traffic flow and separation, as suggested in the BBVA's Comprehensive Transportation Plan, should be considered. This would increase the access and visibility of Main Street.

Route 25 and Exit Ramp – Route 25 has three lanes in each direction and a speed limit of 65 mph. The ADT in 2004 was 41,529 vehicles during the high season with an LOS of B during peak hours and C during off peak hours. The design capacity is 8,000 vph. The highway's heaviest traffic volumes are in Buzzards Bay.

Scenic Highway(Route 6) – Scenic Highway is a four-lane regional roadway connected to Route 25 by one-lane ramps that merge and split off into Belmont Circle. During the summer months these ramps carry more than 40,000 vph and much higher at peak times. The access ramps should be widened to two lanes in each direction and run directly into a T intersection at Main Street/Scenic Highway, as recommended by the BBVA's Comprehensive Transportation Plan.

Public Transit – Local bus service is currently provided by the GATRA⁵. The CCRTA⁶ also provides a dial-a-ride service called the B-bus, and the Council on Aging runs a shuttle bus for seniors. Intercity bus service currently bypasses Buzzards Bay. Peter Pan Bus Company provides regular service between Bourne and Boston, New Bedford, Providence, and New York City, with trips originating in Woods Hole, Falmouth, and Hyannis. The Bourne stop is currently located at a convenience store on the other side of the Bourne Bridge just west of the Bourne Rotary and has only 42 spaces reserved for commuter parking.

Bourne has seen a dramatic rise in commuting population over the last few decades, but the number of commuters is likely to decline as the population ages. The public transit systems will need to be expanded to accommodate year-round demand as well as redevelopment in the Downtown. A new bus terminal located near the Route 25 interchange



⁵ The Greater Attleboro Taunton Regional Transit Authority

⁶ Cape Cod Regional Transit Authority

would provide more convenient access to all villages in Bourne, require minimal interruption of bus trips, and better serve the area north of the canal, which is the fastest growing area of town. The BBVA's Comprehensive Transportation Plan suggests that a bus terminal located within Belmont Circle could accommodate approximately 170 parking spaces which could be expanded to a parking garage in the future as necessary.

Rail – Currently, there is no passenger or commuter rail service in Buzzards Bay. The closest available commuter service is the Lakeville Station which is approximately 22 minutes from the village. MBTA is considering a plan to extend commuter rail service from its current terminus at the Middleboro/Lakeville Station through Wareham and Buzzards Bay. The Boston Regional Metropolitan Planning Organization (MPO) recently released a study of this proposed extension, which considers the costs of such service and the potential impacts on the villages in the future.

Commuter rail is generally considered an effective means of stimulating growth and economic activity as it has done recently in Kingston, Hanson, and North Plymouth. The MPO report states that parking will be the key requirement for a commuter rail, and an estimated 1,200 spaces may be required for a station in the Downtown. On the surface, this would require at least eight acres of land or a four-story garage, which would require three acres. The Vision Plan for the Downtown concept plan addresses parking through the use of a parking garage in the area of the railroad bridge.

From 1982 to 1988 Buzzards Bay was the entrance of operations of the Cape Cod and Hyannis Railroad. This company ran sightseeing trips, dinner trains, and non-commuter connector service that brought visitors from the Braintree MBTA station. As many as 800 visitors came on every trip. This service ended and the company went out of business when the state leased the tracts to Bay Colony Railroad. Amtrak passenger rail service to Buzzards Bay and Hyannis is advocated by the CCC and many local residents. It is widely believed that visitors will use the service, reducing the amount of cars on local roads.

The Railroad Bridge is owned by the ACOE⁷ and, until recently, was operated by Bay Colony Rail. Bay Colony had charged a \$500 fee for lowering the bridge, which deterred a lot of use by other rail service providers such as the Cape Cod Dinner Train operated by the Cape Cod Central Railroad (CCCR) out of Hyannis. In addition to the dinner train, CCCR runs scenic excursion trains and family theme trips. A subsidiary of the CCCR has recently gained control of the rails and is considering relocating the tourist trains to Buzzard Bay.

Pedestrian and Bicycle Access – Pedestrian access is satisfactory in the Downtown area except for portions of Main Street that have not had the benefit of streetscape improvements. Improvements are needed along the Bypass and Belmont Circle. Most streets have adequate sidewalks or low enough travel levels to allow reasonably safe walking on the street. Three traffic control lights with pedestrian signals and a pedestrian underpass between the community center and armory enable crossing of the bypass. More than half the length of Main Street has been upgraded with new sidewalks, street trees, and brick bump-outs to define parking and crossing areas. This needs to be extended to Belmont Circle to improve pedestrian access and safety throughout Main Street. Additional improvements are needed around the two circles as there is no way for pedestrians and bicyclists to safely cross the Route 25 access ramp between Belmont Circle and the Bourne Bridge.

While bicycle traffic along the Canal trail – the bike path along the entire length of the Canal – is extensive and considered one of the most scenic bikeways in the country, travel through the village can be difficult and dangerous. Portions of Main Street have been narrowed by the recent streetscape improvements and have multiple curb cuts that pose

⁷ Army Corp of Engineers

safety issues for bike riders. The Buzzards Bay Bypass is dangerous because there is no breakdown lane and vehicles tend to travel at high speeds. The side streets in the village are relatively safe or adequate for bike travel.

Many bicycle tourists are not aware of the Canal trail coming over the Cohasset Narrows Bridge from the west and continue down Main Street to Belmont Circle. Better signage and access between Main Street and the canal are needed and should be completed in the near future. There is safe access to the Bourne Bridge through the old bridge access road between the outlets and Salvation Army, but this route is easily missed in the confusion of the circle and is not well marked. Signage is needed as an immediate step to improving bicycle safety and access throughout the village. Consideration should also be given to allowing pedestrians and bicycles to cross the Canal via the railroad bridge and a water taxi service.

Parking – Currently there is sufficient public and private parking that is well distributed throughout the downtown and conveniently available most of the time. Parking along Main Street is free and open to visitors and residents alike, and many businesses have off-street parking lots. ACOE maintains an a newly paved parking lot for visitors next to the railroad bridge, which itself is next to a state-owned paved parking lot at the railroad station for visitors to the town park.

There is a need for additional parking during special events such as the scallop festival, and the MMA currently needs additional parking for students and visitors. The potential future addition of passenger and commuter rail and an intermodal center (with intercity bus service) in the Downtown will also require more parking. A park-and-ride lot for commuters may be needed as well. The state armory site off the bypass may be the best site for this type of facility.

Public and private parking will have to be expanded and managed as the downtown area is further redeveloped, although the parking requirements adopted as part of the zoning change for downtown are a marked improvement, and consistent with smart growth principles. In particular, the new zoning allows for reduced parking requirements, and allows the parking to be provided within the building. Items such as the Shared Parking Reduction Factor, Off-Site and On-Street Parking Credit, and Traffic Circulation Improvement and Reduction Incentives all encourage reduced parking and shared access as a means of blending automobile, streetscape and pedestrian uses.

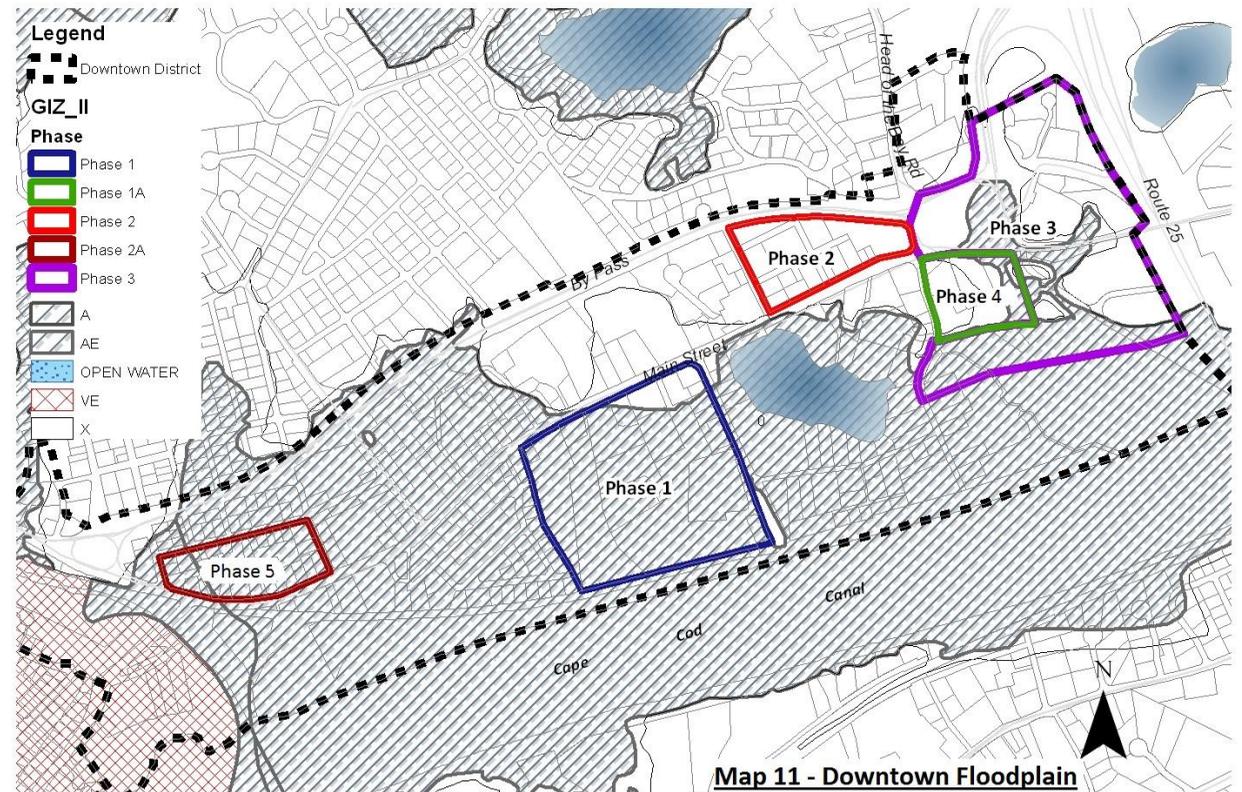
Electric, Gas and Cable: The downtown is faced with several electrical and communications challenges. Public gas is supplied to Buzzards Bay by Algonquin, and cable is provided by Comcast. Electric power is supplied to the downtown area by NSTAR which has an office and electrical transmission substation on Perry Avenue. Current capacity is sufficient for the project area. Yet much of the telecommunications infrastructure is on telephone poles throughout the town. The poles create an unsightly and sometimes logistically inconvenient infrastructure. Overhead utility lines are located on the south side of Main Street and all side streets in the project area. The utility poles and lines along Main Street are particularly obtrusive due to the limited streetscape treatments and mature trees. One of the key challenges in the development process is to improve the public environment to attract private investment, and streetscape design is a key factor. Overhead power lines on Main Street should be examined carefully to determine options to reduce their aesthetic impact. Options may include burying the lines underground, relocating lines behind buildings, or buffering lines with mature and well maintained street trees. In addition, there are limitations on electric power given the current infrastructure that need to be addressed.

[Return to Table of Contents](#)

V. ENVIRONMENTAL ATTRIBUTES

Flood Zone: A large portion of the downtown is in the A Zone although the west end particularly Taylor’s Point is in the Velocity Zone (V-Zone)⁸. As defined by the Massachusetts Office of Coastal Management, the Velocity Zone indicates areas “where wave action and high velocity water can cause structural damage in the 100-year floodplain.” The A-Zone makes up the rest of the 100-year floodplain that would be inundated with water during a 100-year storm event but experiences conditions less severe than the Velocity Zone. The A-Zone covers the majority of the western side of Main Street up to the bypass between the Cohasset Narrows Bridge and the north side of Harrison Avenue. Note that a significant portion of the eastern end of Main Street from Belmont Circle to Perry Avenue that is slated for redevelopment is completely outside of the flood zone, and may be more appropriate for development. Nevertheless, the flood zone is a major redevelopment challenge in the downtown.

Flood zones entail a certain economic challenge as well, because new and redeveloped structures must meet flood zone standards, which include being constructed with certain structural components at or above flood levels. Financially, this may include increased construction costs, greater difficulty in construction financing, and higher flood insurance rates. The Town of Bourne Zoning Bylaw (Section 3100) currently requires that the lowest floor level (called the “Lowest Floor Elevation” in flood-zone terminology) of any newly built residential structure in the floodplain be elevated to not less than the base 100-year flood elevation. In addition to regulations, for the purposes of financing and insurance, the first habitable floor level of any development must be above the 100-year floodplain. In practical terms, this would indicate that the “ground level” of a newly built structure in the floodplain be elevated to a level of approximately five feet above flood level. This constraint may significantly hamper many commercial developments (i.e., retail, personal services, food and entertainment, and certain office uses) which typically are located on and preferably at street-level rather than elevated or second floors. Additionally, construction costs and increasing insurance costs would most likely outweigh potential rents and market potential in general. This is particularly the case with smaller, home-grown entrepreneurial retail stores that are desired by the community.



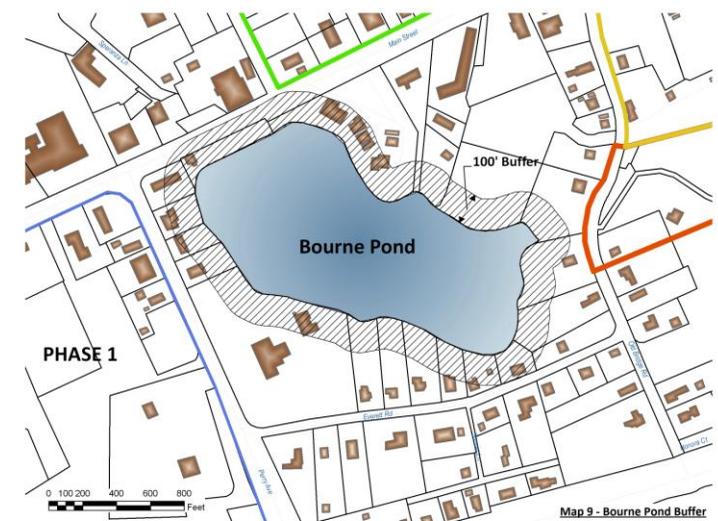
⁸ 100 – year floodplain

The Cape Cod Commission has produced a Model Floodplain District Bylaw specifically tailored to the needs of Cape Cod towns. The model regulations, however, only permit outdoor recreation, wildlife management, agriculture/forestry, and “uses lawfully existing prior to the enactment of the bylaw” (Section 05.1). The bylaw suggests several implementation tools to achieve compliance with the model regulations that may be at odds with the community vision for redevelopment. Part of the reason for this may be that much of the flood zone in the Downtown is an urban setting, drastically different from flood zones in other parts of the Cape. Therefore, it is important that the town and the Commission work together to incorporate the results of the floodplain construction analysis into the local regulations, and come up with creative ways to allow the right kind of redevelopment in the flood zone while also working to protect the most sensitive and flood-prone areas.

Consultant Kate Kennen⁹ produced a seminal document on the flood zone that identifies particular challenges as well as mitigation techniques. Section 4 of the document recommends design solutions to mitigate flood hazards, it also describes the nature and extent of the flood zone, the nature and construction characteristics of properties within the flood zone, how those properties are affected by floods, and what can be done in terms of construction techniques to improve both those properties and new development. Specifically, the document summarizes the following:

- Parcels located in a SLOSH Zone (Sea Lake and Overland Surges from Hurricanes Zone) as determined by the Army Corps of Engineers SLOSH atlas and mapped using GIS by the Cape Cod Commission, have the potential for flooding from surge inundation that may occur from wind and pressure forces of hurricanes in XF and XO zones (areas just outside of flood zones). FEMA does not require any flood mitigation and these parcels have the lowest insurance premiums.
- Vacant parcels have the greatest flexibility because they can be protected from development or developed according to stringent flood design standards. The higher the lowest floor elevation is above the Design Flood Elevation (DFE), the lower the insurance premium.
- For parcels containing buildings below DFE, insurance is costly. Elevating building’s LFE (Lowest Floor Elevation) above DFE or flood proofing commercial structures reduces insurance costs.
- Some buildings, including historic structures, may not be able to be moved or elevated. This is particularly true of masonry structures. Structures that are desired for preservation should be flood-proofed to the extent possible, including filling basements and waterproofing foundations and lower sections.

Wetlands and Pond Buffers: Local Conservation Commission Wetlands Protection bylaws requires a 50-foot no build for projects located near wetland resources, including wetlands and surface waters. There are isolated wetlands located in the town park adjacent to the Canal and north of Summer Street next to the town’s canal crossing property. There is also small wetland areas located between the town marina and railroad tracks, along the northern shoreline of the Taylor’s Point Neighborhood, within Belmont Circle, and along the north side of the Route 25 ramp. These wetlands were probably created by drainage alternatives associated with roadway construction and improvements over the years. The most



⁹ Plan “Study of Flood Hazards Mitigation and Design for the Main Street Business District – December 7, 2007

significant wetland in the Downtown area is located north and south of Old Bridge Road which has a direct feed into Bourne Pond. None of these wetland areas pose significant deterrents to future development, as development is generally steered away from these sites. The only surface water in the Downtown area besides the Cape Cod Canal is the Bourne Pond. This natural resource is surrounded by structures that existed long before the 50 foot no build buffer. However, this area is not planned for a GIZ but remains an underutilized resource in terms of passive recreational use. The State and the local Conservation Commission requires all projects within 100-feet of a wetland resource or those located within the floodplain to be reviewed for possible impacts.

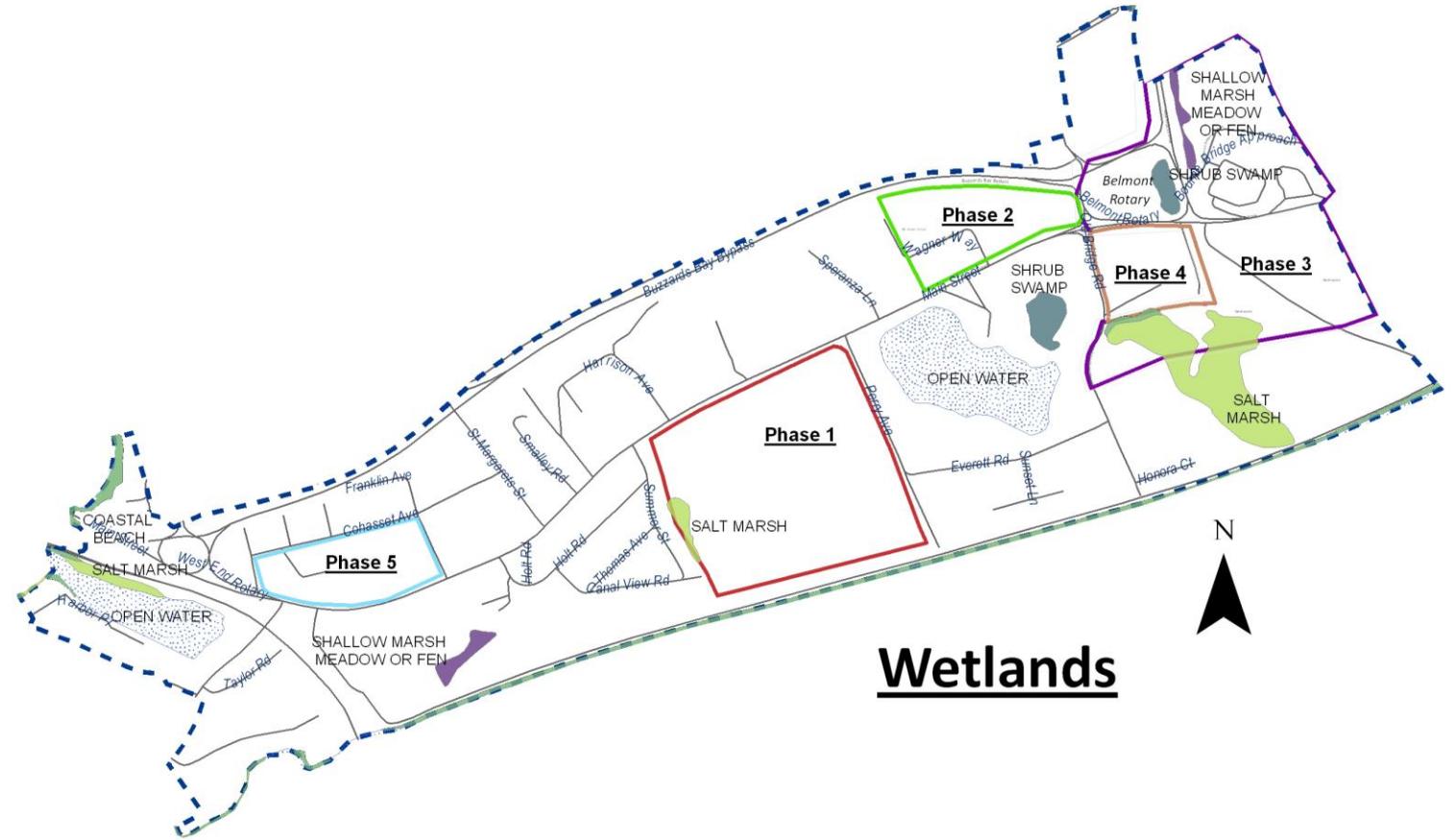
Stormwater Management:

Currently stormwater is collected by a series of catch basins and underground storm pipes. Individual properties are required to infiltrate their own storm water into the ground on their property, through the use of underground infiltration structures, rain gardens and swales. Roof run off is recommended to be separated from other impervious surface run off through the use of downspouts directly discharging into drywells.

Stormwater is separated from wastewater, and low-flow fixtures are encouraged. As the downtown is redeveloped, large areas may be covered with impervious surfaces such as parking lots and buildings. Runoff from these can be rapid and can overwhelm stormwater systems with high concentrations of pollutants such as oils, salts, and grease into ground water and nearby surface waters. These issues need to be considered as redevelopment occurs recommendations should be codified by inclusion in design standards and the zoning bylaw.

Separation and reuse of “grey water” should also be considered as a way of reducing sewage demand and increasing recycling of water flow within the downtown. The new downtown zoning bylaw requires planting areas to serve as stormwater treatment areas “rain gardens”, they are to be designed to be slightly depressed to capture stormwater run-off. The use of roof gardens is also recommended.

[Return to Table of Contents](#)



VI. Planned Development: Challenges and Recommendations

Downtown Buzzards Bay represents one of the greatest development opportunities in southern New England. It also presents significant challenges. There are certain factors limiting the amount of development that can occur, its placement, and its timing. Those factors are subject to change when the town is ready to make a strong financial and technical commitment to smart growth and resource protection.

Zoning: The zoning in downtown Buzzards Bay is currently “form-based code” – an advanced zoning system that focuses on the urban form of a downtown rather than isolated uses. In short, the zoning allows for and even requires mixed-use development, multi-story buildings, higher overall density, and “build-to” lines to ensure buildings are closer to the sidewalk and street. The zoning does not extend to all of the downtown; there are some neighborhoods that are generally built out as residential or other growth for which no changes are sought. Overall, the Main Street corridor, the area north of Main Street to the Bypass, and some areas south of Main Street are now eligible for significant increases in on-site density, height, and mix of uses. As a general description, zoning in downtown Buzzards Bay includes the following:

- Buildings up to four stories, with retail on the first two floors (or parking on the first floor and retail on the second, if in a flood zone) and residential above; taller buildings allowed by special permit.
- Dense development with parking located inside of buildings, on the street, or potentially in parking garages, and reduced and shared parking overall.
- By-right uses for those things that make a downtown healthy, such as townhouses and apartments, mixed-use developments, and retail.
- Denial of non-urban uses, such as automobile salvage yards and car washes.

More detailed information can be obtained by examining the Section 2800 of the Bourne Zoning Bylaw - Downtown District Zoning for details.

Although the zoning is suitable for current plans, there are significant barriers in certain areas of Downtown. Flood zones are predominant toward the western end of Main Street, and future development will have to deal with flood-zone standards, including significant elevation of new structures. On the other hand, some areas within the flood zone have long been traditional centers of commerce and civic activity, and their continuance will be important to the character of the town. Therefore, the Town should seek a grant funding program where funds are given to properties where redevelopment is wanted and flood hazards can be mitigated.

Recommended Actions:

- Revisit design solutions and recommendations from the Flood Zone study.
- Initiate a consultant structure-by-structure cost benefit analysis of flood proofing of existing structures.
- Preserve more flood-prone areas for less growth-intensive civic uses, such as fields, parks and water-dependent facilities.

Wastewater Treatment: The single largest factor limiting development in the downtown is the absence of wastewater collection and treatment systems to accommodate growth. Although Phase 1 or 1A of the GIZ seek alleviation of Cape Cod Commission regulations without additional wastewater treatment capacity, the rest of the town will require additional wastewater treatment in order to grow. The existing wastewater treatment system in place serves the development that is already there, and has some limited reserve capacity for additional development. The wastewater system for Buzzards Bay connects to the treatment plant in Wareham, and is capable of accommodating an additional 70,000 gallons per day of wastewater load. Under the current wastewater treatment regime, only Phase 1 or Phase 1A of the GIZ can be accommodated. Additional development (Phases 2, 2A, and 3) will have to be planned and built concurrently with a major expansion of wastewater treatment.

The Tighe and Bond report studied four different scenarios for wastewater treatment plant expansion. Alternatives "1A" and "1B" involved centralized wastewater treatment, both with and without expansion of the existing wastewater treatment plant at the Massachusetts Maritime Academy (MMA). The other two scenarios (2A and 2B) involved satellite treatment both with and without the MMA. Probable costs were developed for each scenario. Other cost and non-cost factors, such as compliance with state MEPA law and the Cape Cod Commission Act, were also considered.

The results of the alternative comparisons were presented to the Bourne Financial Development Corporation (BFDC) and Bourne Wastewater Advisory Committee in a series of meetings in June and July 2007. On August 7, 2007 the Board of Sewer Commissioners passed a motion to endorse the Committee's recommendation to accept the initial phase of "Alternative 1B" as the recommended plan and proceed with development of an implementation plan and submission of an ENF.

Based on the need for long-term wastewater treatment costs, legal issues and other factors, it was determined that the least expensive and most predictable option was to develop a centralized wastewater treatment facility on land adjacent to the Scenic Highway (Alternative 1B). This assumes a 1,259,000 gpd flow rate at buildout for all sewered areas north of the Canal (assuming existing capacity of 200,000 gpd to the Wareham plant remains in place). The anticipated timeline until operation of the plant to serve Areas 1 and 2 is approximately eight years at a cost of approximately \$47 million.

The recommended plan consists of construction of Phase 1 only (again, this is Phase 1 of the wastewater plan, not to be confused with Phase 1 of this GIZ application). This phase includes providing sewer service to Study Areas 1 (central Buzzards Bay and Hideaway Village to the north) and 2 (north Buzzards Bay/Buttermilk Bay, excluding Hideaway Village). The recommended plan also includes construction of a centralized wastewater treatment facility and groundwater discharge system. Based on the screening performed for this project, the Town-owned parcel on Scenic Highway is the preferred location for these facilities.

Alternative 1B is the least expensive alternative on a total project cost basis, provides the greatest flexibility for expansion starting at the initial phase, and consolidates the wastewater treatment facility and groundwater discharge into a single area, making permitting more straightforward and operation and maintenance of the facilities easier.

There are many benefits of implementing Phase 1 of Alternative 1B of the wastewater plan, including:

- Solving the imperative need for additional wastewater capacity in the Buzzards Bay Area;
- Providing additional wastewater infrastructure to allow for economic redevelopment of the Main Street area of Buzzards Bay;

- Providing for compliance with likely upcoming TMDL regulations to limit and reduce nitrogen loads to Buttermilk Bay and Little Buttermilk Bay;
- Providing for future expansion to other areas north of Cape Cod Canal, including surrounding municipalities;
- Allowing for continued flexibility for future wastewater management considerations for Bourne south of the Cape Cod Canal;
- Recommending utilization of town-owned parcel;
- Minimizing construction impacts;
- Creating a plan that is compatible with many funding and financing sources.

Recommended Actions:

- Implement wastewater management plan as described above.

Water Supply: Although there may be additional supplies in the town of Bourne, or available to the town of Bourne from other places, the existing supply is also near capacity. It is estimated that there is enough remaining supply for an increase in growth-related demand of approximately 15%, although the ecological effects of that increase are uncertain. Clearly, in order for significant additional growth to be undertaken, expansion of the town’s water supply, as well as improvements in water efficiency, must be undertaken.

The District does have concerns with the ability to locate, approve and permit an additional source of supply to guarantee the residents, businesses, tourists and other users an ample supply of safe, clean drinking water. To that end, preliminary efforts have begun to locating an additional well to supplement the necessary capacity for future needs. The exploratory consideration is within District property off of Bournedale Road adjacent to Route 25. Reports generated in the 1980’s identified the area as a potential site and also suggested it be constructed within the next 20 years. Having gone beyond that time frame, the District is hopeful that a new source can be located, tested, permitted and constructed within the next five years.

An area that the District has little control over is a permit requirement that identifies retrofitting all municipal buildings with water saving devices by January 1, 2012. This is an area that can be encouraged by the greater Buzzards Bay public/private organizations. The District supports overall water conservation efforts and the need for conservative rates. Rates will be reviewed; the last rate increase was in 1992. The town has also become a promotional partner in Water Sense with EPA in supporting the use of equipment that has been approved to support water conservation and green technology.

Recommended Actions:

- Coordinate with Buzzards Bay Water District to ensure a long-term drinking water supply for buildout in Buzzards Bay.
- Identify additional areas for conservation and water use efficiency.

Transportation (including parking): There are a number of transportation issues, already described above, that must be established prior to and/or with development in the downtown. The key change to the downtown is redesigning the Belmont Circle rotary, both to reduce conflicts between different traffic flows and to enhance the entrance to the downtown. The

circle in its existing pattern causes traffic congestion, traffic conflicts and safety concerns. Traffic trying to access Route 25 North or coming off of 25 South to access Route 6 East must negotiate with traffic entering and exiting Buzzards Bay from all directions. In addition to these safety and congestion concerns, the circle acts as a psychological barrier to the village, making it difficult to get downtown from all eastern points. Combined with land-use changes, redesigning Belmont Circle will create a sense of “destination” in Buzzards Bay rather than a sense of “pass-through.” Wesley Ewell and the Maguire Group developed a comprehensive transportation plan for Buzzards Bay that outlines key actions for changing Belmont Circle. In short, the proposed pattern widens the ramps to and from Route 25 to two lanes and establishes to a two-way circulatory pattern that integrates traffic to and from Buzzards Bay with through traffic accessing the highways. This also enhances both visibility of and access to the downtown through a “gateway” district and controlled traffic signals. Other important changes include parking (in the form of garages and under-building parking), on-street parking, narrowing of streetscapes to create a feeling of arrival, and increasing the presence of the train and transit services. Most of all, increasing the density and economic diversity of the downtown slows and moderates traffic, establishing Buzzards Bay as a place to go to rather than go through.



Recommended Actions:

- Redesign Belmont Circle with two-way signalized roads consistent with the Comprehensive Transportation Plan written by Ewell-Maguire. Consider an intermodal transportation center within Belmont Circle with parking and facilities for transit (local and regional), commuters, and taxis.
- Reconfigure Memorial Circle as a conventional intersection.
- Reconfigure Main Street, Washington Avenue and Academy Drive into a four-way signalized intersection to improve traffic flows and access to the waterfront area.
- Redesign the Bypass as a boulevard with a bicycle lane, and improved access to downtown.
- Construct a bicycle path the length of the bypass, improve bicycle connections between the

Figure 1 -Before and After: The picture Belmont Circle on the right depicts redesigned traffic patterns, which allow two-way transportation, controlled intersections and easy access to Main Street.

Bypass bicycle path, the Canal path, Main Street, and the Bourne Bridge.

- Work in partnership with developers to build parking facilities, especially in the vicinity of the old railroad station , as well as off Academy Drive to serve tourist rail and downtown development.
- Design and install entrance treatments Eastern and Western Gateways

Flood Zone: Although the flood zone does not run through the entire downtown, it does affect a significant portion of the area targeted for redevelopment, particularly on the western end of town. Not only must the town identify state-of-the-art flood zone management techniques and implement them, but also the town must consider how development potential could be reduced in the most sensitive areas of the flood zone where appropriate and “transferred” to other less flood-prone or more structurally protected parts of town. This will require some innovative zoning, such as TDR, as well as other techniques to get the desired development in the most appropriate places.

As stated earlier in this report, consideration should be given to 1) locating new growth outside of the flood zone as part of a coherent urban plan, 2) identifying the kinds of uses that make economic sense within the least affected areas of the flood zone, 3) relocating existing or planned development from the flood zone to non-flood areas through Transferrable Development Rights (TDR), and 4) locating civic uses, seasonal uses and other low-impact types of development in the flood zone, thus extending the public realm without putting people, structures or investments at risk.

In many cases, some buildings, including historic structures, may not be able to be moved or elevated because of the type of construction, usually masonry or stone. In such cases, thought needs to be given to either removing the structure permanently, retrofitting the ground area to waterproof the foundation and lower sections, and removing or filling basements. In the case of historic or other civic structures, alternative and more flexible uses should be considered.

Finally, there are a number of federal programs that would not only give the town a better standing in terms of compliance but also improve planning and reduce investment risk. Bourne should seek to go beyond federal standards and Cape Cod Commission standards to address sea-level rise and even consider transferring development potential out of the flood zone through TDR and other creative land-use tools.

Recommended Actions:

- Participate in the FEMA Community Rating System (CRS). This will result in lower CRS numbers to gain community-wide discounts on insurance premiums. Complying and even going beyond CRS will not only maximize flood protection but also increase the visibility of Bourne as a model flood-zone community.
- Develop a comprehensive strategy to move potential development to those areas outside of the flood zone.
- Streamline approval of redevelopment process for historic or pre-existing, non-conforming structures that are trying to meet FEMA guidelines. Maintain elevation certificates and create a system for easy access to certificates.

Stormwater Management: Stormwater management is a vitally important element of downtown renewal. Fortunately, the most modern stormwater management techniques can also be part of a downtown beautification plan. Low-Impact Development (LID) techniques should be integrated into the design of the downtown through zoning and design standards. Approaches such as pervious pavement, planters connected to gutter drains, vegetated swales and curbside landscaping can not only treat and retain stormwater before it reaches structural systems but also improve the aesthetics of the streetscape using low-maintenance landscaping.

Fortunately for Bourne, Main Street is excessively wide in many locations. The need to treat stormwater in a way that doesn't add to infrastructure and inordinate expense also presents an opportunity for beautification and renewal. Rain gardens, planters, and other techniques can also be a vitally important streetscape renewal and visual benefit to the town. Streets can be narrowed, traffic slowed, and pedestrian access increased through these applications.

Recommended Actions:

- Narrow Main Street with rain gardens and other stormwater structures along the street. This would not only be an effective means of addressing stormwater management but would also add to beautification of the streetscape and moderate traffic flow.

- Implement Phase II Stormwater Best Management Practices.
- See Design Guidelines for additional information.

[Return to the Table of Contents](#)

VII. Offsets:

Areas Proposed as Open Space/Reduced Development Zones Outside the GIZ

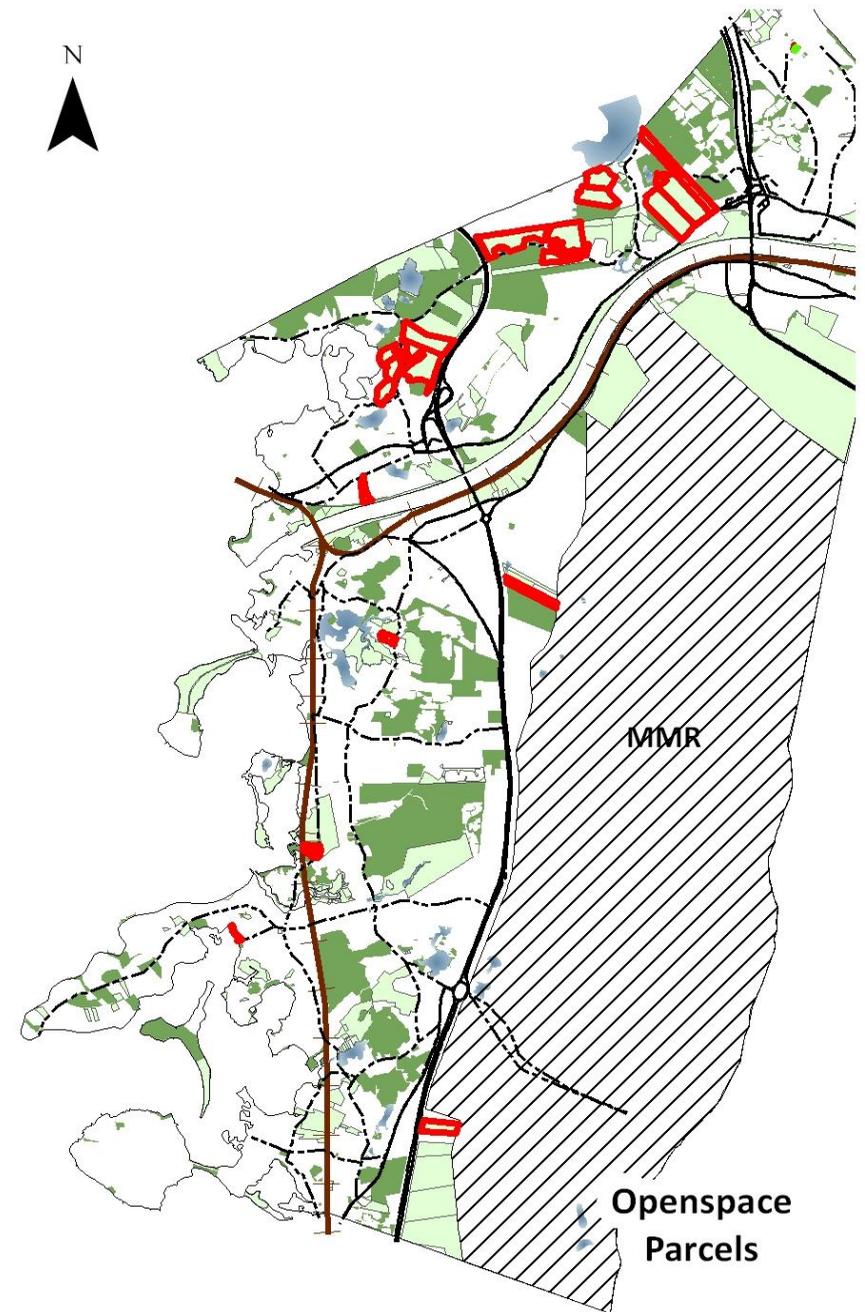
The Open Space graphic shown to the right illustrates the protection efforts over the years within the Town of Bourne. The bold red outlined parcels shows what has yielded during the past 10 years through Land Bank, the Community Preservation Act, and gifts. That number is very significant, involving the protection of 507 acres.

Table 1 -

Summary of Bourne's Open Space Lands		
Level of Protection	Number of Parcels	Total Acres
Perpetuity	228	3,225
Limited	262	1,542
Temporary	72	967
TOTAL	562	5,733

Increases in the density of Downtown need to be considered as part of an overall development approach that reduces development potential in other areas by some commensurate measure. There are a few areas in Bourne where such development potential still exists. The reduction of development potential could take place as the result of land preservation (past or present), density reductions, DRI threshold reduction and undevelopment. In addition, preservation efforts that have taken place within the past five (5) years could be used as an offset to development increases in Buzzards Bay.

Including what has been done within the recent past, the town proposes the following preservation and development reduction approaches as its offset for development in Buzzards Bay.



Density Reductions Outside the GIZ:

Commercial Offsets – Town Acquisition of Commercial Land or Conversion to Residential Use

Commercial offsets are calculated differently, because the impacts, although lower for compact, mixed-use design, are still highly related to square footage. Also, commercial use can have dramatically different impacts, in terms of traffic, environmental factors, and other resources, depending on the type of use – for example, restaurant vs. office.

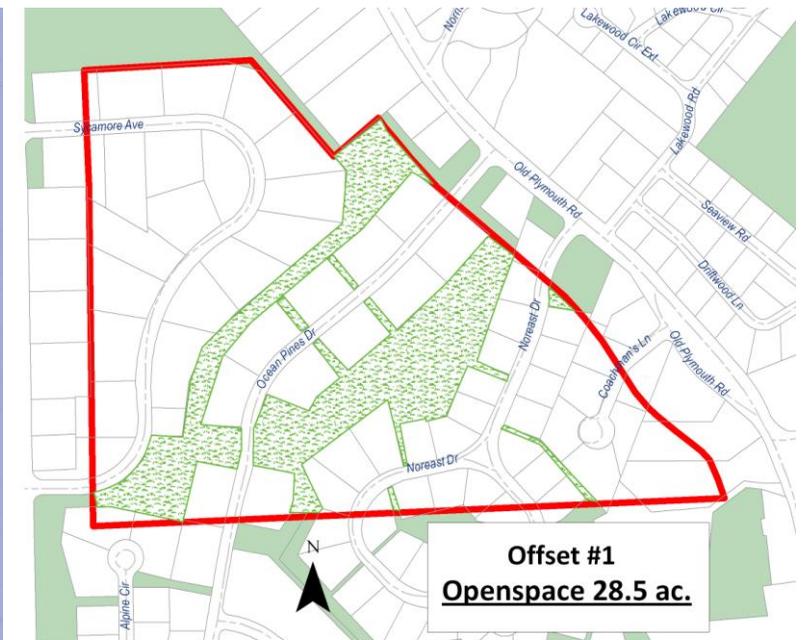
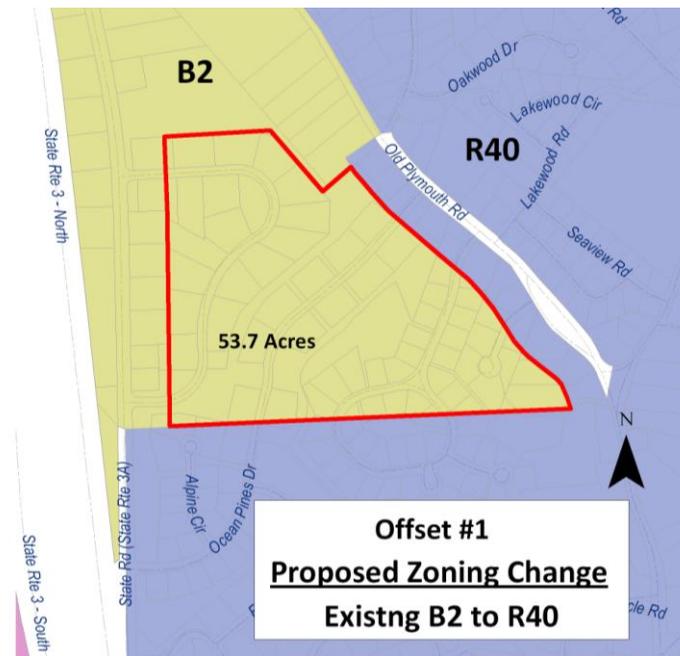
There are areas outside of downtown that are zoned for commercial use, where the design and location are contrary to the interests of compact growth. In such areas, attempts should be made to rid the area of commercial zoning, either by converting it to residential zoning or by placing the land in a permanent conservation restriction. That commercial zoning could then be used as a credit for increased commercial development in the downtown.

As an alternative, commercial land could simply be converted to residential use through a change in zoning. Unless the landowner agrees, however, to protect the land from development through sale to the town or conservation restriction, the land should also be counted as an increase in residential use.

Commercial Offset 1 – B2 Business to Residential: Propose changing commercial designation to residential. Currently BUSINESS B-2 is zoned to accommodate general business development in areas serviced by major traffic arteries, and where conflict with residential development will not be substantial. Also allowed in B2 is residential as permitted in an R40 District.. Therefore, residential use is allowed at 40,000 square foot lots with 125 feet of frontage.

The proposed area is approximately 53.7 acres and is currently developed as residential. Changing the zoning or down zoning will ensure that the area will remain residential in the future

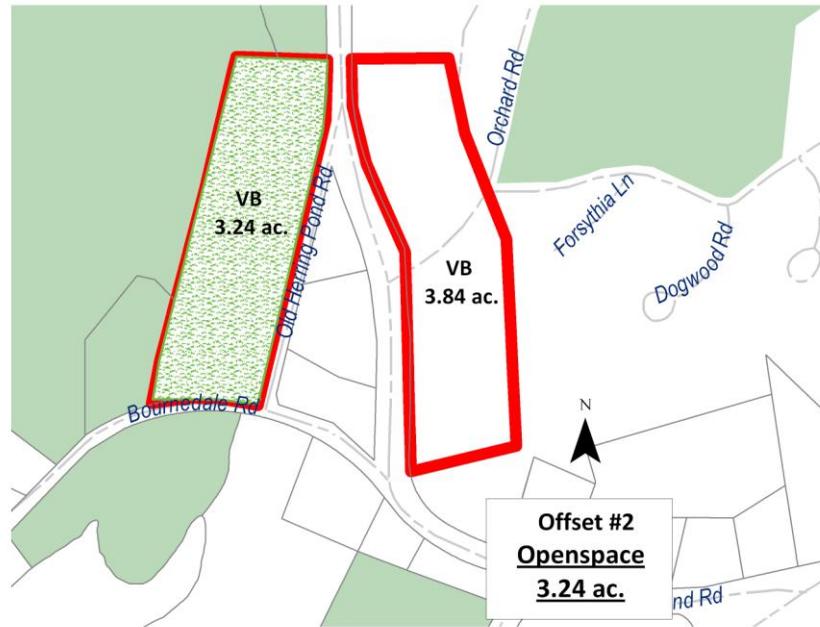
- ¹⁰ Offset 1 – 53.7 acres – 60 Parcels
- Open Space – 28.5 acres
- Single Family dwellings - 55



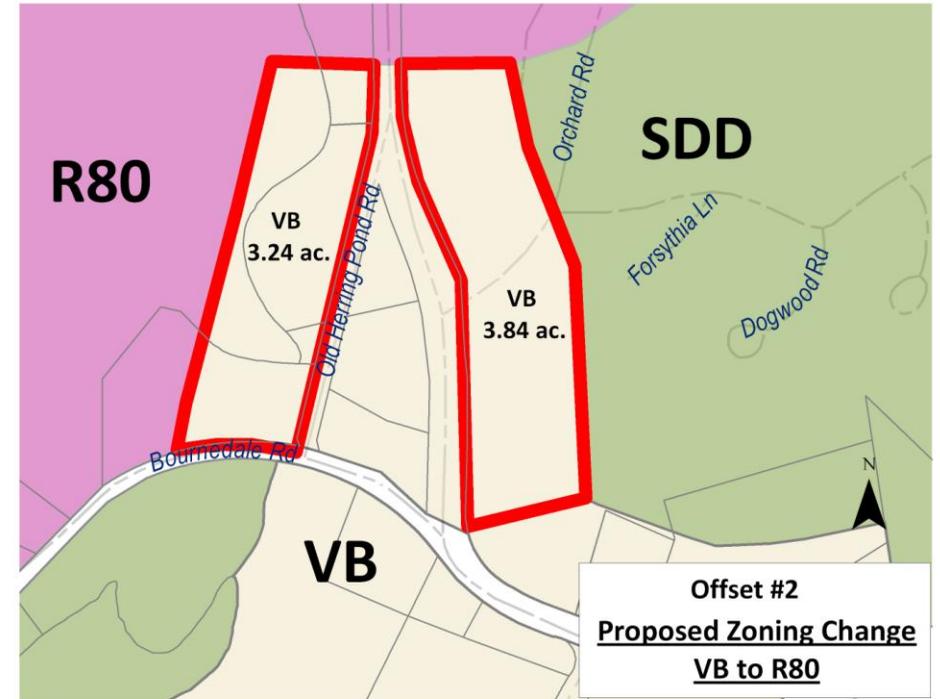
¹⁰ The following calculations were obtained from the Town's GIS

Commercial Offset 2 – VB Village Business to Residential R80: Propose changing commercial designation to residential. Currently VILLAGE BUSINESS is zoned to provide for village-oriented business compatible with small scale environs and nearby residences.

The proposed area is approximately 7.08 acres and is currently undeveloped or used as open space. Changing the zoning or down zoning will ensure that the area will remain open space in the future



¹¹Offset 1 – 7.08 acres total – 5 Parcels
 Open Space – 3.24 acres
 Single Family dwellings - 0



¹¹ The following calculations were obtained from the Town’s GIS

Residential Offsets – Open Space Preservation: Open space preservation offsets are based on those properties purchased within the past five calendar years (see Table 1 below). They are as follows:

Table 2

OPEN SPACE PURCHASES OFFSETS									
Name of Property	Location	Fiscal year purchase	Total Acres	Zoning Minimum lot size at the time of Purchase	Total upland	Total wetland	# Residential units not constructed	In Resource Protection Area (RPA)	In DCPC
Sandy Pond	Sandy Pond Rd Bournedale	2008	19.277ac 839,706 sf	80,000 sf	19.277 ac.	0	10 units	Yes	Yes
Henshaw	Head of the Bay Rd, Buzzards Bay	2008	10.500ac 457,380 sf	80,000 sf	9.618 ac. 418,947 sf	0.882 ac. 38,433 sf	5 units	Yes	No
Eliz Bourne	County Rd	2006	3.780ac 164,657 sf	40,000 sf	2.26 ac. 98,650 sf	1.52 ac. 66,007 sf	3 units	No	No
Clarke	Cove Ln	2010	1.370ac 59,677 sf	40,000 sf	0.408 ac 17,770 sf	0.962 ac 41,907 sf	0 units	No	No
Jaspers	Scenic Highway	2007 CR Restriction	2.1ac 91,476 sf area of restriction = 0.733 ac/ 31,929sf	20,000 sf	31,929 sf 0.733 ac.	0.0379 ac 1,649 sf	1 unit	No	Yes
Gilder*	Gilder Rd	2011	0.57 ac. – 24,829 sf	40,000 sf**	0.57 ac 20,841 sf	0.092 ac. 3,988 sf	1 unit	No	No
					32.3 ac.		20 units		

Transferrable Development Rights: Transferrable Development Rights (TDR) may represent one of the best opportunities to offset development through land preservation, and possibly even through reductions or elimination of existing development in certain undesirable areas. A TDR is a system whereby land development in one area is prevented or even undeveloped in exchange for increased density in those areas where development is desired. Usually the exchange is made such that the landowner giving up his or her development rights is compensated by the landowner who is “buying” those rights in order to build at a higher density in a growth area than would otherwise be allowed.

The transfer of rights can be done in a way that permanently protects large areas of land, or it can be done on a smaller scale (e.g., from one side of a road to the other) in order to reduce sprawl and avoid traffic conflicts. The rights are sold by an individual in the “sending” area and purchased by someone in the “receiving” area. The individual in the sending area receives monetary compensation for his development rights, and the individual in the receiving area receives increases in development density. In this way, the same or even more development can be accomplished on a smaller amount of land, increasing density, reducing sprawl, and compensating all property owners in the process.

A TDR system is still being considered for downtown Buzzards Bay. In particular, TDR would be appropriate for transferring development away from more vulnerable flood zones to higher land in the downtown. In some cases, this is a matter of transferring development a few blocks and in some cases simply transferring development across the street. The result would be a dense downtown with pockets of growth in more protected areas, open space and low-density civic development in flood-prone areas, and much greater overall protection against flooding. A TDR system would be an excellent way to implement the offset requirements of the GIZ subsequent to Phase 1.

Throughout the town, there are a number of undeveloped residential and commercial parcels. This application has described ways in which the commercial parcels are being converted to low-density residential in order to implement a significant commercial offset. The undeveloped residential parcels create an opportunity for TDR. Residential parcels differ in their potential as “sending zones” for a TDR system. Some of the parcels are already subdivided lots that have been sold to individuals for future development. In cases where individual lots are owned by different people, it is unlikely that the lots can be preserved. In other cases, there are whole, undivided parcels owned by one person. In these cases, the parcels may be suitable candidates for TDR.

[Return to the Table of Contents](#)

VIII. BUILDOUT ANALYSIS OF POTENTIAL FUTURE GROWTH IN BUZZARDS BAY

The buildout analysis is particularly complicated based on the complexity of the zoning and the unique nature of the downtown. A number of factors have been considered, all of which require certain assumptions about the zoning. In other words, while zoning might theoretically allow for a certain maximum density, it is realistically controlled by many factors, such as parcel size, owner preference, flood-zone restrictions, economic investment limitations, timing, socioeconomic factors, and other influences, in addition to the maximum allowable density under zoning. Therefore, a set of assumptions needs to be established in order for the buildout to proceed in a realistic way.

Detailed form-based code can be found in Section 2800 of the Bourne Zoning Bylaws, adopted October 2008. (See Table DTD-2 in Appendix for Dimensional Standards) Carefully using the new zoning as a guide, a “buildout spreadsheet” was developed using certain assumptions about development space, needs and requirements (see Figure 1 – “Buildout Calculator”). The buildout attached is for Phase 1 and assumes a buildout based on the fact that there will be first-floor parking and/or building elevation in the flood zone. While there are many important details contained in the zoning, key factors controlling the shape and appearance of downtown can be identified in the following.

a. Density: Then density is controlled by a maximum Floor-Area Ratio (FAR) of 2:1. Regardless of the form of development, the 2:1 ratio serves as the limit on development, absent of a special permit.

b. Height: Zoning allows up to four stories by right. Combined with parking requirements, the 2:1 FAR generally allows for four-story buildings taking up roughly half of the development site, although shorter buildings may be preferred in some cases. The zoning permits buildings with business and retail on the first two floors and residential above. An third/fourth floor setback of 30 feet is required for buildings fronting Main Street.

c. Flood Zone: Flood zone requires that there be no commercial or residential uses on the first floor. In this case, parking is allowed as a use as the first floor of the building. In such cases, parking would be on the first floor, commercial on the second floor, and residential on the third and fourth floors.

d. Residential Density: Allowable residential density is based on total lot square footage. 3,500 square feet is required per unit for market-rate housing. If 10% or more of the housing is provided as affordable, the amount of lot square footage per unit required shrinks to 2,500 square feet. This would allow roughly 17 units per acre. Note also that the amount of square feet per unit can vary greatly depending on a number of other factors, such as parking requirements, setbacks, assumptions about hallways and utilities, etc. In the buildout calculation, the actual square footage per unit comes to around 1,331 square feet – remarkably close to the statistical average of 1,200 square feet for a typical 2-bedroom apartment. Of course, there will be a small percentage of 1-bedroom and 3-bedroom apartments, but largely 2-bedroom units. Therefore, the buildout is based on an average of 2 bedrooms per unit. The actual square footage of any unit will vary depending upon the mix of units and market conditions.

e. Maximum Impervious Surface: The total amount of impervious surface on a lot cannot exceed 80%, including all forms of building and pavement. In addition, there is a projected impervious surface calculation of 12% for such things as walks, roads, and drives, which is subtracted from that 80% to then calculate land available for development or parking.

Open Space@ 20% (required)	170,755
Minus other impervious areas (5%)	34,151
= Area Available for Buildings and parking	648,870

FAR: 2:1 Gross Flr Area (GFA)	2	1,707,552
Building Height (max 52 feet 4 stories)	4	
Building Base Area (maximum)		426,888

Area left for parking 221,982

Potential Floor Uses*:

¹ 1st Flr Parking (Structured-under) potential	426,888
2nd Flr Commercial Office potential	426,888
3rd & 4th Residential (multi-family) potential	853,776
GFA	1,707,552

3	24.1	69	0	MAIN ST	2.16	94,090	0	DEVELOPABLE COMMERCIAL	Y
4	24.1	6	0	MAIN ST	9.18	399,881	0	DEVELOPABLE COMMERCIAL	Y
5	24.1	3	21	PERRY AVE	0.62	27,007	0	DEVELOPABLE COMMERCIAL	Y
6	24.1	5	25	PERRY AVE	3.5	152,460	6,198	OTHR STORAGE, WAREHSE	Y
7	23.2	120.01	218	MAIN ST	1.91	83,200	0	DEVELOPABLE COMMERCIAL	Y
8					19.60	853,776	6,198		

*Assumptions: 1 st floor parking, 2nd floor Office, 3rd & 4th Floors residential.

1000 sq.ft. = 2 bedroom

800 sq.ft. - 1 bedroom

10 units plus req. 10% affordable

3500 sf/unit/lot area market

2500 sf/unit/lot area affordable

Parking reduction is allowed by a Special Permit

² Assume a 1/3 split for unit type one bedrm two bedrm

	Potential #	# Units	Sq. Ft. req.
Residential Units (Potential)			
Market:		220	768,398
Affordable: 10%-2500sf	24.39	24	60,000
TOTAL 3500 sq.ft. of lot area/unit	244	244	828,398

	# Sp Req.	Sq. Ft. req.
Parking Spaces		
Residential		
Multi-family (1.5 sp/unit)	365	
Guest Spaces (1 sp/10 units)	37	
Total Residential Spaces:	402	
Commercial		
Office (Medical) 4 sp/1000 sq.ft.	427	1708
Total # of spaces req. (inside & outside)	2,109	
Outdoor Area left for parking	221,982	

Parking Space (outdoor) 420 sf.	529	221,982
Structured parking (indoor) 300 sf.	1,581	474,261

Wastewater

	# of Units	Total WW	
Residential 110 gpd/bedroom ² Total	244	26,790	gpd
2 bedrooms	161	17,681	gpd
1 Bedroom	83	9,108	gpd
Commercial (Office) 75 gpd/1000	427	32,017	gpd
Wastewater Loading (gallons per day)			0.07575
TOTAL WASTEWATER	58,806		

* Assumes commercial sf available on site is all used.

** Apartments will vary in size; outside deck space, setbacks not included.

*** Under Title V, commercial load doubles; total load =

**** Assumes .66 low ww load, .34 high ww load.

[Return to Table of Contents](#)

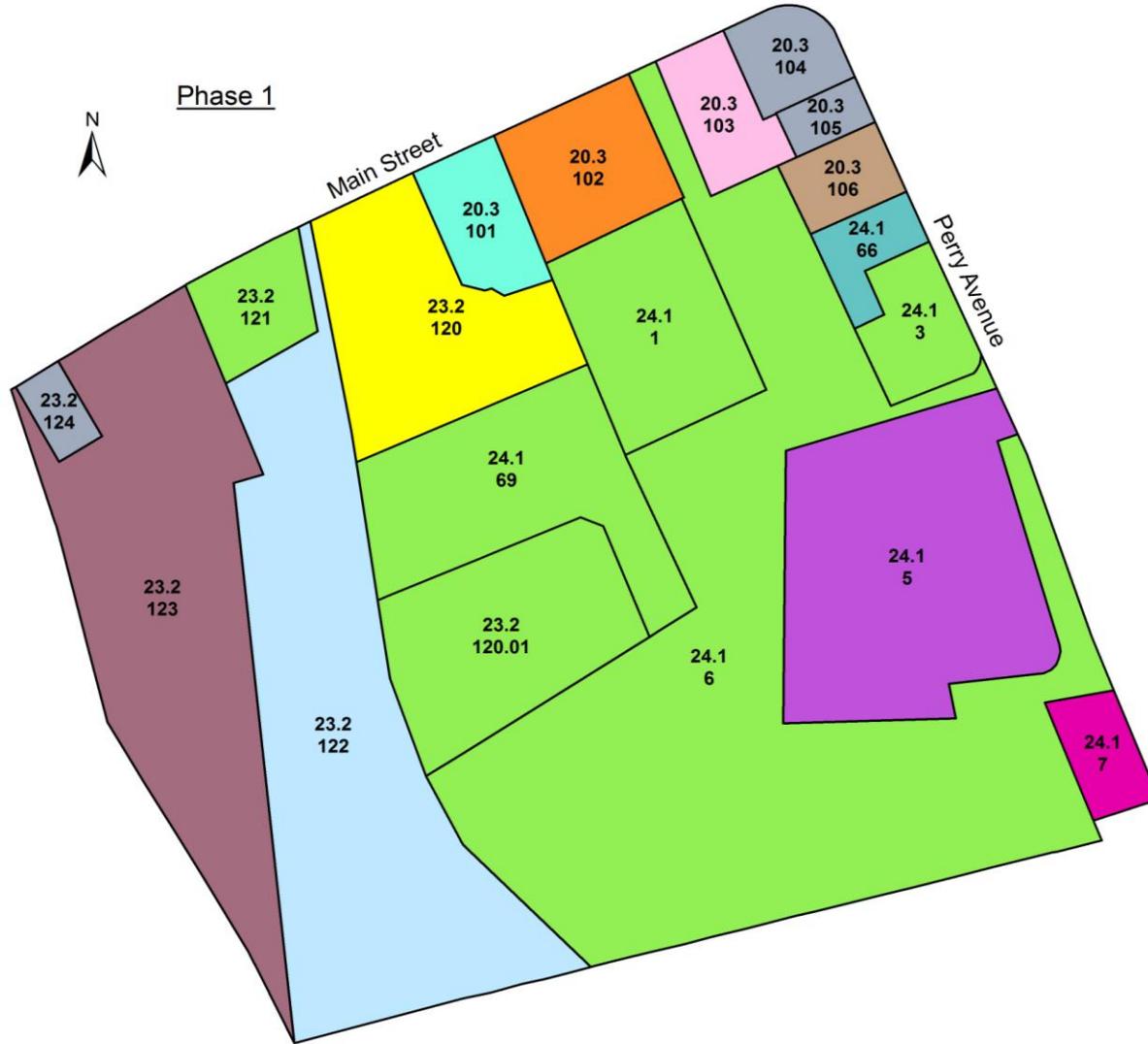


IX. APPENDIX

TABLE DTD-2: SITE AND BUILDING DIMENSIONAL STANDARDS FOR THE DOWNTOWN DISTRICT (establishes the lot, bulk, height, and setback ranges)		
STANDARD	BY RIGHT	WITH SP BY PB
BASE RESIDENTIAL DENSITY		
Market Rate Housing	1 unit/3,500 s.f. of Lot Area	1 unit/2,000 s.f. of Lot Area
Market Income Housing (Section 2842)	1 unit/2,500 s.f. of Lot Area	1 unit/1,500 s.f. of Lot Area
BUILDING HEIGHT		
Principal Building	4 stories maximum (52 feet)	Maximum height to be determined by the SPGA under criteria in Section 2827 and 2838
	2 Stories Minimum (22 feet)	1 story minimum with 15 feet height required for front façade by SPGA under criteria in Section 2827 and 2838
Outbuilding	2 stories maximum	Not Applicable
Building Height Special Requirements	On Primary Streets (Figure DTD-2), buildings that have residential uses facing the primary street on the first floor shall raise the first finished floor at least 2 feet above sidewalk grade.	
	On Primary Streets, stories at the sidewalk level in non-residential use shall be no less than 12 feet in height from the finished floor to finished ceiling	
	A single tower on a building defined as a habitable portions of a building above the roof level with a foot print less than 240 square feet, shall not be subject to height limits.	
	Basements that emerge less than 4 feet from finished grade or attics not exceeding 4 feet at the knee wall shall not constitute an additional story.	

LOT OCCUPATION		
Lot Area	3,500 square feet	No minimum
Lot Width	40 feet minimum	25 feet minimum
	180 feet maximum	500 feet maximum
Lot Coverage	80% maximum	100% maximum
Floor Area Ratio (FAR)	2:1 maximum	3:1 maximum
BUILDING SETBACK		
Primary/Front	0 feet minimum 15 feet maximum	30 feet maximum under criteria in Section 2835
Front Setback Exceptions	The maximum front yard setback only applies to portions of a building meeting the minimum façade requirement. On Primary Street intersections, the maximum setback for chamfered corners shall be 20 feet from the lot corner to the center of the building façade that faces the lot corner. All structures fronting the Buzzards Bay Bypass shall be set back at least 10 feet from the property line. All structures on Main Street between Perry Avenue and Belmont Circle shall be set back at least 10 feet from the right of way line.	
Primary/Side	0 feet minimum	Not Applicable
	24 feet maximum	No minimum
Primary/Rear	10 feet minimum	No minimum
Outbuilding/Front	20 feet minimum	10 feet minimum
Outbuilding/Side and Rear	5 feet minimum	No Minimum

Phase I – Land Use Map



MAP_PCL	LOCNO	LOCST	ACRES	STATE CLASS CODE	LAND USE	STCLASS #
24.1_001.00	0	MAIN	1.82	Commercial Vacant	VACANT DEVELOPABLE COMMERCIAL	390
24.1_006.00	0	MAIN	9.18	Commercial Vacant	VACANT DEVELOPABLE COMMERCIAL	390
24.1_069.00	0	MAIN	2.16	Commercial Vacant	VACANT DEVELOPABLE COMMERCIAL	390
24.1_007.00	0	PERRY	0.41	Industrial Vacant	VACANT DEVELOPABLE INDUSTRIAL	440
20.3_105.00	7	PERRY	0.2	Commercial	COMMERCIAL-RESID - Mixed Use	31
20.3_106.00	11	PERRY	0.38	Industrial	TELEPHONE EXCHG STA	430
24.1_066.00	19	PERRY	0.379	Residential	RESID-COMMERCIAL - Mixed Use	13
24.1_003.00	21	PERRY	0.62	Commercial Vacant	VACANT DEVELOPABLE COMMERCIAL	390
24.1_005.00	25	PERRY	3.5	Commercial	WAREHSE/DISTRIBUTION	316
23.2_124.00	196	MAIN	0.183	Commercial	COMMERCIAL-RESID - Mixed Use	31
23.2_123.00	200	MAIN	4.22	Commercial	BOWLING	370
23.2_121.00	210	MAIN	0.6	Commercial Vacant	VACANT DEVELOPABLE COMMERCIAL	390
23.2_122.00	212	MAIN	5.05	Exempt	OPEN SPACE	903
23.2_120.01	218	MAIN	1.91	Commercial Vacant	VACANT DEVELOPABLE COMMERCIAL	390
23.2_120.00	220	MAIN	1.79	Commercial	POST OFFICE	350
20.3_101.00	228	MAIN	0.64	Industrial	RESEARCH/DEV FACILITY	404
20.3_102.00	230	MAIN	1	Commercial	MEDICAL OFFICE BLDG	342
20.3_103.00	236	MAIN	0.563	Commercial	AUTO VEH-SALES/SERV	330
20.3_104.00	240	MAIN	0.511	Commercial	COMMERCIAL-RESID - Mixed Use	31



Buzzards Bay Bypass

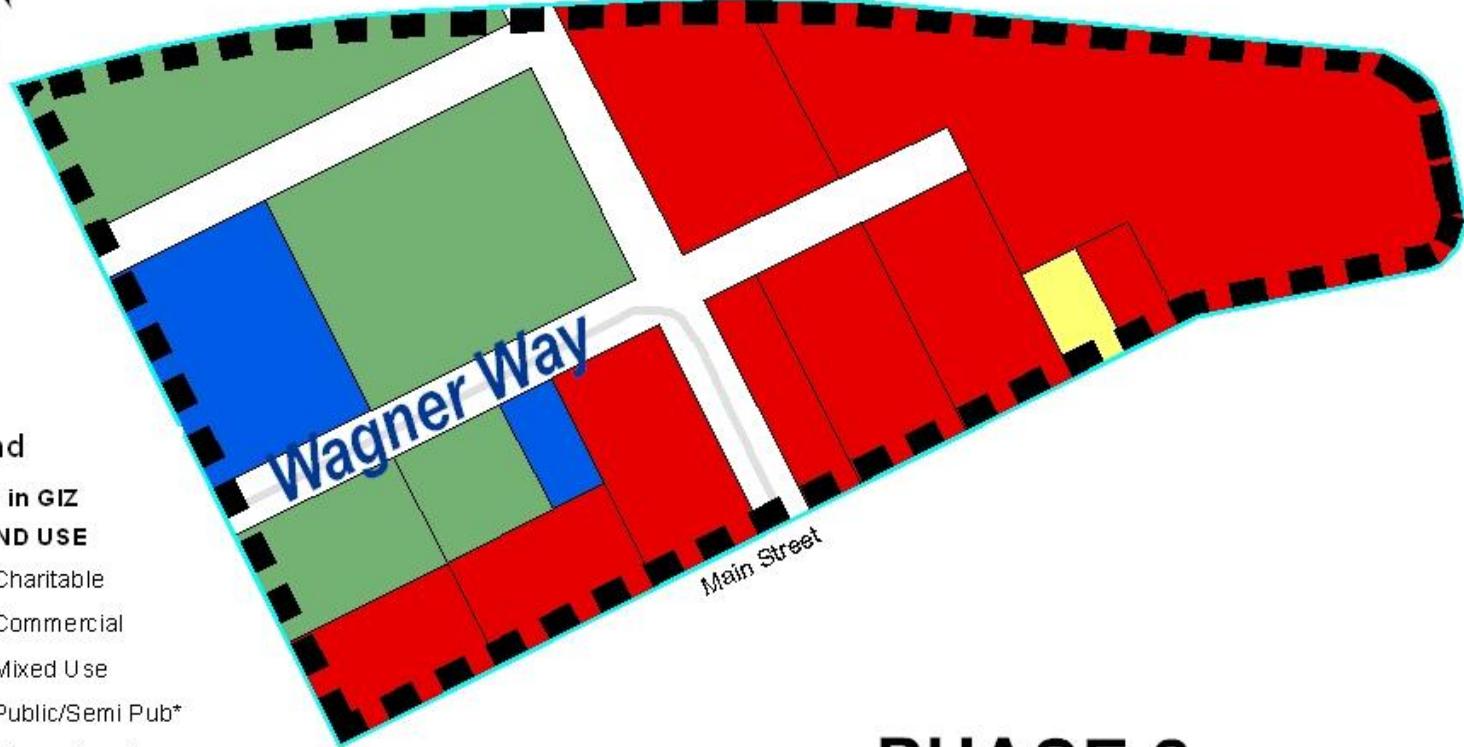
Wagner Way

Main Street

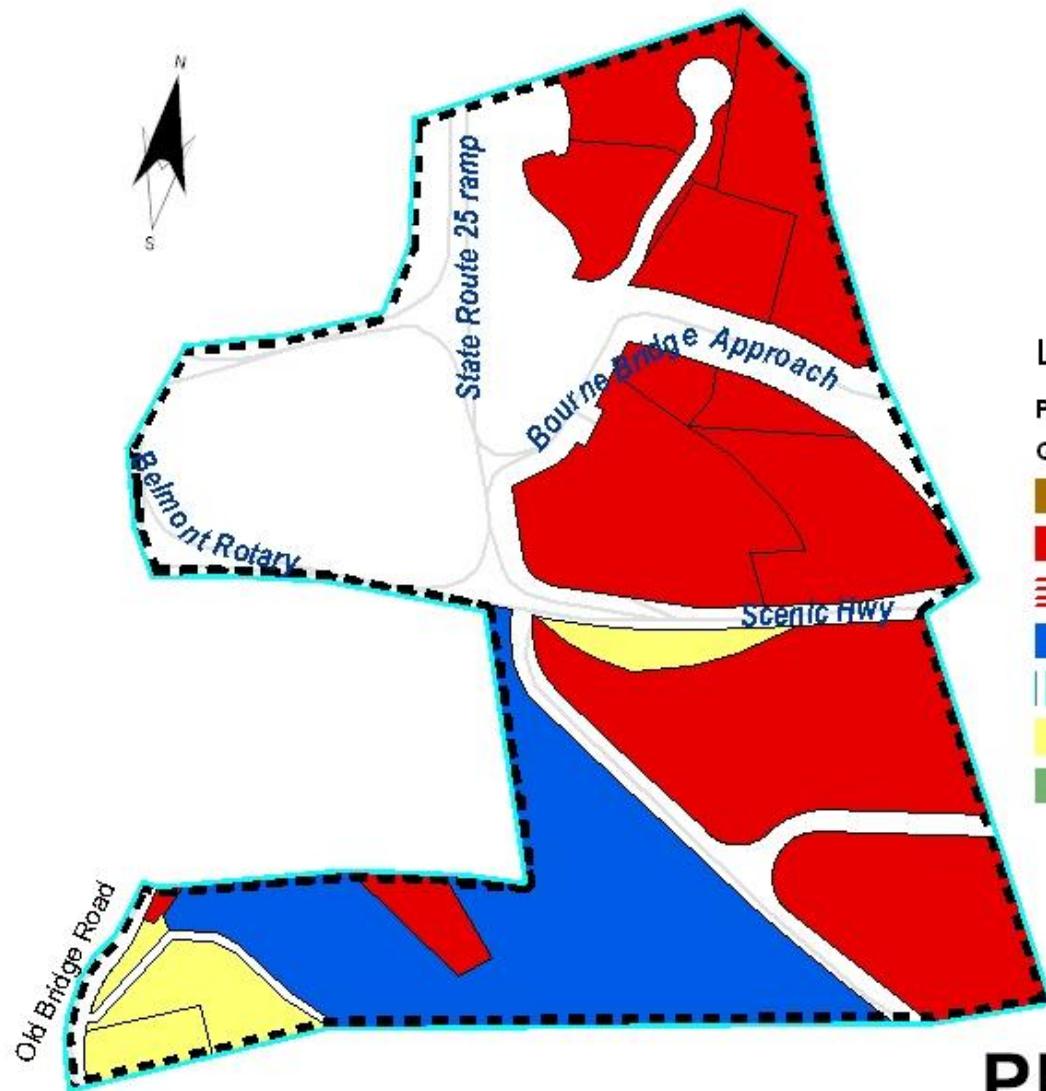
Legend

**Parcels in GIZ
GIZ LAND USE**

-  Charitable
-  Commercial
-  Mixed Use
-  Public/Semi Pub*
-  Recreational
-  Residential
-  Vacant



PHASE 2



Legend

Parcels in GIZ

GIZ LAND USE

- Charitable
- Commercial
- Mixed Use
- Public/Semi Pub*
- Recreational
- Residential
- Vacant

PHASE 3



Belmont Rotary

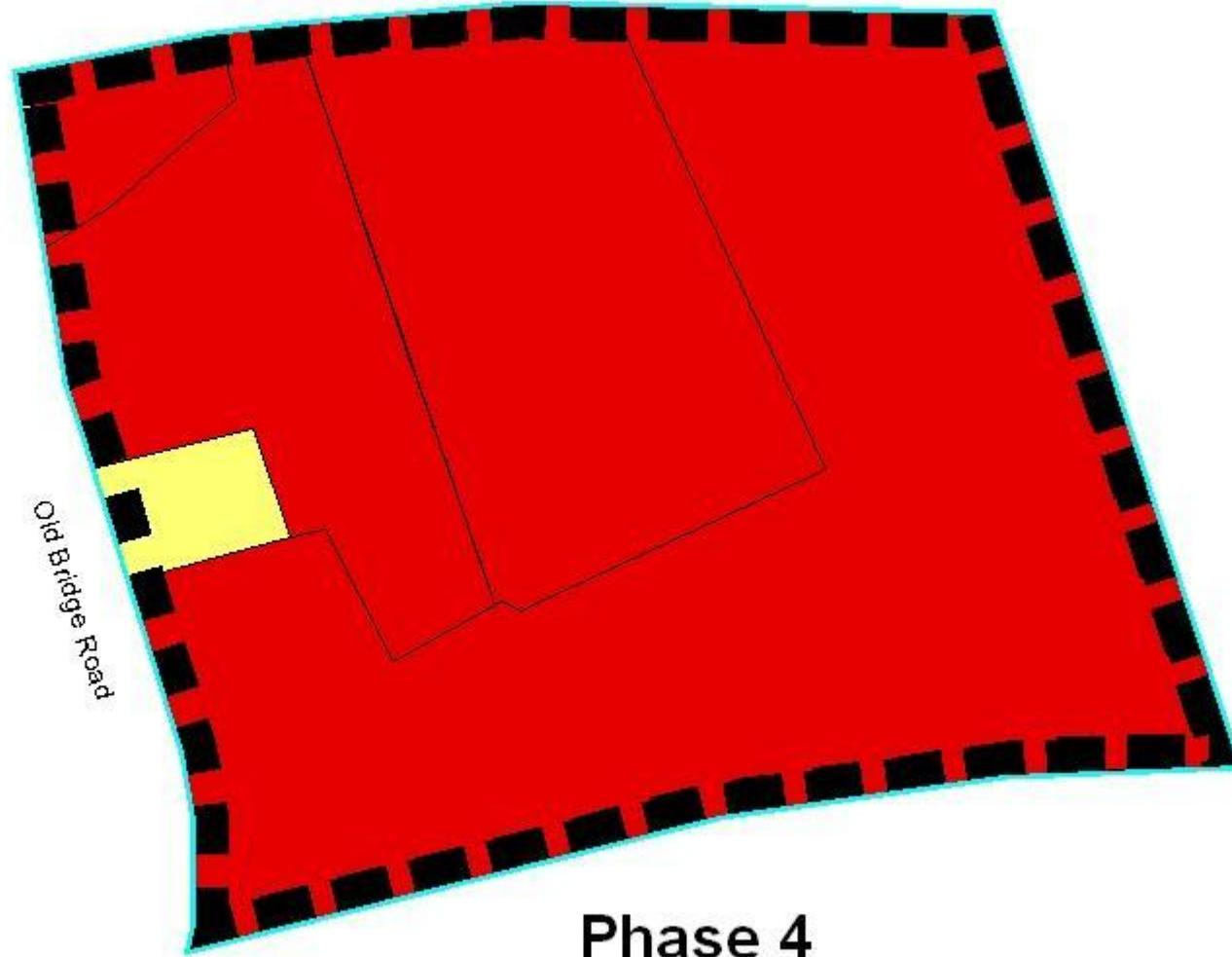
Old Bridge Road

Legend

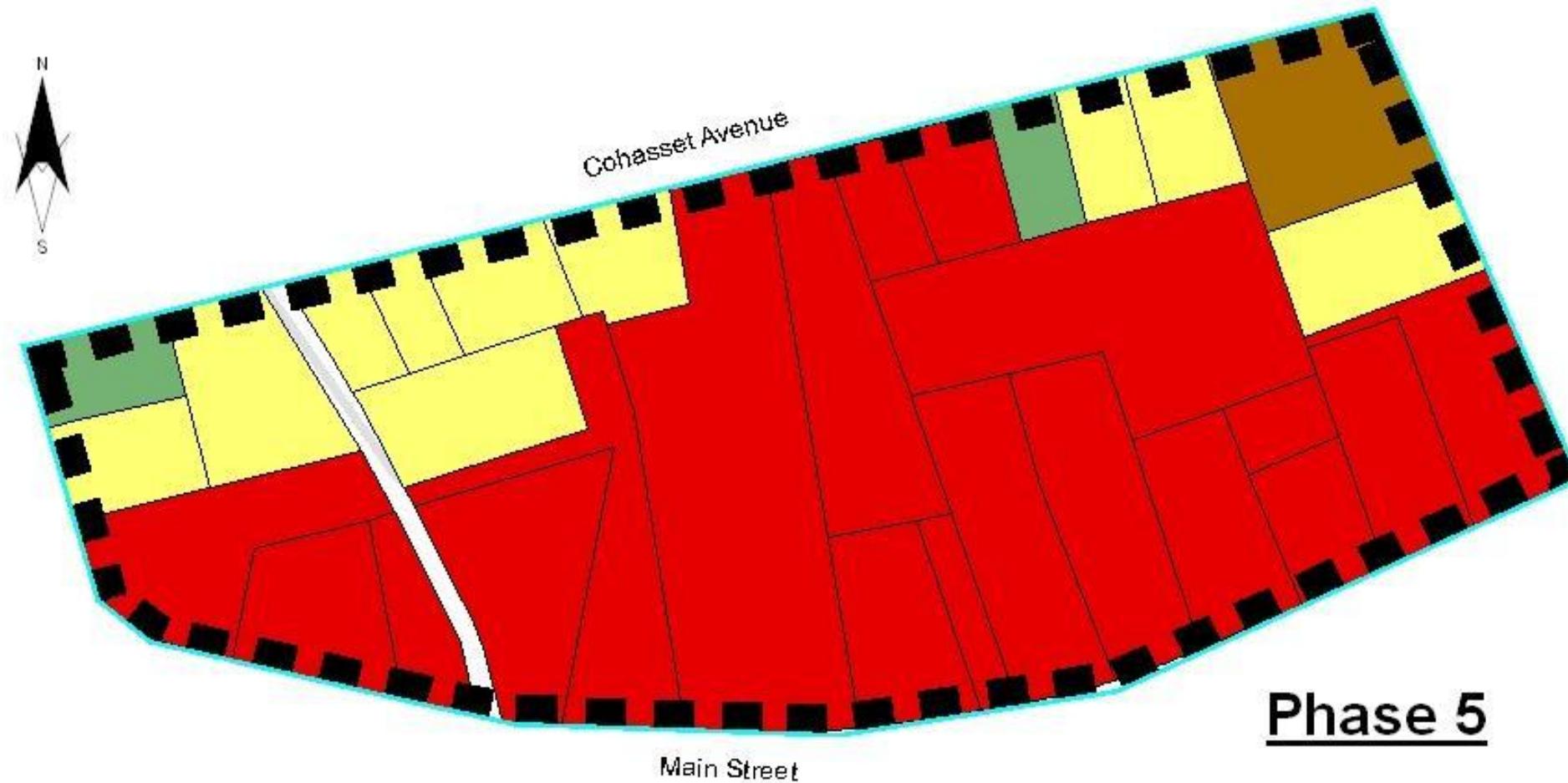
Parcels in GIZ

GIZ LAND USE

-  Charitable
-  Commercial
-  Mixed Use
-  Public/Semi Pub*
-  Recreational
-  Residential
-  Vacant



Phase 4



Legend

Parcels in GIZ

GIZ LAND USE

-  Charitable
-  Commercial
-  Mixed Use
-  Public/Semi Pub'
-  Recreational
-  Residential
-  Vacant

Phase 5

List Supporting Documents

Comprehensive Transportation Plan – June 20__
Bourne Zoning Bylaw
Downtown Vision Plan – 2008
Disaster Mitigation Plan
Wasterwater Study
Flood Zone Study
Local Comprehensive Plan

