Executive Summary
Canal Street Crossing

Project Description:

The Applicant is seeking a Development of Regional Impact Minor Modification, Type 2, for the Canal Street Crossing project. The original project consisted of a 3-story medical office building (MOB), a four-story Assisted Living Facility (ALF) and Age Restricted Townhouses. The modification reduces the MOB from three floors to a two floors, eliminates the ALF component and, in place of the ALF, adds 17 townhomes to the project (for a total of 32 townhomes).

The proposed development will continue to create a much-needed medical complex to service the region's aging population, just on a smaller level. The design rationale is to create a convenient and accessible means to healthcare and remains unaltered by this modification. The goal is to allow residents an "Aging in Place" option keeping them in the community while allowing them out of their existing homes, which will help free up local/regional housing stock. The Canal Street Crossing complex has an ideal location for the Aging in Place population as it is in close proximity to emergency services, transportation, recreation areas and food services.

The revised project involves construction of a two-story Medical Office Building (MOB) structure with associated parking and utilities. This building has been designed in accordance with the newest Regional Policy Plan (RPP) and applicable Technical Bulletins. The Applicant has also endeavored to comply with contextual design guidelines by changing building element heights and roof types to create a rhythm that echoes traditional village patterns. Construction and facade materials have also been selected to reflect the traditional Cape Cod aesthetics. Please refer to Exhibit 3 – for the revised Architectural Summary and Plan Set 2 for the revised – Architectural Plans & Renderings for additional information.

As stated, the modification will increase the number age restricted townhome units from fifteen to thirty-two. These units will be developed in a semi-clustered configuration. These homes offer a housing diversity option to Sagamore Beach. The Applicant proposes to set aside 12.5% of the Townhouse units as affordable (4 units). These units to be held as "affordable" in perpetuity which directly addresses Technical Bulletin objectives HOU_1, HOU_2 and HOU_4 in Housing Technical Bulletin by providing a housing diversity, allowing senior to migrate to more appropriate housing, and by "freeing up" local housing stock.

Location and Geography:

The proposed development parcel is located just north of the Cape Cod Canal near the Sagamore Bridge. The existing site contains approximately 10.95 acres of undeveloped land that has frontage on both Canal Street and Hunters Brook Road in the Village of

Sagamore Beach, Bourne, Massachusetts. The parcel contains 74% Suburban and 26% Natural Placetypes as identified in the 2018 RPP data viewer. The parcel is currently undeveloped with a pine-oak forest, typical of Cape Cod. Site topography is defined by prominent ridges and depressions representative of glacial outwash landforms. A wetland feature and its associate buffer zone is located on the western side of the property near Canal Road.

According NRCS mapping, the site is underlain by Merrimac fine sandy loam soil and is considered *somewhat excessively drained*. Group A soils are typically formed in glacial outwashes and consist of sands and gravel. On-site test pitting and soil borings confirms the soil mapping. Additionally, surficial geology maps estimate the depth of these sands and gravels to be between 100 and 200-ft.

In order to meet the Water Resources Technical Bulletin Objective WR_1 , the Applicant engaged GeoHydroCycle, Inc. to perform a hydrogeologic investigation on the property. This investigation determined that groundwater generally flows in a southerly direction towards the Cape Cod Canal. The seasonally adjusted groundwater elevations are range from elevation 7.0 to elevation 5.7 NAVD across the parcel. Additionally, a double ring infiltrometer test estimates the vertical hydraulic conductivity of these soils at 59.6 ft/day. Refer to Exhibit 23 for a copy of the Hydrogeologic Report and MassDEP approval. The modification has reduced the project's wastewater needs substantially reducing flows from 22,850 gallons per day (gpd) to 9,970 gpd. As such, the project's permitting has moved from a Groundwater Discharge Permit (310 CMR 5.0), required for flows over 10,000 gpd, to a Title V (310 CMR 15.00) septic systems for flows under 10,000 gpd. Additionally, to meet nitrogen reduction goals, an Innovate/Alternative (I/A) Title V system is being proposed. Based on the chosen I/A's historical performance, the calculated annual nitrogen load will be approximately 203.12 kg-N/yr. as compared to 213.13 kg-N/yr under the original proposal. Please see Attachment E with Exhibit 24 – Wastewater Engineering Summary that provides a comparison of annual nitrogen discharges.

The proposed I/A system is the NiTROE by KleanTU, LLC. The NiTROE technology has been successfully used throughout Cape Cod to treat wastewater. The system is composed of a primary settling tank, anoxic treatment and de-nitrification prior to discharge. Historically the system has decreased effluent nitrogen concentration to around 7 mg/l-N and they hold a Provisional Use Permit with MassDEP for systems under 2,000 gpd. The proposed system(s) will require a Piloting Use Permit as they are both over 2,000 gpd.

Neighborhood:

The Canal Street Crossing site is abutting several commercial developments. These existing commercial properties consist of standalone single use structures and a strip mall as well as vacant development sites. These existing developments do not represent the RPP's vision for Cape Cod and lend no contextual identity to the proposed development.

Neighboring residential properties do however reflect RPP goals for type diversity and traditional characteristics. The housing types include a mix of single-family dwellings, clustered single-family units, and multiple unit townhouse structures. The general appearance of the residential units is consistent with the RPP vision using traditional cedar shake and clap board style siding.

The western most side of the parcel is zoned under Bourne's B-2 Business District. The remaining land falls under the R-40 Residential District. The entire parcel is subject to the Senior Care Overlay District (SCOD). Refer to the Exhibit 14 for more detail with respect to the use and design guidelines of this Overlay District.

The Applicant has submitted a Project Notification Form with the Massachusetts Historical Commission and received confirmation of delivery on October 25, 2017 (Exhibit 10). No further requests were made with respect to the subject property by the Massachusetts Historical Commission.

Wetland Resources

A depression located near Canal Street contains wetland indicator plants and meets the criteria of a bordering vegetated wetland system. This bordering vegetated wetland delineation has been verified by an Order of Resource Area Delineation (ORAD) (SE7-1983) issued by the Bourne's Conservation Commission in accordance with the Massachusetts Wetlands Protection Act Regulations, 310 CMR 10.00. A copy of the ORAD is contained in Exhibit 12. The site also submitted a Notice of Intent application and subsequently received an Order of Conditions (OOC) on October 3, 2019 from the Bourne Conservation Commission. Additionally, the applicant received a three-year extension to the OOC which keeps this OOC permit active until October 2, 2025. A copy of the OOC and OCC extension approval is presented in Exhibit 12. The proposed modifications do not affect or change the extent of impact already permitted by the Cape Cod Commission and the Town of Bourne within and in the 100' buffer to the onsite wetland system.

Wildlife & Plant Habitat:

The Applicant commissioned a Wildlife Habitat Evaluation Report in accordance with the Cape Cod Commission's Technical Bulletin. This study was performed by Tunison Environmental Consultants and involved multiple site visits. Evaluation results are presented in Exhibit 18 and 19 respectively. Please note that this study identified a significant cover of invasive species within the wetland system and its associated 100-ft buffer zone. Exhibit 19 and 27 offers an invasive species eradication and ecological restoration plan in accordance with Objectives WPH_1 and WPH_2. It should be noted that this modification does not change any designs associated with the wetlands and associated buffer zones.

Natural Heritage mapping indicates the parcel does not contain estimated habitat for rare species nor is it in an Area Critical of Environmental Concern (ACEC). Review of

MassGIS data for Bourne, indicates the parcel does not contain BioMap2 Core Habitat and/or Critical Natural Landscapes.

Standing water continues to observed in the upper reach of the wetland system was evaluated in the Spring of 2018 for vernal pool indicators by Tunison Environmental Consultants. This study is presented in Exhibit 18 and indicates that the ephemeral ponding does not qualify as a vernal pool.

Site Design & Layout

The modified project will be serviced by paved roads, walks, and parking areas creating new impervious area of approximately 4.46 acres. This has been reduced from the originally approved 4.76 acres. Site landscaping areas and other site disturbances equal approximately 2.9 acres. The remaining 3.6 acres (33%) of the property will remain in its natural state.

Access to the site has been vetted through public outreach efforts and meetings with local officials and has been discussed with the Cape Cod Commission staff. It has been determined the project will be best served with two distinct access points; one commercial entrance and one residential entrance. Exhibit 16 – Access Letters expresses the wishes of local officials relative to access and public safety as well as looping for potable water. It should be noted that one way access from the residential development can access the MOB site. This paved accessway will allow for emergency services to gain alternative access to the MOB and allow residents from the development to access the MOB site and gain egress onto Canal Street.

Commercial access will originate at Canal Street in the vicinity of the former Friendly's Restaurant (presently this parcel being developed as a Starbucks). Canal Street is a state-maintained road with a handicap accessible sidewalk on one side and designated bicycle lane.

This access point will allow pedestrian, bicycle and automobile traffic to migrate to and from the proposed MOB to recreation areas to the south and existing commercial areas to north of the project site including a fueling station, and MassDOT's Bourne Park & Ride Lot as well as restaurants retail stores and the Sagamore Post Office. The commercial access will provide a unique sense of entry in accordance with 2018 RPP design guidelines by including village style streetscape signage and ornamental lighting. This entrance and will support all the traffic to the the MOB and potential partial egress from the residential portion (32 townhomes) of the proposed development.

The proposed commercial access will necessitate the need to cross a Natural Area Placetype and design plans are not being changed from the original DRI approval. Understanding the importance of Cape Cod's wetland resource areas, the Applicant plans to install, as previously approved, a 65-foot, free span bridge across the parcel's wetland. The bridge will provide both vehicular traffic and pedestrian traffic as well utility interconnection without permanently disturbing the wetlands.

The MOB has been located toward the rear perimeter of the lot in line to achieve the SCOD goals. On-site parking will be located in front of the building with employee parking to the sides and rear. This strategy may at first appear to contradict Design Guidelines 12a, however it is functionally correct for this application as the main point of ingress/egress to these commercial uses are located in the front of the buildings. Also, there is significant buffering from both street frontages.

The site design will encourage pedestrian traffic via an interior sidewalk/crosswalk system. The sidewalk system will be augmented with communal areas for the residential dwellings including a pickleball court. Additionally, the Applicant still commits to constructing a new crosswalk near the commercial entrance to provide interconnection with the existing sidewalk and bicycle path on Canal Street.

Age restricted townhouse units are clustered and primary access will be provided by a driveway off of the Hunters Brook Road frontage. The access drive will be private and will have a reduced width (20 feet) roadway to minimize impervious areas and to match Hunters Brook roadway characteristics. The commercial parking area and the age restricted residential road will be interconnected by a one-way paved access road. Historically access would have been gained by a reinforced soil access drive restricted to emergency vehicle travel only as requested by the Fire Department. Utility interconnections will loop underground though both the commercial and residential development. More detailed information is provided in the attached site plans and Traffic Impact and Access Study and Traffic Addendum presented as Exhibit 17.

Utilities

Wastewater generation is estimated at 9,970 gallons per day (MOB=4,000 gpd and Townhouses 5,970 gpd) using Massachusetts Title V sewage flow design criteria as set forth in section 15.203 of the regulation for each respective use. The age restricted townhouse units will be serviced by a conventional gravity sewer collection system sewer consisting of pipes and manholes located in the roadway. The MOB will have a dedicated building sewer line discharging directly into the primary settling tank. All the collected sewage will be directed to the respective NiTROE I/A system prior to subsurface discharge. Refer to Exhibit 24 Wastewater Summary for a comprehensive discussion of the wastewater treatment system. Please refer to Plan Set 1 for details regarding wastewater collection and treatment.

All potable and fire service water will be provided by North Sagamore Water District's (NSWD) municipal system. The water demand is expected to be reduced from approximately 22,850 gpd to 10,000 gpd based on the eliminating the ALF. Water service will be via a new 8-inch water main looped through the project from Canal Street to Hunters Brook Road (approximately 1,000 lf).

Discussions with NSWD coupled with existing flow data indicate the water system has adequate capacity to accommodate this development. The looped main will have new fire hydrants located

throughout the project site as directed by the Bourne Fire Department. The Applicant also intends on installing a small irrigation well on the property to maintain landscaped areas with an estimated withdrawal rate of less than 1,000 gpd.

Stormwater runoff will be generated from the development's new impervious surfaces including, driveways, sidewalks and roof areas. Runoff will be collected and treated in compliance with Massachusetts DEP Stormwater Policy using best management practices (BMP). Treated stormwater will be infiltrated in subsurface galleys. The modification design uses low impact design (LID) rain garden BMP's as part of the stormwater collection and treatment system. Roof runoff will be directly infiltrated without treatment. Please refer to Exhibit 25 - Stormwater Design Summary and Calculation and Plan Set 1- Site Plans for more detailed information.

All electric distribution and communication lines will be run underground in accordance with RPP Design guidelines.

Landscape

Landscape planning design was originally performed by Joseph Coan Landscape Architecture. The planting scheme utilizes draught tolerant and native species to reduce irrigation needs. All ornamental landscape beds will be irrigated with buried drip line devices.

Lighting & Energy

The project will utilize low energy LED lights and will be "dark sky" compliant. Please refer to Plan Set 1 for lighting layouts and Exhibit 22 for revised Outdoor Lighting Specification Sheets. As presented in Exhibit 13, the development will take seek to use a percentage renewable energy for their electrical needs. Additionally, the MOB will be designed/constructed in a way that it would be eligible for LEED accreditation. It should also be noted that the age restricted townhomes will be designed/constructed in a way that is will "Stretch Code" compliant.

ConclusionThe proposed modification provides for much need housing stock locally and regionally. Overall, the project will provide short-term construction jobs for over 100 workers and will create multiple full-time skilled medical jobs. Please refer to Economic Impact Assessment presented as Exhibit 15 for further detail. The focus on this project, as modified, is to provide for housing and medicals services for Barnstable County's aging population which fully complements the Housing Market Analysis (dated June 30, 2017) that was prepared for the Cape Cod Commission. This report states "The senior household population on the Cape can absorb 11,000 units divided over five major housing types: independent ownership, independent rentals, continuing care retirement communities, continued care facilities and skilled nursing homes." This project, as modified, focuses on this need and has taken all applicable aspects of the RRP and Technical Bulletins into consideration while designing this project. The proposed modifications to the approved project reduce impact to the resources protected by the Cape Cod Commission Act and RPP as compared to the original approval while providing additional, needed, housing. It

should be noted that the Updated Housing report in March or 2023 did not provide details with respect to the needs for senior housing specifically, but indicate… "demand is projected to outstrip supply in the Mid, Lower and Outer-Cape through 2050, with only the Upper Cape potentially having enough housing." We believe the project, as modified, is highly suitable based on its accessibility, proximity to "village" related services, transportation and recreation. It should also be noted that the SCOD was approved through a 2/3 majority vote to create this overlay district in May of 2018 and will provide many short and long term benefits to this community.

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