

# TOWN OF SOUTH HERO TOWN PLAN 2023-2031



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# Introduction

## Goals & Objectives

1. Strive for public participation in the planning process at all levels.
2. Understand what the Town's residents want for the future "look and feel" of the Town balanced against the potential impact on taxes.
3. Build upon and continue to improve our relationships with neighboring towns.

## Implementation

1. Encourage citizen participation at all levels of the planning process.
2. Continue working with Town residents to find ways to turn their vision for the future of South Hero into reality.
3. Collaborate with other municipalities and regional organizations to address important regional issues, such as improving water quality in Lake Champlain.
4. Consider the impact of land use decisions on adjacent municipalities.

## Vision Statement

*South Hero, Vermont is a friendly, vibrant, and beautiful small Lake Champlain Island town where folks live, work, play and visit. The abundant recreational, agricultural and cultural amenities support healthy lifestyles, a sense of community, and a thriving local island economy.*

## Themes

As part of the development of the 2023 South Hero Town Plan, the Planning Commission identified five key themes to prioritize. Given that these themes cut across traditional areas of planning, the following icons are used to indicate where these themes are found throughout the plan.



Vibrant Villages



Housing and Transportation



Recreation and Recreation Economy



Equity & Inclusion



Climate Change and Resilience

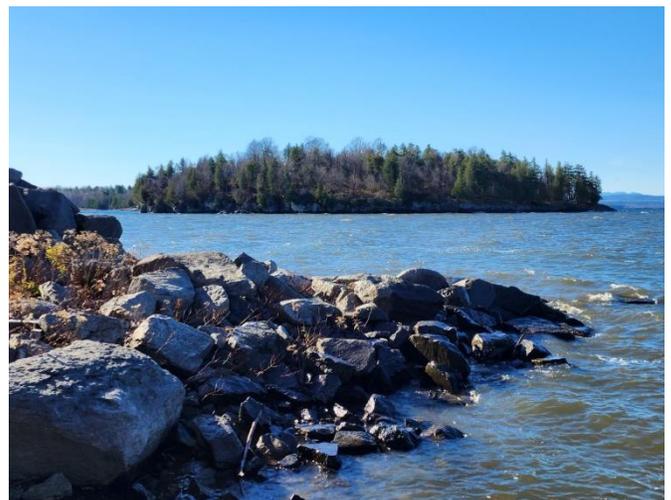


Figure 1.1: The Narrows. Credit: Mary Harwood

## Equity and Inclusion

The South Hero Town Plan seeks to incorporate the principles of equity & inclusion in its process, vision, goals, and policies. Removing barriers to equitable opportunities for all residents allows the whole community to thrive.

Much like the other key themes, equity is not an independent goal but rather a consideration that helps to inform all other goals. In each chapter of the plan, readers will find a section explaining how the Town's goals & policies will work towards a more equitable and inclusive community.

Each person has a valuable perspective on how the Town can best support its residents, and an equitable and inclusive South Hero recognizes this and strives to engage the whole community in its planning efforts. Engagement opportunities included a survey, community events and dedicated workshops, all with the goal of reaching residents who may not typically be involved in municipal planning efforts.

The Town recognizes that the work of creating an equitable and inclusive community is an ongoing process and is committed to continuing to re-evaluate how to ensure its planning best supports its goals for equity and inclusion.

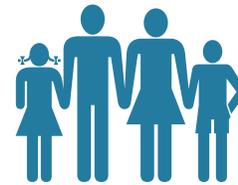
The Town of South Hero adopted a declaration of inclusion on June 14, 2021, the full text of which is included below.

### *Defining Equity and Inclusion*

**Equity:** Equity is ensuring fair treatment, access, opportunity, and advancement for all people, while at the same time striving to identify and eliminate barriers that have prevented the full participation of some communities.

**Inclusion:** Inclusive environments are places in which any individual or group is and feels welcomed, respected, supported, valued, and able to fully participate as their authentic selves. An inclusive and welcoming culture embraces differences, offers respect in words and actions for all people, fosters a diversity of thought, ideas, perspectives, and values, strives to create balance in the face of power differences.

*Source: Vermont League of Cities and Towns*



## Town of South Hero Declaration of Inclusion

The Town of South Hero condemns racism and discrimination in all forms, and welcomes all persons, regardless of race, color, religion, national origin, sex, gender identity or expression, age, disability or sexual orientation. The Town of South Hero commits to fair and equal treatment of everyone in our community and to be a place where individuals can live freely and express their opinions.

*Adopted by the Town of South Hero, June 14, 2021*

## Community Engagement

A key goal of the 2023 update process was to reach a broad range of residents to develop a community supported vision for the future of the Town. To achieve these goals, the Town Planning Commission held several public events, met with local organizations, and conducted a survey.

### Community Organization Meetings

To inform initial focus areas for the plan outreach efforts, the Town met with local & regional organizations including the Grand Isle County Alliance for Racial Equity, Take Action, Grand Isle Natural Resource Conservation District, Friends of Northern Lake Champlain, CIDER, Transportation Advisory Committee, Champlain Valley Office of Economic Opportunity, the South Hero Recreation Commission, South Hero Land Trust, and Local Motion.

### Town Plan Survey

The Town Plan Survey included 23 questions covering demographics and the following themes: housing & transportation, climate change & resilience, equity & inclusion, recreation & recreation economy, and vibrant villages. The survey was distributed online & in paper form at the Town Office and Worthen Library. Residents were sent a postcard with a link to the survey, and the survey was available at the June Community Cheers and Cheese event. The survey received 207 responses; 11.7% of year-round adult residents responded to the survey and 32 responses were received from seasonal residents. An analysis of the survey response demographics found that the survey underrepresented renters and residents aged 18-34. Therefore, it is important to consider that the survey may be biased as it relates to issues that primarily affect these groups. A full account of survey results can be found in the appendix.

### Community Events

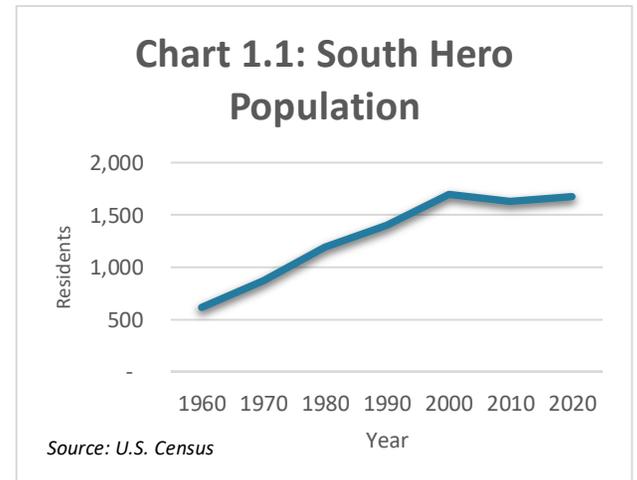
The Town Planning Commission participated in two “Community Cheers & Cheese” events. During the June events, residents were encouraged to leave comments about what they would like to evolve, maintain, and transform about South Hero

During the August event, the Planning Commission asked for feedback on a draft vision statement. The Planning Commission was also available to discuss the plan with residents at the Farmer’s Market several times throughout the summer.

The Town held a Village Vision Workshop in September 2022. Attendees discussed the current character of the two village zoning areas, and the desired future build-out via a map exercise.

The results of all these public outreach efforts have directed the vision, organization and goals & policies throughout this plan. Survey results and community input are noted throughout the plan, and have driven the vision, goals and policies found throughout the plan.

## Town Data Profile

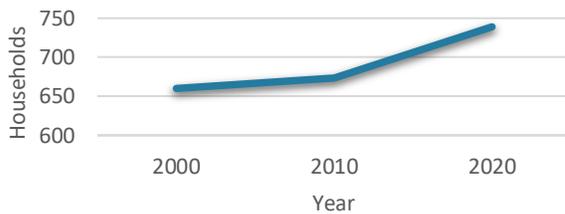


As of 2020, South Hero has 1,674 year-round residents. South Hero’s population grew rapidly from 1960 to 2000 and has stayed relatively stable over the last 20 years.

There is no specific data on percentage of seasonal residents, but it is understood that they are a significant group in South Hero.

South Hero’s population continues to age, with a 12% increase on the population over age 65 in the last 12 years. Despite this, South Hero continues to attract younger families, and the population under 18 has stayed relatively stable over the past 10 years.

**Chart 1.2: South Hero Household Growth**



Source: U.S. Census & U.S. American Community Survey

While population growth has slowed in the last 20 years, the number of households has continued to grow. This is likely due to a reduction in average household size in the region over the same period. Growth in the number of households will mean that the same population requires additional housing units over time.

## Compatibility with Neighboring Municipalities

From transportation to land use to water quality, a community's planning effort cannot happen without involving adjacent communities within the region. The Town of South Hero is adjacent to the Towns of Grand Isle in Grand Isle County and Milton and Colchester in Chittenden County. The following is a review of the relationship between the South Hero Town Plan and the plans of adjacent communities:

### Grand Isle

The Town of Grand Isle's plan was adopted in February 2007. The Rural Residential/Agricultural Zoning District, Commercial Recreation Shoreline, and Residential Shoreline Districts are immediately adjacent to South Hero's Residential District. These districts have comparable permitted and conditional uses. The South Hero Plan does not conflict with the Grand Isle Town Plan.

### Colchester

The Town of Colchester's plan was adopted on April 19, 2017. Colchester is not accessible to South Hero via road, but is connected via the Island Line bike path and ferry during the summer. Residential One District and Flood Plain District are the most adjacent to South Hero. Land uses are compatible

with proposed land uses in the adjacent areas of South Hero. Lake Champlain serves as a buffer between the lower densities of South Hero and areas of Colchester with higher densities. The nearest growth center to the Town of South Hero is the Local Growth Center in the Town of Colchester at Exit 17 on Interstate 89.

### Milton

The Town of Milton last updated their development regulations on June 7, 2021. Milton's zoning districts on the border of South Hero are Agricultural/Rural Residential (R5) and Shoreland Residential (R6), as well as a Flood Hazard Overlay District. These Milton zoning districts include uses that are comparable to uses permitted in the Shoreline and Flood Hazard District in South Hero, the zoning districts located on the South Hero side of U.S. Route 2.

### Relationship to Regional Plans

South Hero is a member municipality of the Northwest Regional Planning Commission (NRPC), which provides a forum for municipalities in Franklin and Grand Isle County to act on behalf of the region. All communities, including South Hero, are entitled to equal voting representation by two locally appointed members of the governing Board of Commissioners. Each member municipality has the opportunity to participate in the NRPC Policy/Project Review Committee, Transportation Advisory Committee (TAC), Brownfield Redevelopment Program, and other subcommittees. NRPC is required to adopt a Regional Plan per Title 24, Chapter 117 of the Vermont Statutes Annotated. The Regional Plan is intended for use as a legal document, as a guide for decision makers and as an action plan to address issues of regional importance. The Regional Plan for the NRPC was adopted in July 29, 2015. South Hero is primarily in the agricultural Resource Planning area, which is compatible with South Hero's zoning. The Regional Plan acknowledges village centers as an appropriate location to maintain historic character of denser residential and commercial uses. The South Hero Town Plan conforms to the Northwest Regional Plan. The Chittenden County Regional Plan calls for the areas of Milton immediately adjacent & the closest portions of Colchester to South Hero to remain rural.

# Natural Resources and Land Use

## Goals & Objectives

1. Allow South Hero to grow in a responsible way, with respect for its unique characteristics, natural beauty and rural environment in a manner which encourages and nurtures South Hero's sense of community and civic pride.
2. Support agriculture that follows best environmental management practices.
3. Ensure the compatible coexistence of development with major ecologically sensitive areas, such as wetlands, natural areas, Lake Champlain, scenic views and historic sites.
4. Enable mixed use of residential, agricultural, light industrial and/or commercial developments to flourish in the Town.
5. Encourage commercial and small, light industrial development within or adjacent to the designated Village Centers and along Route 2 and Route 314 in a way that maintains the beauty of the entrances to the Town from the east and west and prevents strip development.
6. Take advantage of existing or historical hamlets where appropriate.
7. Increase public awareness of the unique characteristics of South Hero in an effort to help preserve those characteristics for future generations.
8. Maintain adequate public access to the lake in an environmentally responsible manner.
9. Support efforts to reduce pollution and cleanup Lake Champlain, groundwater and air quality.
10. Re-evaluate and prioritize the "scenic views" list with consideration of how it can support protecting scenic views in the Town's Development Regulations.

## Implementation

1. Restructure the Town's Development Regulations to define and include the Proposed Land Use Areas of Village Core and Village Neighborhood.
2. Evaluate making provision for a Town Center with adequate capacity to host the Town Offices, recreation fields and other functions and facilities as the need develops. Commercial enterprises, in a public/private partnership or just private, should also be included in the evaluation.
3. Support purchase and/or donation of development rights to maintain agriculture and important natural areas outside of the village areas.
4. Encourage agricultural easements in subdivisions and promote Planned Unit Developments (PUDs) where soils are suitable.
5. Require that "building envelopes" be defined for house sites in subdivisions to ensure coexistence with wetlands, natural areas, and farmland.
6. Define "village core" area and "village neighborhood" area in the zoning regulations, encourage development in those areas and take steps to improve pedestrian and bicycle safety, and enforce appropriate speed limits.
7. Support, encourage and inform the public about innovative solutions for safe sewage disposal.
8. Support the development of retail, hospitality and service-based businesses best suited to serve the needs of residents, seasonal residents and the tourist population.
9. Reconsider the lot size limitations in zoning regulations.

10. Administer town regulations in a fair, consistent and efficient way and monitor them for their effectiveness and enforcement.
11. Support and participate in Federal, State and local efforts to improve water quality in Lake Champlain. Ensure Town Development Regulations support that effort.
12. The Town Planning Commission and Conservation Commission should stay up to date on State and federal regulations concerning wildlife, wetlands, natural areas, and water quality. Furthermore, the Commissions should determine how best to regulate these areas and monitor the effectiveness and enforcement of town regulations.
13. The Town shall support, seek out and apply for State, federal and private grants for the protection of natural areas, wetlands, scenic areas, recreation areas, and wildlife habitat.
14. The Town shall support donations, leases, and other private, voluntary ways to protect natural areas, wetlands, scenic areas, recreation areas, and wildlife habitat.
15. Town zoning and subdivision regulations shall be strictly and consistently enforced. All Town officials should be well-informed about these regulations.
16. In the Town Development Regulations, provisions shall ensure that development compatibly coexists with the following special environmental areas:
  - a. Natural areas, especially significant fossil sites
  - b. Critical habitat on the outer islands
  - c. Public access areas on the lake shore
  - d. Lake Champlain shoreline i.e., wetlands, including the “Crick” and the area of Round Pond
  - e. Scenic views
  - f. Flood plain areas
17. Ensure that the conversion of seasonal homes to year-round use meets local zoning standards and results in safe and adequate sewage disposal, water supply, and road access.
18. To protect the Lake Champlain shoreline and recognize its diverse and unique character, the Town Planning Commission and Conservation Commission shall keep apprised of lakeshore land use and identify shoreland areas that may be treated differently in the Town regulations.
19. Support State of Vermont efforts to minimize pollution to the Lake and groundwater.
20. Work cooperatively with the newly created Conservation Commission where appropriate.

## Natural Resources

The character and capacity of development in South Hero is physically influenced by topography, geology, soils, groundwater and surface water. This chapter provides a basis to understand the physical character of the town and its limitations and suitability for development. The Vermont Geological Survey, the USDA Natural Resource Conservation Service (NRCS) Web Soil Survey, Vermont Significant Wetland Inventory and other resources provide valuable information on the town’s natural resources. This information can be viewed at <https://anrmaps.vermont.gov/websites/anra5/>.

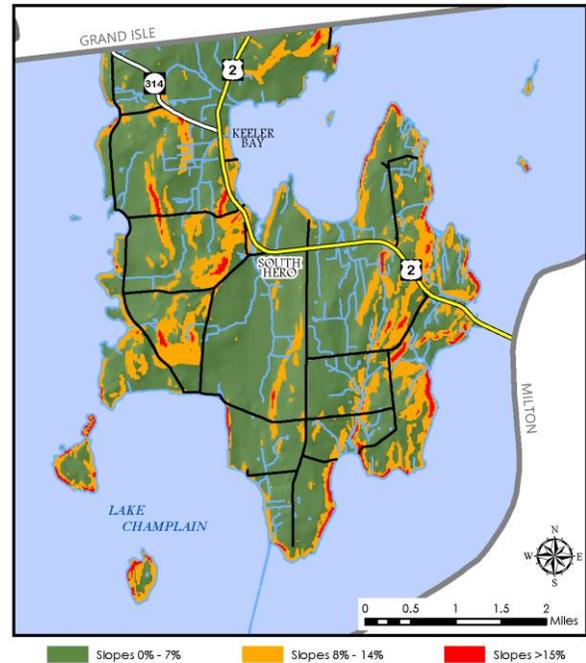
### Topography and Geology

South Hero is comprised of the southern portion of South Hero Island and the 7 outer islands of Providence, Stave, Fish Bladder, Cedar, Kellog, Sawyer and Carlton’s Prize. South Hero is primarily

low and flat with a few ridges and hills. The highest point in South Hero is a rounded hill reaching 279 feet above sea level about 1.8 miles southwest of South Hero Village. There is a small amount of land on hills and on the shorelands that have steep slopes over 15%. Development in these areas could result in destabilization and environmental damage, and therefore should be avoided.

The town is within the Champlain Lowlands physiogeographic region and has been shaped by historic ice ages and seas. As a result, there are many geologic sites of interest in South Hero. Fossil evidence may be found in many rock outcroppings throughout the town as much of the rock is in layers of sediments put down over millions of years. Lessor Quarry, located south of Sunset View Road approximately 0.25 miles from Route 2, is made up of Ordovician limestone about 450 million years old. It consists of thick layers of dark blue-gray limestones with fossils and occasional thin layers of shale. The site is used for research and field trips by UVM and other area students, however, it is on private land and permission must be granted before visiting the site.

STEEP SLOPES



Legend for Steep Slopes:  
 Green: Slopes 0% - 7%  
 Yellow: Slopes 8% - 14%  
 Red: Slopes >15%

PRIMARY AGRICULTURAL SOILS



Legend for Primary Agricultural Soils:  
 Green: Prime Soils  
 Orange: Statewide Importance Soils

### Soil and Earth Resources

*Agricultural Soils.* Soils that have the highest potential for agriculture based on soil physical and chemical conditions are mapped by NRCS and known as primary agricultural soils. The NRCS soil survey places soils in value groups that determine whether they meet various types of primary agricultural soils. Map X shows highest value Prime soils and second highest value Statewide Importance soils for agriculture. Not surprisingly, South Hero is made up almost entirely of soils that have good potential for agriculture. The town’s efforts to concentrate growth in villages and to carefully site limited development in the rural areas will help to preserve agricultural soils.

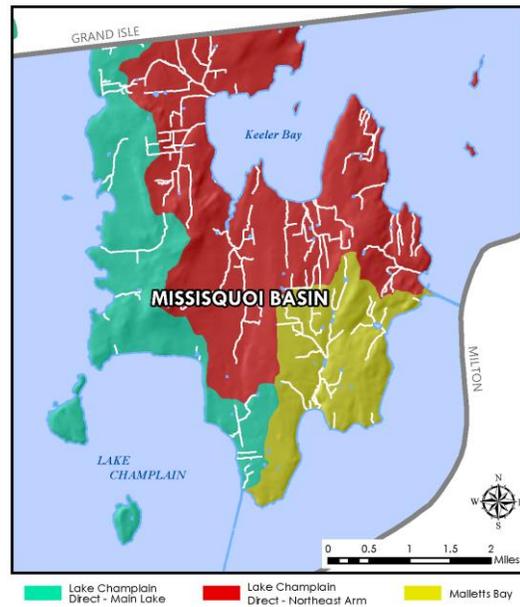
*Earth Resources.* Earth resources, including sand, gravel and stone, are important resources particularly for use in construction and road maintenance. Mapped soil data from the NRCS shows limited potential for sand and gravel extraction in the Town.

There is one mapped quarry in the area where there is sand and gravel potential. The Town of South Hero acquires sand and gravel from Highgate, gravel from North Hero, and salt is sourced from Barrett’s Inc. Given the limited potential in town, the likelihood of finding suitable property for a municipal sand/gravel quarry is not favorable unless the Town looks outside its borders. Despite this limited potential, it is important to ensure that any quarry, public or private, is properly designed, engineered and managed. Zoning standards shall include performance standards for extraction, noise, dust, hauling, reclamation and bonding to minimize impacts to neighbors. Proper end of life reclamation shall also be required.

### Water Resources

*Streams and Drainage.* South Hero falls into the “Northern Lake Champlain Direct” watershed. Water from a series of unnamed streams and wetlands generally flow directly into Lake Champlain and needs to be monitored for excess phosphorus and other lake pollutants.

### WATER RESOURCES



### TOPOGRAPHY



Factors such as, larger rivers flowing into Lake Champlain, including the Lamoille (Colchester) and the Winooski River (Winooski), and overflows from the Burlington area can negatively affect the quality of water on the south end of South Hero Island. Flow from St. Albans Bay can negatively affect the Inland Sea area of South Hero from the Sandbar Causeway north around Kibbe Point into Keeler Bay and north to the Grand Isle Town border. Many homes get their drinking water directly from the Lake along the entire South Hero shoreline.

*Groundwater.* Some South Hero residents rely on groundwater wells for drinking water. The Town’s limited aquifer sources should be protected to ensure good water quality. Some wells in South Hero are impacted by hydrogen sulfide gas and residents may choose to treat their wells to address this.

*Wetlands.* Wetlands are mostly semi-aquatic lands that are flooded or saturated by water for varying periods of time during the growing season. In all wetlands, the presence of water creates conditions that favor the growth of certain plants, such as cattails, water lilies, alders, dogwood, red maple, and swamp oak. Wetlands are important to the town because they provide flood and storm water storage, surface and ground water protection, shoreline anchoring and erosion control, wildlife and migratory bird habitat, threatened and endangered species habitat, educational and recreation opportunities, and open space and scenic beauty.

Map X shows the location of wetlands mapped by the Vermont Significant Wetland Inventory; however, this map is not completely accurate or comprehensive and currently being updated. The State is working to improve the map by revising inaccurate wetland locations and adding new wetlands to the inventory, specifically those that are over a half-acre in size, that are connected to water, that are a vernal pool or headwater, and that contain significant natural communities, or rare species habitat.

The two most significant wetlands in South Hero are the South Hero Marsh Wildlife Area (the “Crick”) and the Round Pond Natural Area. The South Hero Marsh Wildlife Area outlets on the north side of U.S. Route 2, just west of South Hero Village, and extends southerly nearly to West Shore Road. The “Crick”, roughly 100 acres in size, is mostly wooded with deciduous trees. Round Pond is situated near the shoreline, northeasterly of the intersection of Landon Road and East Shore Road.

The pond is mostly open water; the wetland is more extensive and includes some marshes northerly along the shoreline. The area is an important protected nesting area for loons.

*Lake Champlain.* South Hero not only depends on the Lake Champlain for drinking water, fishing, swimming, boating and other recreational pursuits, but for its identity and sense of place. Summer tourism and property values are tied to its health and beauty. The Lake attracts businesses with a work force that appreciates the Lake’s natural beauty and Vermont’s working landscape.

Unfortunately, too much pollution is reaching Lake Champlain. Stormwater runoff travels into rivers, streams or directly into Lake Champlain from agricultural land, roads, parking lots, lawns, athletic fields, buildings, industrial facilities, forest harvesting operations, and streambank erosion.

Wetlands in Vermont are classified as Class I, II, or III based on the functions and values which they provide. Development on a Class I and II wetlands requires a VT Wetlands permit from the Department of Environmental Conservation.



Figure 2.1: View of Round Pond.

During periods when Lake Champlain is in flood stage, septic systems near the Lake are in danger of flooding and contributing to the pollution problem. Wastewater treatment plants off Island, in particular Burlington, Winooski, and St. Albans are an additional source of water pollution to Lake Champlain’s waters. South Hero recognizes the importance of clean water, a clean Lake Champlain and the negative impact a polluted Lake Champlain has on the State’s economy. South Hero supports efforts to decrease and stop all polluting of Lake Champlain.

Phosphorus is one of the nutrient pollutants found in stormwater and arguably the greatest threat to clean water in Lake Champlain. Too much phosphorus pollution stimulates excessive growth of algae and nuisance aquatic plant growth. Of particular concern is the toxic cyanobacteria, also called blue-green algae, that can turn the water green, release a horrid odor and make people and pets’ sick. For waters not meeting Vermont State Water Quality Standards, needed pollutant reductions are identified through Total Maximum Daily Loads (TMDLs). Tactical basin plans describe how these pollutant reductions will be achieved by outlining priority projects or actions, based on monitoring and assessment data, to protect or restore specific waterbodies. South Hero is within the Northern Lake Champlain Direct Basin (Basin 5), which completed a Tactical Basin Plan in 2020. The Plan recommends that South Hero complete a stormwater management plan to identify ways to limit nutrient loading from stormwater.



*Town Plan Survey Results*

Respondents to the 2022 South Hero Town Plan survey strongly supported efforts to improve the water quality of Lake Champlain. Over 70% supported developing a stormwater master plan for the village area and more than two-thirds supported exploring municipal wastewater management in the village areas.

*Stormwater Management.* In South Hero, stormwater infrastructure consists of a series of catch basins, culverts, lines, and swales that transport stormwater to outfall points in Lake Champlain. Stormwater is a major cause of the impaired water quality in Lake Champlain. As noted above, the Tactical Basin Plan recommends that

South Hero prepare a stormwater management plan to identify ways to further manage and treat stormwater before it makes it way to Lake Champlain.

Modeling has identified Keeler Bay for high phosphorous loading and as a result it is a priority for remediation and restoration.

Stemming from this data and planning, the South Hero Land Trust and Grand Isle Natural Resource Conservation District are leading a Keeler Bay Action Plan, with funding from the Lake Champlain Basin Program.



*Figure 2.2: South Hero’s White’s Beach at Green Up Day. The town beach is named after the family who lived nearby.*



*Figure 2.3: This new stone lined ditch on Kibbe Point Road was funded by Grants In Aid in 2022 and will reduce erosion and improve stormwater infiltration.*

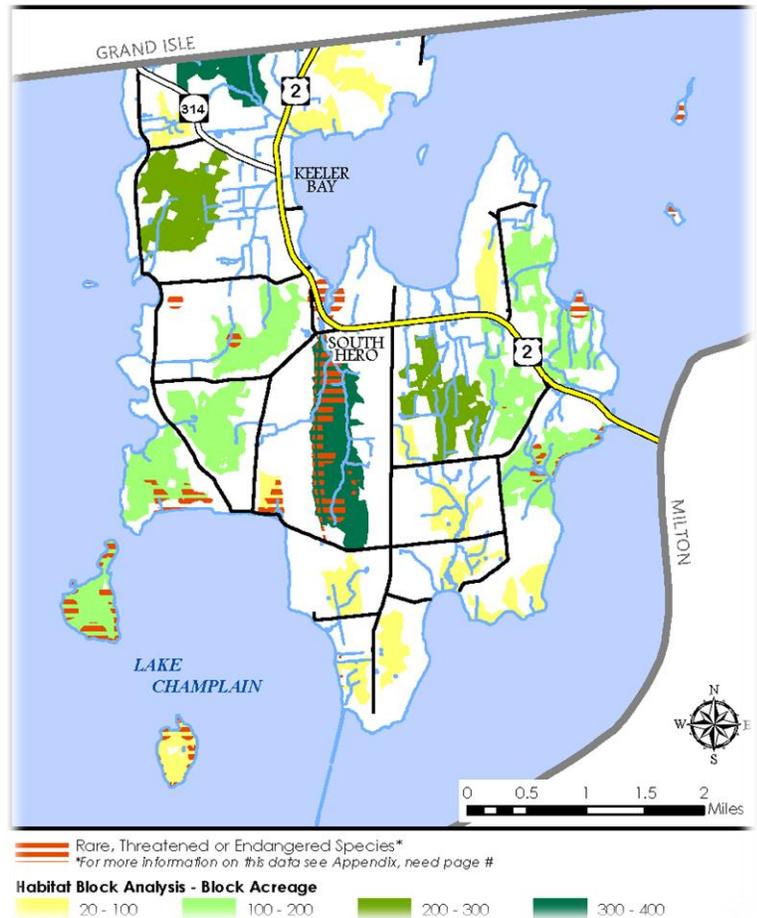
The State issues a Municipal Roads General Permit, first in 2018 and again in 2023 to achieve significant reductions in stormwater-related erosion from municipal roads, both paved and unpaved. It covers discharges of regulated stormwater for town highways (Class 1-4) and municipal stormwater infrastructure associated with town highways. Municipalities are required to implement a customized, multi-year plan to stabilize their road drainage system. Funding through the Grants In Aid program is available for implementation projects.

Another way that South Hero can work on limiting the amount of stormwater that makes its way to Lake Champlain is to require that developments incorporate Low-Impact Development (LID). LID controls stormwater runoff at the lot level aiming to keep rainwater on-site before slowly releasing it. Examples include limiting impervious surface and green infrastructure techniques, such as rain gardens, rain barrels, and sites designs that allow maximized on-site infiltration of stormwater.

### Habitat Blocks, Wildlife Corridors and Forest Land

Wildlife is an important natural resource and an indication of a healthy, sustainable environment. The most important wildlife habitat blocks in South Hero consist of wetlands. The highest ranked habitat block is the area around the Round Pond Natural Area, while the largest habitat block is the Roy Marsh Wildlife Management Area that runs behind South Street from Route 2 to West Shore Road. The majority of both these areas are already protected as conserved land. Continuing to preserve these and the smaller habitat blocks is a priority for the Town. Over time, even low-density rural development and roads can fragment these areas, threatening the health, function and value of these forest areas. Any forestry use should follow accepted management practices.

## HABITAT & NATURAL AREAS



South Hero has scattered areas of forested land, including mature forest, wetland forests, and young forests that are growing up from old farm fields and pastures. The Champlain Islands support growth characteristics of Central Woodlands, such as shagbark hickory, basswood, several maple varieties, beech and red and white cedar.

The predominant woodland variety is ash, exceeding 50% coverage in some parts of town. The invasive Emerald Ash Borer beetle (EAB) first infested South Hero in 2018. While EAB has spread into most of Vermont’s counties, its population is low and it has infested only a very small percentage of the state’s total ash trees. Managing the movement of infested ash material will slow the spread of EAB and allow time for planning, monitoring, and research. The Town should plan for removal of dead and diseased trees on Town property, which includes town road ROW’s under proper slow the spread protocol, and private landowners should be aware of the impact on their property.

### Air Quality

Air quality is generally high throughout Vermont, especially in rural communities such as South Hero. Motor vehicles are the largest source of air pollution in Vermont, which can create localized areas of poor air quality where traffic is congested. Air quality can also be impacted by weather patterns which carry pollutants from other areas. All efforts should be taken to maintain good air quality in South Hero.

### Scenic Areas

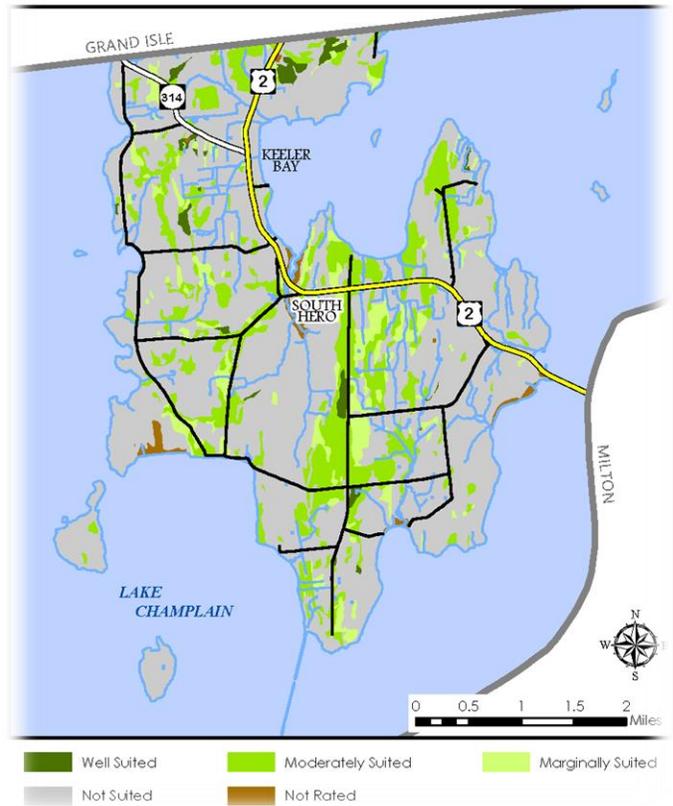
*Designated Scenic Views.* A scenic view is a publicly accessible area where an important and characteristic open vista may be viewed by the public. Scenic views may be from public roads, public recreation areas and from the lake. Many years ago, the Special Island Environment Committee found 14 scenic views and ranked them from 1 to 4, with 1 being the best. The Town will need to develop review standards in the South Hero Development Regulations to ensure that development is planned and sited with limited impact to these identified scenic views. A full list of scenic views can be found in Appendix A.

### Historic & Archeological Resources

*Historic Resources.* A historic building inventory identified 99 historic sites in South Hero. The list includes houses, farms, camps, log cabins, school houses, churches, stores, inns, cemeteries, an old boat launch and steam boat landing (from the days before the bridge) and barns. Groupings of historic buildings are in the following areas: 1) Sand Bar Historic District; 2) West Kibbe Point Historic District and 3) South Hero Village Center Historic District. There are no regulations for historic buildings in the Town of South Hero.

*Archeological Resources.* The state maintains an inventory of archeological sites across the state, including in South Hero. These areas are not listed publicly to protect these sensitive areas. Any archeological sites discovered in South Hero should be reported to the Vermont Division for Historic Preservation (VDHP).

### SEPTIC SUITABILITY



### Land Use

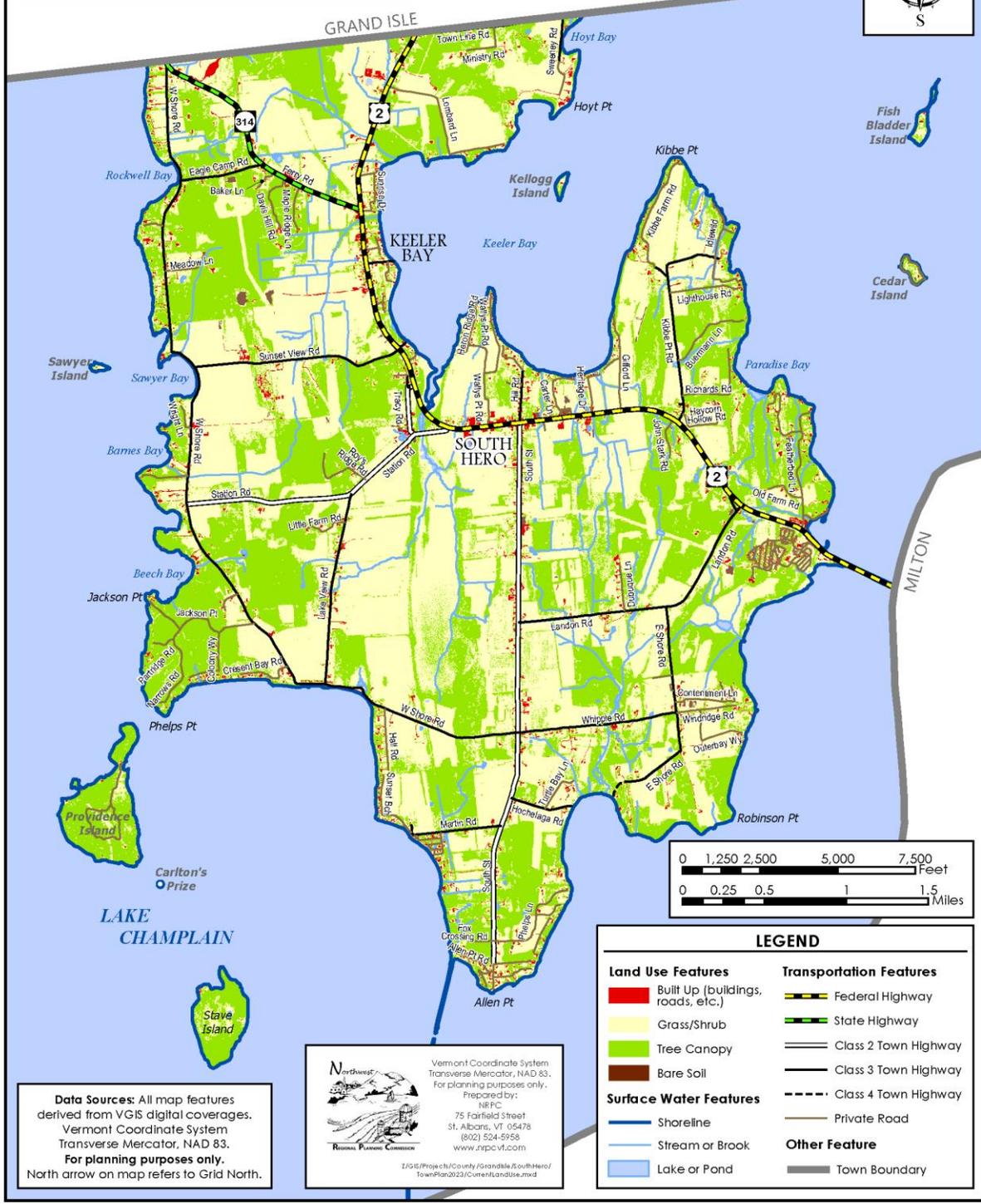
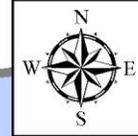
#### Current Land Use

Land use in South Hero consists of two village areas along Route 2 and rural areas with dispersed residences, working farms, home based and agricultural businesses, wetlands and open land. These uses are bounded by Lake Champlain with its small beaches, marshes, rocky shoreline, lakeshore residences and seasonal homes.

The Town’s history is rooted in agriculture, and over a quarter of the Town’s acreage is used for this purpose. The South Hero Land Trust works to preserve forest & farmland in South Hero. Over 19% of land in South Hero is preserved through one of the land trusts in the state. The amount of farmland in the town has remained relatively consistent since 2013.

# CURRENT LAND USE

## Town of South Hero



South Hero has a significant seasonal tourism industry with a large number of summer homes and camps located along Lake Champlain, in addition to a few marinas, public boat launches and a town beach. Roughly 13% of all land is used for seasonal dwellings, with 91% of those parcels being located on the lakefront. The number of seasonal residences listed with the town has remained relatively consistent from 2013 to 2020.

South Hero’s two village areas, South Hero Village and Keeler Bay Village, are located at two junctions along Route 2. The villages consist of a mix of residential, commercial and public land uses at a higher density than the rest of Town.

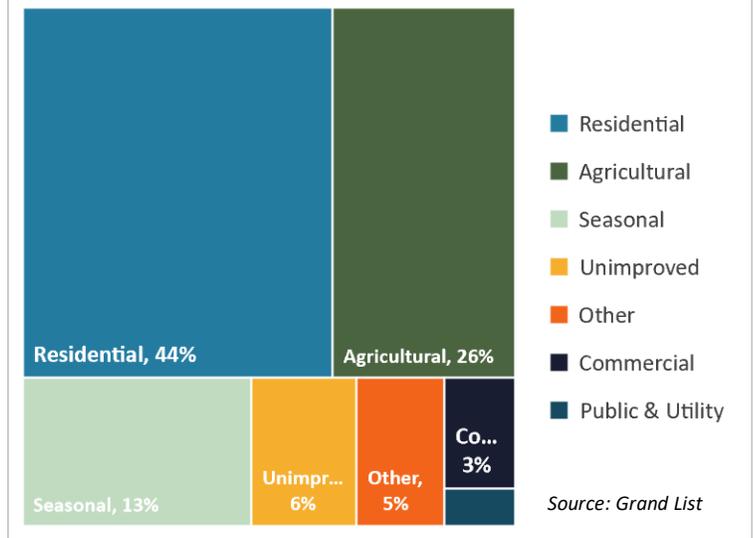
Outside of the village areas, residential development is located on larger rural lots integrated with agriculture, open land and wetland areas. Nearly half of all land in South Hero is in residential use, with an average parcel size of 5.5 acres. However, this number may be skewed by a few very large lots; of the 75% of residential properties on less than 6 acres, the average acreage is 1.7 acres. 33% of all residences are located on the lakefront.

### Considerations for Future Land Use

#### *Planning for Villages.*

South Hero’s village areas are important community centers with a mix of housing types and a variety of municipal services and businesses. The Town of South Hero has made a concerted effort to plan for responsible growth in the community that will enable the town’s rural, island character to continue into the future. The Town recognizes that the town’s rural island countryside and its vibrant villages go hand in hand. By planning for and regulating development to be concentrated in the town’s villages, the Town is concurrently setting policy to limit the intensity of development outside the villages. The town first adopted village zoning districts and associated regulations in 2020. The Town is currently studying whether municipal wastewater management is a possibility, which is critical to allow for concentrated residential

**Chart 2.1 South Hero Land Use by Percentage**



development, infill and commercial development. The Town is also engaged in a scoping study to make the village more walkable, safe for bicyclists and pedestrians and the streetscape more inviting. The 2023 South Hero Town plan makes further recommendations on how to continue shaping and implementing the vision for South Hero’s Villages.

Vermont has established a framework of “designations” to offer incentives that encourage communities to maintain vibrant concentrated settlements separated by rural countryside. These programs provide a variety of incentives for development in the designated areas,. Each program has a set of unique goals for making vibrant places. South Hero Village and Keeler Bay both have Village Center Designation (VCD). The village designation boundary is similar but distinct than the village core planning area boundaries.

Village Center Designation supports small town revitalization with a variety of tax credits to support improvements to historic properties and priority consideration for several state grants. The VCD program has helped the Town of South Hero receive several State Grants including a Municipal Planning Grant to help create this Town Plan. Village Center designation is an important tool to further the town’s goals for a vibrant historic village center in South Hero Village and Keeler Bay Village.

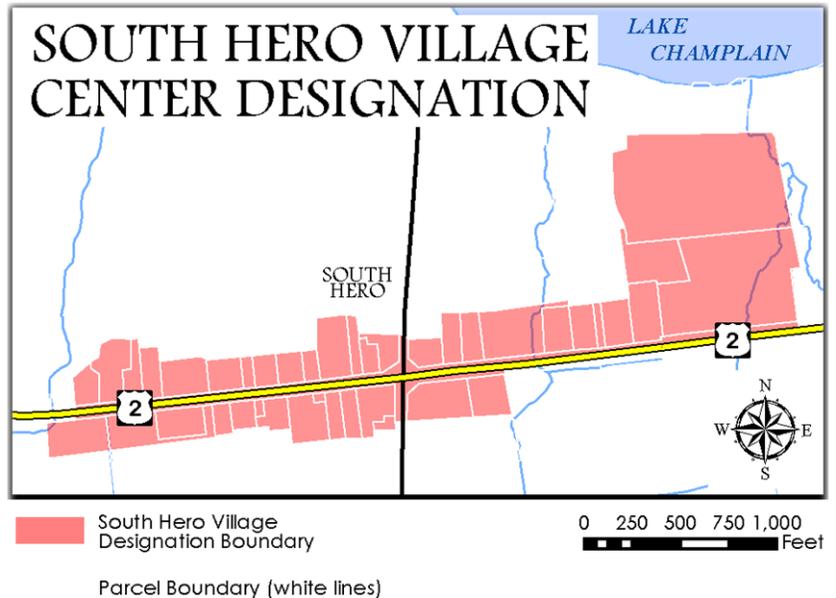
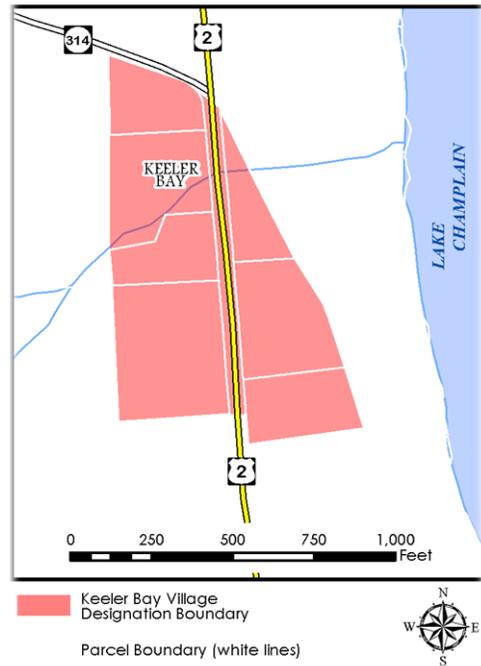
Village Center Designation makes the town eligible for a designated Neighborhood Development Area, another state designation program that provides incentives for residential neighborhoods within or adjacent to village centers. Community scale or municipal wastewater treatment is a requirement. If municipal wastewater is development, the town should consider applying for a neighborhood development area.



*Commercial and Industrial Development.* Commercial and industrial development in South Hero should be of a scale and impact appropriate for the Town’s rural character. There are no areas in town designated exclusively for commercial or industrial uses. As a result, heavy industry is not appropriate in the town. Most commercial and light industrial uses are encouraged in or adjacent to the villages, however the particular use will determine the appropriate location. All commercial and light-industrial uses will have appropriate review standards that protect the scenic beauty of the Town, protect the quality of life for nearby residences and businesses through robust compatibility with the resources that the Town is trying to protect. Light-industries in particular will adhere to standards that ensure any manufacturing, fabrication, processing, assembly, storage or warehousing does not interfere with the character of the area. Home occupations will be encouraged throughout the Town provided they fit in with the surrounding neighborhood. All uses must demonstrate that they have adequate road access. The Town is working on developing a comprehensive definition of light-industry to include in the development regulations to further the Town’s vision for development.

performance and site design standards, and ensure

### KEELER BAY VILLAGE CENTER DESIGNATION



*Agricultural Development.* Farms of all types are encouraged to remain on primary agricultural soils in the Town of South Hero. The best locations for farms are designated as primary agricultural land in the agricultural soils map. The Town encourages compatible home occupations and accessory on-farm businesses on farms, such as farm stands, value added agriculture enterprises, storage operations in barns, and bed and breakfasts. When a farm designated as prime agricultural land is proposed for subdivision, the Town will work with the owner/developer to locate house sites in a way that protects as much of the prime agricultural land as possible.

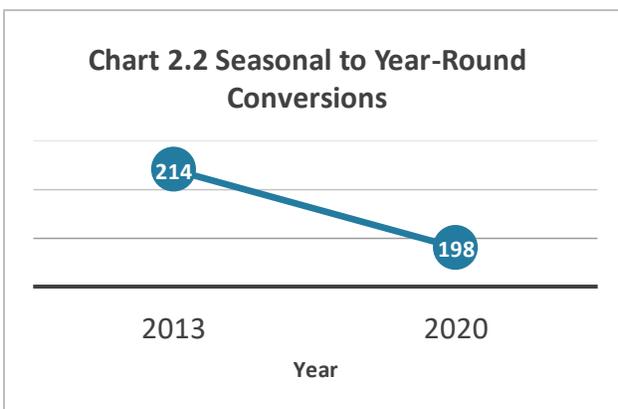
Important forest soils and forest resource areas should also be protected for the purposes of preservation and forestry activities.

*Seasonal Development.* The seasonal home community is important to the character of the Town of South Hero; however, there is a trend of seasonal to year-round conversion. Places that once were only occupied in the warmer months are now occupied year-round. Conversions in places where there is a dense pattern of seasonal homes along the shoreline and where soils for septic systems are poor and road access is limited can be problematic for a variety of reasons. To protect the water quality of the lake, to enable safe and efficient access to properties, and to protect the scenic beauty and fragile character of the shoreline, the Town will take measures within its authority to ensure properly functioning septic systems, year-round road access for emergency vehicles, and adequate lake shore and yard setbacks.

Beyond local authority, Act 172, the Shorelands Protection Act passed by the Vermont Legislature in 2014, imposes State standards and permit requirements that limits new development and tree cutting within 250 feet of the lake.

### Land Use Planning Areas

Land use planning areas lay out a framework for implementing zoning districts and associated standards for land use and development in the town. The following proposed land use maps illustrate the boundaries of five planning areas, in addition to a conservation and flood hazard overlay, while the following purpose statements prescribe in general terms, the amount, intensity and character of land use and development intended for the area. Zoning, other municipal regulations and ordinances will further the intent of the proposed land use planning areas by establishing zoning districts and appropriate zoning and subdivision standards of review. The permitting of new development shall take into the consideration the appropriate timing or sequence of land development activities in relation to the provision of necessary community facilities and services, such as wastewater and water infrastructure.



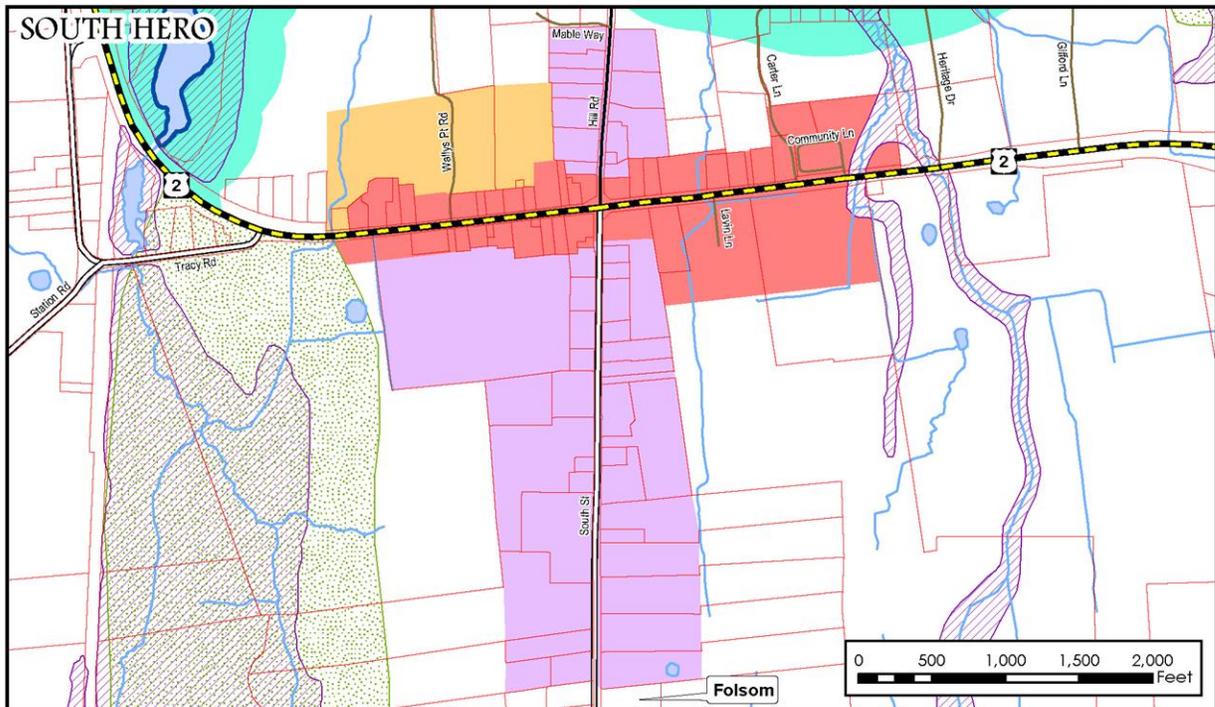
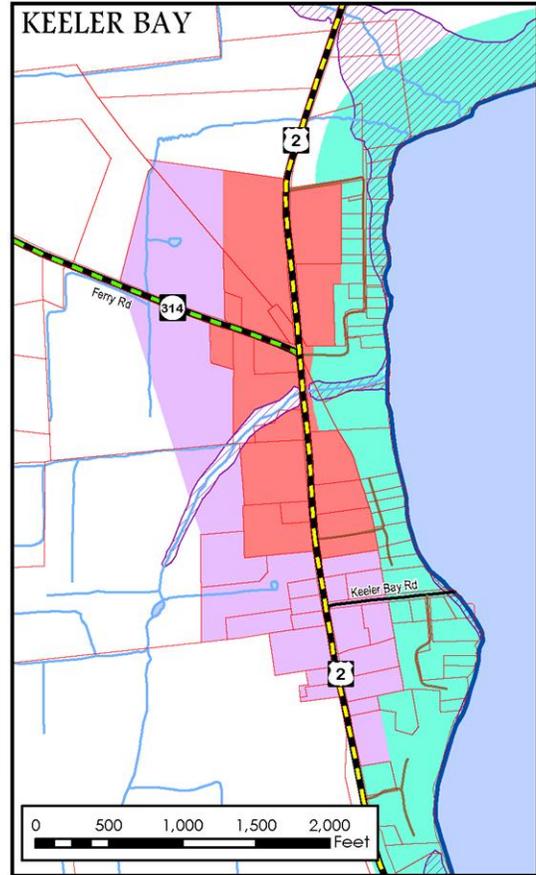
# PROPOSED LAND USE Village Insets

LEGEND	
<b>Planning Area Features</b>	<b>Transportation Features</b>
Village Core	Federal Highway
Village Neighborhood	State Highway
Under Consideration	Class 2 Town Highway
Shoreland	Class 3 Town Highway
Rural Residential	Class 4 Town Highway
Conservation	Private Road
Flood Hazard	<b>Surface Water Features</b>
<b>Other Features</b>	Shoreline
Town Boundary	Stream or Brook
Parcel Boundary	Lake or Pond

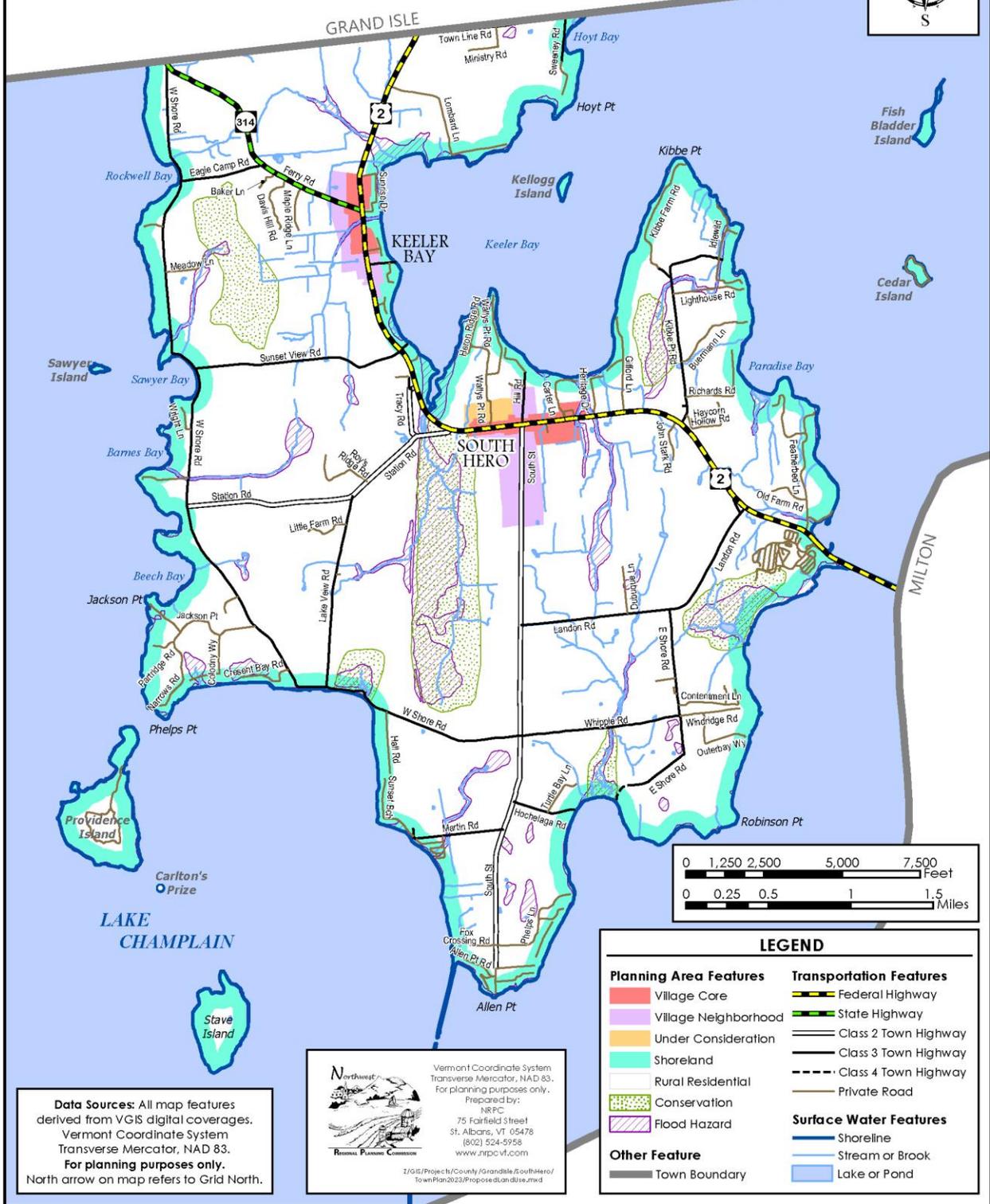


Vermont Coordinate System  
 Transverse Mercator, NAD 83.  
 For planning purposes only.  
 Prepared by:  
 NRPC  
 75 Fairfield Street  
 St. Albans, VT 05478  
 (802) 524-5953  
 www.nrpcvt.com

**Data Sources:** All map features derived from VGIS digital coverages. Vermont Coordinate System Transverse Mercator, NAD 83. **For planning purposes only.** North arrow on map refers to Grid North.



# PROPOSED LAND USE Town of South Hero



LEGEND	
<b>Planning Area Features</b>	<b>Transportation Features</b>
<span style="display:inline-block; width:15px; height:15px; background-color: #f08080; border: 1px solid black;"></span> Village Core	<span style="display:inline-block; width:15px; border-bottom: 2px dashed black;"></span> Federal Highway
<span style="display:inline-block; width:15px; height:15px; background-color: #f0e6ff; border: 1px solid black;"></span> Village Neighborhood	<span style="display:inline-block; width:15px; border-bottom: 2px solid black;"></span> State Highway
<span style="display:inline-block; width:15px; height:15px; background-color: #fff9c4; border: 1px solid black;"></span> Under Consideration	<span style="display:inline-block; width:15px; border-bottom: 1px solid black;"></span> Class 2 Town Highway
<span style="display:inline-block; width:15px; height:15px; background-color: #e0ffff; border: 1px solid black;"></span> Shoreland	<span style="display:inline-block; width:15px; border-bottom: 1px dashed black;"></span> Class 3 Town Highway
<span style="display:inline-block; width:15px; height:15px; background-color: #d9ead3; border: 1px solid black;"></span> Rural Residential	<span style="display:inline-block; width:15px; border-bottom: 1px dotted black;"></span> Class 4 Town Highway
<span style="display:inline-block; width:15px; height:15px; background-color: #d9ead3; border: 1px solid black;"></span> Conservation	<span style="display:inline-block; width:15px; border-bottom: 1px solid black;"></span> Private Road
<span style="display:inline-block; width:15px; height:15px; background-color: #f4cccc; border: 1px solid black;"></span> Flood Hazard	<b>Surface Water Features</b>
<b>Other Feature</b>	<span style="display:inline-block; width:15px; border-bottom: 1px solid blue;"></span> Shoreline
<span style="display:inline-block; width:15px; border-bottom: 2px solid black;"></span> Town Boundary	<span style="display:inline-block; width:15px; border-bottom: 1px dashed blue;"></span> Stream or Brook
	<span style="display:inline-block; width:15px; height:15px; background-color: #add8e6; border: 1px solid black;"></span> Lake or Pond

**Data Sources:** All map features derived from VGIS digital coverages. Vermont Coordinate System Transverse Mercator, NAD 83. For planning purposes only. North arrow on map refers to Grid North.

 Vermont Coordinate System Transverse Mercator, NAD 83. For planning purposes only. Prepared by: NRPC, 75 Fairfield Street, St. Albans, VT 05478, (802) 524-6958, www.nrpcvt.com  
Z:\GIS\Projects\County\GrandIsle\SouthHero\TownPlan2023\ProposedLandUse.mxd

*Village Core Land Use Planning Area Purpose Statement.* The purpose of the Village Core Land Use Planning Area is to provide a mixed use, concentrated core of South Hero’s traditional village centers. The planning area encompasses the historic village settlement area in addition to adjacent undeveloped land allowing for growth. Historic buildings are an important significant contributor to village character and should be preserved when possible. New development shall be consistent in siting and scale with the surrounding historic structures in the villages.

A mix of residential, commercial and public uses are intended to be located in the village core and should be designed and sited to further traditional village center characteristics such as walkable, pedestrian-friendly streets, sidewalks and walkways; human-scale buildings with architectural details, landscaping and lighting; an integrated street network; shops and services intermixed with homes; a variety of commercial establishments from retail shops to home businesses, professional offices, and tourist services; places for the community to gather for social and cultural events; and government services. Some small, low-impact industries may be appropriate.

To accommodate the planned density and intensity of use in the village core, a municipal wastewater system that allows for collective rather than individual onsite treatment is necessary. The Town is currently engaged in assessing the feasibility of a municipal wastewater system (see Section X for more information).

*Village Neighborhood Land Use Planning Area Purpose Statement.* The purpose of a Village Neighborhood Land Use Planning area is to accommodate walkable neighborhood adjacent to the village core areas. Village neighborhood planning areas are primarily residential in nature at a higher density than the rural residential area, but with less density than the village core. Home occupations and some limited commercial establishments may be integrated but with less intensity than in the village core. The planning area consists of historic residences along main roads in addition to land available for new development. New roads shall be constructed to create an

interconnected, walkable network and residences will be oriented to the street. It is intended that if a municipal wastewater system is developed it would be made available to the village neighborhood in addition to the village core.

*Rural Residential Land Use Planning Area Purpose Statement.* The purpose of the Rural Residential Land Use Planning Area is to provide for rural residential and limited business land uses at lower densities than the village neighborhood to preserve the traditional working landscape and to maintain South Hero’s rural character. Rural residential, small-scale commercial and light industrial land uses shall be balanced with the natural landscape of meadowlands, agricultural fields, wetlands and Lake Champlain views. Home-based occupations and agricultural related enterprises are common throughout the Rural Residential Land Use Planning Area.

Development shall be carefully sited and designed to limit impacts on important natural resources, including; primary agricultural soils, habitat blocks, wildlife corridors, wetlands and other natural areas. Locating development along field and forest edges, limiting the length of roads and driveways and clustering development are all good strategies to minimize impacts. Planned Unit Developments (PUDs) are a regulatory tool that can provide incentives for development that is designed to meet these goals, such as clustering development on smaller lot sizes and conserving the undeveloped portion of the subdivision. Conservation easements, use value appraisal/taxation and other methods that protect important natural resources, particularly primary agricultural soils are supported.

*Shoreland Land Use Planning Area Purpose Statement.* The Shoreland Land Use Planning Area includes land within 500 horizontal feet measured from the mean water level (95.5 feet above sea level) on the shoreline of Lake Champlain within the Town of South Hero. The purpose of this Land Use Planning Area is to carefully evaluate development in order to protect water quality, scenic beauty and to control development along public waters in the best interest of the community. Some parcels or portions of parcels within this district may be limited in their suitability for development.

*Conservation Overlay Land Use Planning Area Purpose Statement.* The purpose of Conservation Overlay Land Use Planning Area is to limit development in sensitive natural areas. Included are areas of state identified wetlands, floodplain and other sensitive resources as identified in the South Hero Town Plan with limited suitability for development.

# Transportation and Complete Streets

## Goals & Objectives

1. Maintain town roads and sidewalks in good condition as municipal budgeting and natural contingencies allow, with emphasis on the safety of all users and in compliance with State regulations.
2. Provide safe pedestrian access to village resources and businesses with sidewalks and other streetscape amenities.
3. Provide a variety of well-maintained scenic trails and paths throughout the Town.
4. Continue efforts so that the town’s road network can safely accommodate bicycle and pedestrian traffic.

## Implementation

1. Implement necessary improvements for compliance with the Municipal Roads General Permit.
2. Identify and upgrade undersized culverts to prevent washouts. Use best management practices for managing runoff during road construction or reconstruction.
3. Complete a Streetscape Scoping Study to improve pedestrian accessibility, including sidewalks, traffic calming elements and other streetscape amenities. Coordinate with LCIEDC’s S.H.O.R.E. project.
4. Support and participate with the LCIEDC’s S.H.O.R.E project to improve bicycle safety, share the road etiquette and other opportunities to create optimal experiences for cyclists from the Island Line Bike Ferry and local residents.
5. Communicate and coordinate with local residents on planned road improvements.
6. Support regional cooperation on trails development, interconnectivity of trails and connectivity of trails with destinations in order to provide non-motorized means of travel.
7. When conversions of seasonal homes to year-round occupancy are proposed, ensure that adequate all season access is provided for the occupants as well as for emergency vehicles as part of the zoning approval process for conversions.
8. Support Safe Routes to School and other walking projects.
9. Coordinate with VTrans on pedestrian accessibility and the need for reduced speeds and a crosswalk near the former Sandbar Inn & Restaurant.
10. Support public and private policies, programs or other efforts that promote alternatives to single-occupancy vehicle travel such as public transit improvements, car-sharing, telecommuting, flexible work schedules and school bus usage.
11. Support the construction of an additional park and ride lot near Exit 17.
12. Support CIDER’ efforts to provide transportation for elderly, disabled or other non-drivers.

## Transportation

The purpose of the South Hero transportation plan is to provide for safe, convenient, economic, and energy efficient transportation systems that respect the integrity of the natural environment, the vibrant Village areas, and the rural character of South Hero. The plan shall include the maintenance and necessary development of roads, public transit options and facilities for pedestrians, bicyclists, and motorists of all ages and abilities. It is more efficient

to accommodate all modes at the planning and design stage rather than try to retrofit.

## Complete Streets

Complete Streets is an to planning, design, construction and maintenance of our roadway network to consider all users, including pedestrians, bicyclists and transit riders. Context and current or potential travel patterns need to be considered in determining the appropriate way to meet the needs of all modes of transportation. Not every street or

road will be used by a wide variety of modes, but a complete streets approach considers all users, and seeks desirable, practical and affordable improvements that will be accepted by the community.

### Roads & Vehicle Traffic

The town maintains 22.09 miles of town roads with the use of town owned equipment, a full-time road foreman and 2 other full-time employees. The Selectboard appoints a Road Commissioner who directs the work done by the road crew. The budget is set by the Selectboard, approved by voters, and supported by taxes and additional state aid. Approximately 14 town roads are paved and 2 are gravel. The decision to pave a gravel road is currently balanced between maintaining a rural aesthetic, slower speeds, the convenience of blacktop and the availability of funds.

U.S. 2, a Federal Highway, traverses for about five and a half 5.783 miles along the western and northern side of the town. There is also state highway, VT 314, connecting US 2 to the ferry in New York State (1.592 miles in South Hero). Vermont Agency of Transportation completes actual and estimated traffic counts. The count shows an increase in traffic on Route 2 from 2019 to 2021 based on an actual count, from 8,837 to 9,156. It estimated a decrease in 2020, likely reflecting less travel during the pandemic. The northern mile of Route 2 and 314 are showing a decrease from 2019 to 2021, but it is based on estimated counts.

There are a large number of privately owned and maintained roads in the Town. The Town provides services on town highways only. New private roads and upgrades to support new development are required to comply with the Town’s Road Standards. The Town is not in the practice of accepting new town roads and is not obligated to, regardless of whether the private road is in compliance with town road standards.

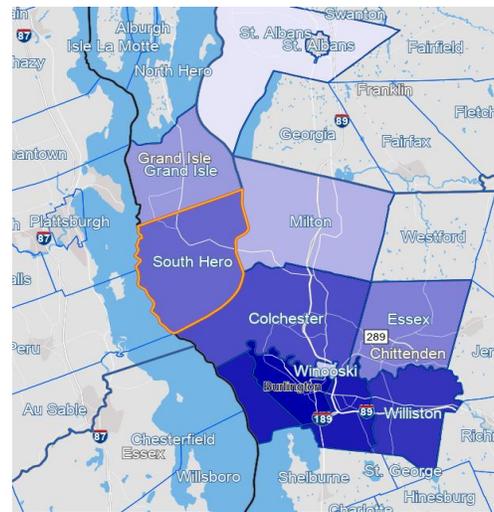
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In response to the Municipal Roads General Permit implemented as a result of the Vermont Clean Water Act (Act 64, 2015) to reduce stormwater runoff and erosion on local roads, South Hero has accessed and will continue to seek funding through the Agency of Transportation Grants In Aid Program to complete stone lined ditches and other important road improvement projects that improve stormwater management and the resiliency of local roads.

### Travel to Work and Commuting

The majority of workers living in South Hero (over 60%) travel to work in Chittenden County, with only 9% remaining in South Hero for employment. As a result, over 60% of commuters have over a 20-minute drive.



**Figure 3.1 Work Destinations, 2019**  
<https://onthemap.ces.census.gov>

**Table 3.1 Average Annual Daily Traffic Counts (VTRANS)**

Route	Start Location	End Location	2019	2020	2021			
US2	Grand Isle Town Line	MM 1.158	6,111	Est.	5,176	E	5,172	Actual
US 2	MM 1.158	Milton Town Line 5.573	8,837	Actual	7,485	E	9,156	Actual
VT314	Route 2 intersection	Grand Isle Town Line 1.592	3,242	Est.	2,746	E	3,111	Estimate

## Bicycle and Pedestrian Facilities

South Hero is committed to ensuring a complete streets approach with roadway projects in the town. In the village specifically, this will mean the design and construction of improvements for bicycle and pedestrian facilities. In the rural areas of town, appropriate context sensitive solutions that factor in all users of the road will be employed.

South Hero’s roads attract a significant number of pedestrians and bicyclists. There are 4,398 feet of existing sidewalk along the north and south sides of Route 2 in the center of South Hero Village, there are no other dedicated bicycle and pedestrian facilities (other than off road trail networks). 1,604 linear feet of sidewalk were added since 2017. The Town is committed to expanding the network of pedestrian and bicycle amenities.

South Hero’s appeal as a destination for visitors who want to spend a day exploring by bike has been amplified by the Local Motion Bike Ferry, which brings 250+ cyclists into South Hero on weekend days in the summer (200+ during the week).

In 2021, the Lake Champlain Islands Economic Development Corporation received a Vermont Outdoor Recreation Collaborate grant to:

- Better manage and grow cycling and pedestrian activity in the Town of South Hero,
- Reduce friction between cyclists, motorists, residents, and local businesses in South Hero, and
- Maximize the economic impact of cycling and pedestrian traffic on the South Hero economy.

This project will result in a plan for townwide improvements for bicycle and pedestrian accessibility, connection and etiquette.

Specific to South Hero Village and Keeler Bay Village, the Town has received a grant from the VT Bicycle & Pedestrian Program to develop a scoping study for streetscape improvements in the villages that will calm traffic, improve pedestrian safety and the overall design of the streetscape for pedestrian and bicycle users. This scoping study will start in 2023.

### Why Complete Streets?

-  Streets that accommodate all users are safer for everyone, including automobile drivers and passengers.
-  Complete Streets can provide greater mobility and accessibility to those without a car.
-  Complete streets can offer a choice for less costly modes of transportation, which has economic benefit to individuals or families.
-  Active travel (walking and bicycling) can improve health and provide needed daily exercise.
-  It is more efficient to accommodate all modes at the planning and design stage and correct safety issues for non-automobile road users, rather than retrofit after the fact.

*Adapted from Complete Streets: A VT Guide for Municipalities, VT Dept. of Health, 2012*

Additionally, South Hero Land Trust (SHLT) and the SH Recreation Commission have developed several public access trails, and are now working on a linked network of pedestrian and cycling trails that will connect local parks and beaches to the downtown.



### Town Plan Survey Results

Pedestrian access in the villages was an important priority to residents responding to the South Hero Town Plan Survey. 90% of respondents supported the vision of safe pedestrian crossings and 83% supported the vision of a walkable village with connected and well-maintained safe sidewalks. In an open-ended question about what residents would like to see changed in South Hero, 14% referenced bicycle and pedestrian infrastructure. Throughout the community engagement process for the plan update, residents referenced walkability within the villages as well as bicycle and pedestrian connectivity between the villages as an important goal.

## Community Transportation

*Commuter Parking.* There is one park and ride lot in South Hero on the east side of Route 2 north of Keeler Bay. Park and ride lots allow commuters to access car and vanpool options to save vehicle miles traveled and reduce carbon emissions.

*Senior and Special Needs Transportation.* Champlain Islanders Developing Essential Resources (C.I.D.E.R.), is a local organization dedicated to providing transportation services to seniors and people with disabilities in order to help them remain independent. CIDER provides paratransit transportation to critical needs such as to medical appointments.

*Public Transportation.* There are no regional public transit routes that directly service South Hero, nor does the Town provide any public transportation for its residents (other than the services offered by CIDER). The closest transit stop is located at the Chimney Corners Park and Ride in Milton, which provides service on Green Mountain Transits Milton Commuter (Route 56) or the St. Albans Link Express (Route 96) to Winooski and Burlington. The Town supports a new proposed State Park and Ride off of Interstate 89 Exit 17 in Colchester.

This new Park and Ride would be on the west side of Interstate 89 and would offer easy access to South Hero residents.

The Town supports the expansion of public transportation in South Hero, including expansion of flexible and micro transit options.

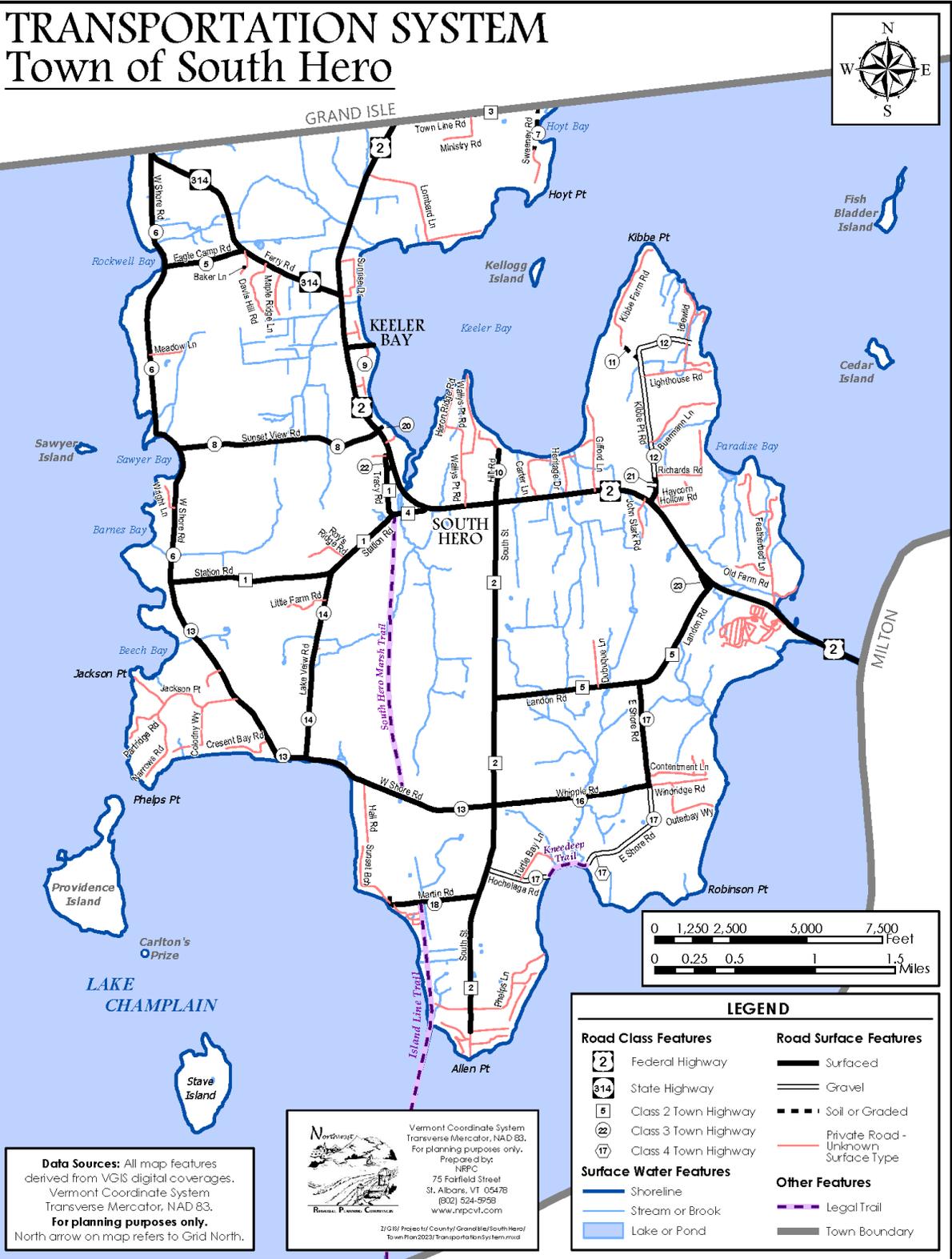


### *South Hero Town Plan Survey Results*

As part of the South Hero Town Plan Survey, roughly half of residents stated they would or were unsure of if they would use public transit. The most common reasons for wanting to use public transit were for appointments and transit connections. Almost 2/3s of those interested in using public transit were only interested in occasional use. Micro-transit or other flexible public transit options may be able to address these public transit needs.

*Ferries.* The Lake Champlain Transportation Company provides year-round ferry service between the town of Grand Isle and Plattsburgh, New York. The ferry dock is located on VT 314 in the Town of Grand Isle. Route 314 is an important link for the ferry traffic traveling to US 2 and I-89.

*Air and Rail.* Amtrak provides passenger rail service out of the St. Albans and Burlington depot on the Vermonter line which extends down to Washington, D.C. via Boston. A new route was added in 2021 with service to New York City. The Burlington International Airport in South Burlington, the Plattsburgh International Airport in Plattsburgh, and the Trudeau Airport in Montreal provide air service to the region. There is one identified water airstrip, West of Stave Island. Airstrips and helipads are not compatible with the quiet rural nature of South Hero. New airstrips and helipads shall not be built in South Hero unless they are designated for emergency use only.



# Municipal and Community Facilities and Services

## Goals & Objectives

1. Maintain and upgrade, where reasonable and necessary, municipal facilities and grounds at reasonable costs.
2. Strive to meet the basic needs of residents and access to affordable goods and services within town, including in times of emergency.
3. Ensure that new growth does not overburden town services by planning, budgeting, and exploring new ways to cover costs of growth such as impact fees.
4. Increase civic infrastructure, community engagement, and communication through transparent government.
5. Support and create outdoor recreation opportunities that are available to the public, including a system of multiple use paths, trails and recreational areas on municipal and private lands.
6. Support through policies and regulations the preservation of historic buildings and sites in South Hero.

## Implementation

1. Promote town plan objectives in the adoption of tax policies and planning for public facilities and services.
2. Explore innovative ways to finance and provide town services to reduce property tax burdens.
3. Explore ways to save on supplies, equipment and Town services (such as plowing) through cooperative efforts with other towns.
4. Encourage the involvement of community members in community affairs and Town government in order to increase the number of individuals represented while addressing Town issues. This will provide a broader perspective of ideas to consider when making important decisions.
5. Develop and maintain a capital budget and program that will identify anticipated town and school capital needs for a six-year period. Seek ways to minimize tax burdens on residents in any one year. The budget and program would contain a time frame for meeting anticipated needs and a method of financing the improvements.
6. Support efforts for education funding reform to address the property tax burdens imposed by Acts 60 and 68.
7. Investigate adopting impact fees, which would help finance the cost of specific town services.
8. Explore ways to increase the tax base without adding significant burdens on Town services. Among the ways to do this are to encourage light business growth in central locations, the use of vacant private and Town buildings for new uses, and encourage home-based businesses.
9. Encourage public/private partnerships to improve Town services whenever possible.
10. Encourage volunteers to participate in town government.
11. Support volunteers who are interested in creating and maintaining town trails and coordinate with regional trail projects.
12. Redevelop the Meeting House as a location for municipal and community events.
13. Support community events and activities such as farmers markets and weekend in the Islands
14. Ensure the Town continues to be represented in and participate in local and regional planning organizations such as the Northwest Regional Planning Commission, Lake Champlain Islands Economic Development Corporation (LCIEDC) Northwest Solid Waste District, etc.
15. Encourage the availability of safe and affordable child care.
16. Support the expansion of the Fire District #4 private water district and/or setting up other water districts in concentrated areas of the Town.
17. Support efforts to allow properly treated and filtered water from Lake Champlain to be used as potable water for domestic and business use.

18. Encourage water conservation and the use of water conservation devices.
19. Continue to support innovative solutions for safe sewage disposal for homes and businesses with waste water challenges. Encourage and embrace innovative new technologies for septic systems that would allow safe effluent disposal in challenged soils.
20. Pursue a municipal wastewater system for the South Hero village areas (South Hero Village and Keeler Bay Village) that implements the recommendations of the 2022-2023 South Hero Village Wastewater Feasibility Investigation.
21. Address the staffing issues of the Rescue Squad and the Fire Department.
22. The Town does not provide public facilities and services to the outer islands.
23. Encourage the development of communication technology infrastructure to and within the community.
24. Encourage a variety of telecommunications infrastructure. To this end, the Town should encourage solutions that minimize possible conflicts that might arise from these varied sources. Emergency broadcasting capabilities should be preserved first and foremost.
25. Encourage comprehensive, fast and reliable telecommunications network for the community. To this end, partnering with public and/or private companies may be appropriate Coordinate future growth with telecommunications providers to ensure that areas of expansion are adequately served
26. Continue to promote co-location of telecommunication facilities and appropriate siting and screening of these facilities from larger towers to smaller residential dishes.

## Tax Base & Cost of Services

In 2021 Grand List value is based on the 2019 reappraisal. Since 2013, property values on the Grand List have increased 5%. In the same time period, the municipal budget has increased 60%. This increase has been driven by a few factors including increasing salaries for town officers and adding emergency services personnel to the budget. The school budget has increased 24.5% in the same period, which is roughly in line with inflation.

Under Vermont’s Act 60 and 68, South Hero is required to transfer a significant amount of money raised by property taxes to the State for redistribution to other towns. This means that the education tax burden for South Hero is about double what is needed to support local requirements. Many South Hero taxpayers already feel overburdened by property tax rates, making them reluctant to approve any other spending in the town. Unless action is taken to relieve the property tax burden, improvements to existing Town services

and the expansion of Town services will be difficult to initiate. In 2022, the Town voted to approve a 1% local option tax to fund special projects without increasing municipal taxes. State law needs to be updated to include the Town of South Hero in the list of approved towns to collect the 1% local option tax. Our State legislators are attempting to update this legislation in 2023. Although most of its services are provided locally, the Town is joining with neighboring towns to identify services and resources that can be shared efficiently without sacrificing local control.

**Table 4.1 Property Values on Grand List**

Year	2013	2021	Change 2013-2021
<b>Total Property Values (in thousands)</b>	\$492,005	\$516,456	5.0%

**Table 4.2 Total Budget by Year**

	2003	2013	Change '03-'13	2022	Change '13-'22
<b>Town</b>	\$441,025	\$756,439	71.5%	\$1,214,846	60.6%
<b>School</b>	\$3,454,198	\$3,212,116	-7.0%	\$3,997,890	24.5%
<b>Total</b>	\$3,895,223	\$3,968,555	1.9%	\$5,212,736	31.4%

## Recreation

### Recreation Commission

A volunteer Recreation Commission plans several activities which are supported by tax dollars. For details and up-to-date information on programs visit <https://southherovt.org/departments/rec/>.

### Current Recreational Facilities

*State Parks.* The Round Pond State Park and Natural Area consists of approximately 125 acres of spectacular wetlands, fields, woodlands, and approximately 1,100 feet of Lake Champlain shoreline. This resource was conserved and was opened to the public in 2001.

#### *Public Trails.*

Trails make land available for walking, jogging, bicycling, horseback riding, skiing, snowmobiling, snowshoeing, and all-terrain vehicle use. These uses may not always be compatible with each other and trail planning should consider this.

Trail locations can include existing rights of way for roads and the former railroad bed and negotiated easements or licenses over private property.

There are six public trails existing in the Town today. Two (2) are located on private lands with easements, two (2) are located on state lands, one (1) is a connector between a private easement and state lands, and the Town owns the South Hero Recreation Trail. The town-owned Recreation Trail is located along the railroad bed from West Shore Road to Tracy Road as shown on MAP 6: Transportation System as the South Hero Marsh Trail. Additionally, the Island Line Rail Trail connects Martin Street in South Hero to Burlington in the summer via a bicycle ferry. The proposed ‘Robinson Trail’ would connect Tracy Road directly to a proposed crosswalk across South Street to Folsom School.

#### *Access to the Lake.*

Public access to the lake from the Town of South Hero is an important asset which enhances the recreational and scenic value of the town as a whole for residents, seasonal homeowners and visitors.

The public access areas in the Town are shown on the Facilities and Utilities map, and listed below:

- at the end of the public portion of Hill Road;
- at the end of the public portion of Lavigne Road as it comes into Keeler Bay;
- Keeler Bay Road at the first hard curve to the right;
- Vermont Fish & Wildlife Accesses:
  - Guilmette Access Area, at approximately 90 U.S. Route 2 near Featherbed Lane
  - Keeler Bay Access Area at the end of Sunrise Drive
- Sweeney Farm access off of Town Line Road (winter only);
- White’s Beach (owned and maintained by the Town);
- Allen Point Access to “the Fill”;
- The railroad bed on Keeler Bay, south of Keeler Bay Marina.
- “Knee Deep” Bay Trail; and
- Round Pond State Park on Landon Road.
- Keeler Bay Access Area at the end of Sunrise Drive
- Sweeney Farm access off of Town Line Road (winter only)
- White’s Beach (owned and maintained by the Town)
- Allen Point Access to “the Fill”

### Future Recreation Planning

In recent years, there has been a significant increase in the use of trails & recreations spaces highlighting the value of these community spaces. Over 80% of all respondents to the Town Plan Survey stated they would use a multi-use path designed for walking & biking. Developing additional trails and recreational spaces that are inclusive & accessible to all residents is a priority for the Town. Such development will require cooperation and negotiation with landowners, town investigation of liability issues, good access including parking facilities, public support, provision of public safety, protection of wildlife habitat and natural areas, and public funds.

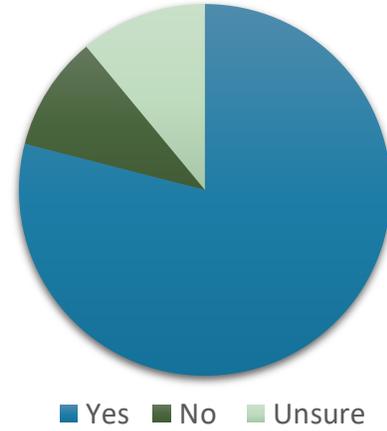
Volunteers can help in easement negotiations, trail planning, trail clearing, fundraising and monitoring. Federal and state funds are available for certain types of trails.

The Town and the Lake Champlain Islands Economic Development Corporation (LCIEDC) ([www.champlainislands.com](http://www.champlainislands.com)) are also considering how to best manage the Island Rail Trail to maximize economic benefits while reducing unintended consequences. The 2022 South Hero Town Plan Survey asked an open-ended question on the role of bicycle tourism in South Hero. While a plurality of residents stated they supported bicycle tourism, residents also noted that there is a need for better planning to ensure safety and reduce traffic impacts.

### Future Park Plans

Recognizing the need for additional recreational opportunities, the Town has begun planning for a future public park to be located behind the Old White Meeting House (South Hero Meeting House) in the South Hero Village. The Planning Commission has put forward as an initial recommendation that \$50,000 of ARPA funds be dedicated to the project and the Town is seeking additional funding sources to further plan & implement this priority.

**Chart 4.1: Would you or your family use a multi-use recreation path that was designed for walking/running, biking, etc.?**



Source: Town Plan Survey

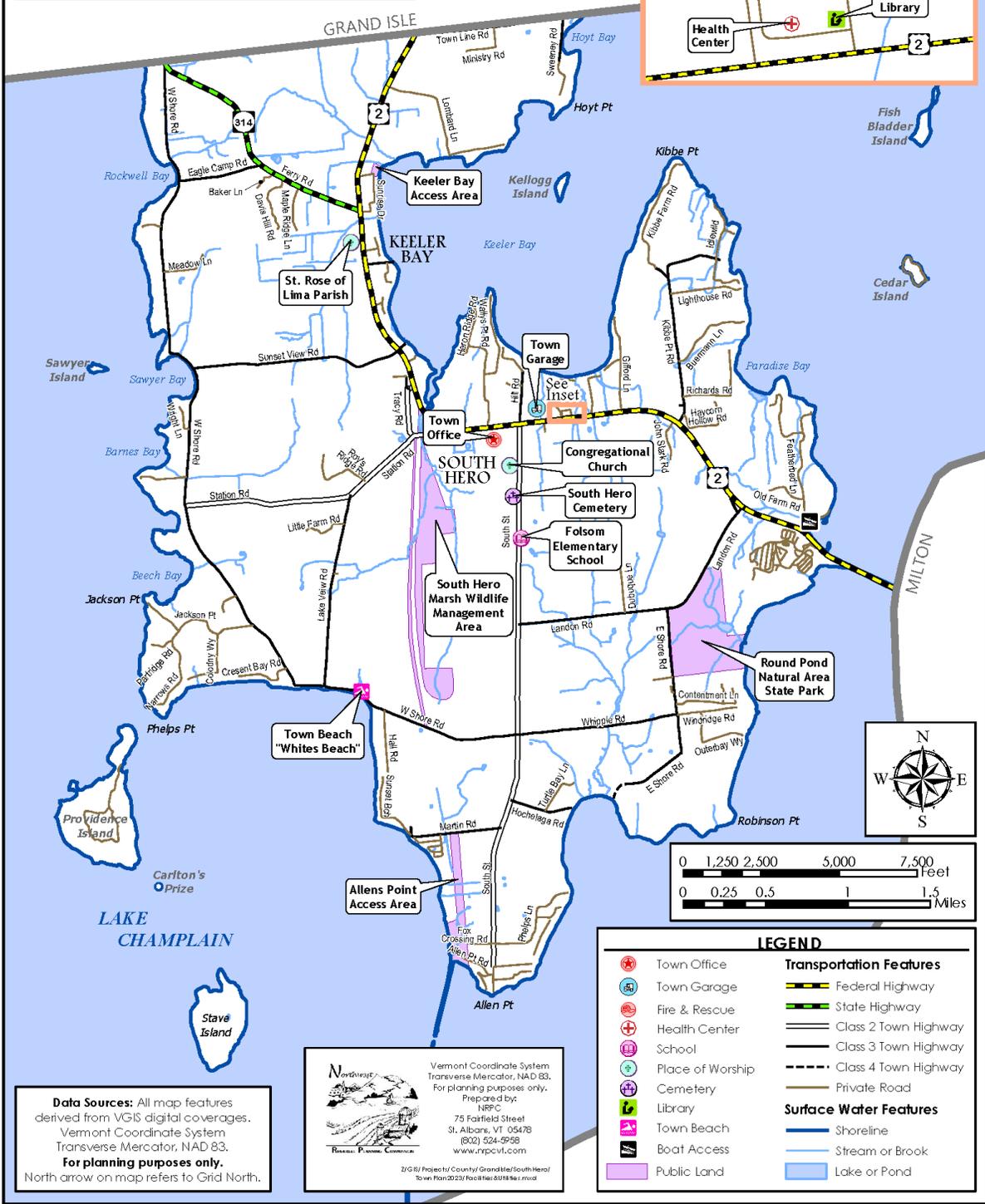
## Education & Childcare

### Education

The residents of South Hero recognize that a strong school system has a positive influence on the community. For this reason, it is important that the town keep, maintain, and enhance the Folsom Education and Community Center. It is integral to the identity of the town. The school provides a safe educational environment for students and a community building that serves as a focal point for community activities and events.

Built in 1948, and expanded in 1973, Folsom Education and Community Center serves grades K-8. It is noted for the dedication and morale of its teachers and staff, its high academic standards, and activism of volunteers in school and after-school programs. The school maintains an excellent student library. The gymnasium is also the site for the annual Town Meeting and other large community meetings.

# FACILITIES & UTILITIES Town of South Hero



After experiencing a peak of around 220 students in 1997, enrollment declined to about 110 students in 2012. Enrollment rebounded to around 150 by 2016 and has been level ever since.

Since GISU does not have a high school, students have school choice. Tuitions are set by the State Agency of Education.

Vocational and continuing education resources available to South Hero residents include the technical centers in Burlington & St. Albans, Vermont Adult Learning in St. Albans, and numerous post-secondary college opportunities throughout the state. Online courses offer continued learning opportunities from home of via the Worthen Library’s computer stations.

### Childcare

Over two-thirds of children under age 6 have all parents in the workforce and are likely in need of childcare. There are 1.2 children under 6 for each childcare spot in South Hero, meaning that many South Hero families may have challenges finding licensed care in their community.

#### *Champlain Islands Parent Child Center (CIPCC)*

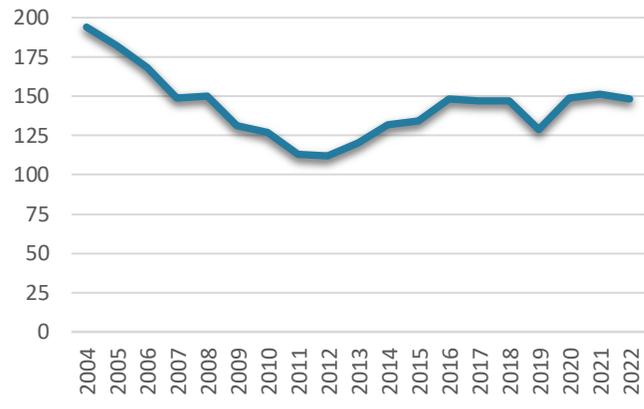
The Center received the Allen House in 2002, and the large “Red Building” portion of the Center was built in 2008 and serves as its primary facility for children ages 6 weeks through 5 years.

The Allen House is where universal pre-K students are taught. The Red Building serves as both daycare and preschool. Between both buildings, CIPCC serves 32 preschoolers annually and 24 infants and toddlers. The Allen House is also where the school provides after school care for Folsom students.

#### *Registered Daycare Centers & Homes*

There are two other registered daycare facilities in South Hero. Turn to Joy Early Learning Center ([www.TurnToJoy.com](http://www.TurnToJoy.com)) is located in South Hero Village and has Infant and Toddler Programs with a total capacity of 24 children. Their preschool program operates in Grand Isle.

**Chart 4.2 Folsom School Enrollment**



Source: Vermont Department of Education

A registered home-based childcare provider, Roots & Wings, is located on South Street (<https://southherorootsandwings.weebly.com/>) It has a capacity of 10 children from infants to school-ages.

## Municipal & Community Facilities

### Solid Waste

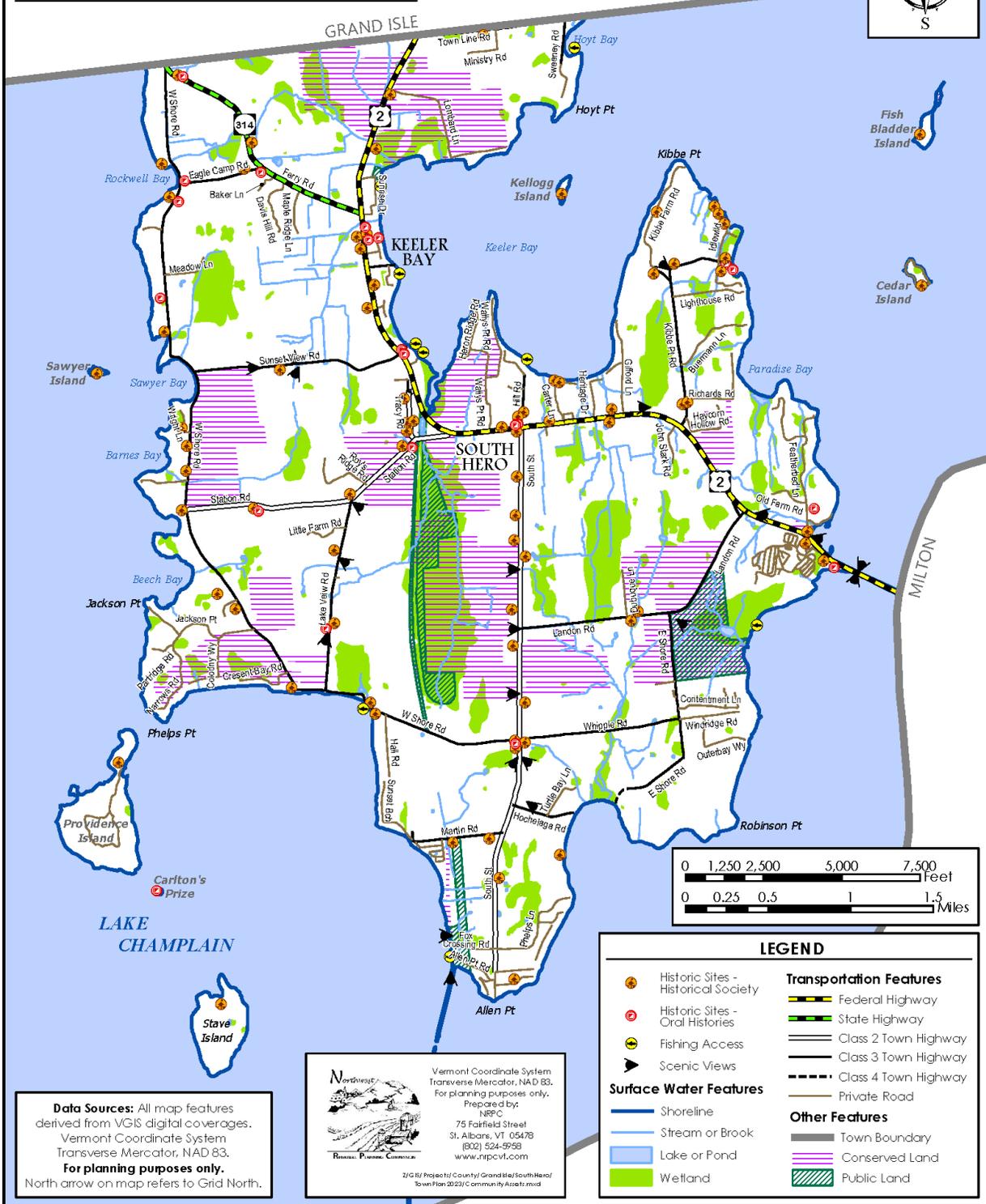
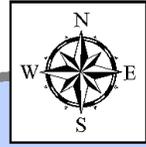
There is no town program for curb-side trash pickup. Residents are responsible for contracting their own service. Several times a year, special trash days are coordinated with the Northwest Vermont Solid Waste Management District (NWSWD) for the disposal of large items. The Town is a member of the NWSWD with transfer stations located at 362 West Shore Road in North Hero and the Georgia Recycling Center located at 158 Morse Dr, Fairfax, VT (see [www.nswsd.org](http://www.nswsd.org) for operating hours & closing) and continues to address the problems of household hazardous waste, sludge and other long term solid waste issues through the district.

### Fire Department & Rescue Squad

The Rescue Squad is staffed by a combination of trained volunteers and paid staff. Paid staff were funded by the Town voters starting in 2019 to alleviate staffing shortages. With the construction of the new senior housing facility the Rescue Squad anticipates an increase in calls and is considering hiring staff for nighttime shifts.

# COMMUNITY ASSETS

## Town of South Hero



The Town Fire Department is staffed by trained volunteers. The main funding of the operations of both these organizations is through public contributions. Some purchases of equipment for the Fire and Rescue Departments are funded by tax dollars. In 2018, both organizations moved into a shared building on Community Lane.

### Library

After a \$1.5 million-dollar fundraising campaign, the Worthen Library was opened in 2019. Moving the library to its own dedicated building has allowed for an expansion in hours, additional programming, and for the library to be used for community meetings. Current programming includes lending books, movies, equipment as well as holding events for adults and children. The Library is primarily funded by a Town tax dollars, as well as by private fundraising. The library is staffed by two salaried librarians and many volunteers from the community.

### Water & Wastewater

There is no town water system. There were several water/fire districts, three of which formed Water District 4, and constructed a pumping and chlorination system to supply water to some of the residents of South Hero and Keeler Bay Villages. The districts maintain their own budgets and fund their operations with assessments separate from town property taxes. Existing and future water supply needs in the Town could be impacted by the emerging zebra mussel problem in Lake Champlain and the state’s prohibition on the use of lake water for water supply in subdivisions. Investment and/or coordination with adjoining towns in providing water supply and distribution should continue to be considered.

In 2021, Fire District #4 installed 1,400 feet of upgraded and new water line to support the development of BayView Crossing, a 30-unit senior housing in the South Hero Village. The extended water line may also support additional growth in the Village.



Figure 4.1 South Hero Fire and Rescue Building. Photo Courtesy of South Hero Volunteer Fire and Rescue Inc.



Figure 4.2 Worthen Library, photo from grand opening.

There is no town sewer system. All residences and businesses must comply with state regulations when installing their systems. Being a Lake community the Town of South Hero encourages old wastewater systems be upgraded before there is a failure issue. New technologies are available that can even pre-treat wastewater.

The lack of wastewater capacity in the villages creates some barriers to the goal of having vibrant villages with a mix of housing, businesses, and municipal services. Development potential and density (the amount of development per acre) are directly dependent on the capacity of the soil and land to accommodate soil-based wastewater treatment. The Town is currently conducting a feasibility study to understand the potential options for decentralized wastewater treatment in the villages.

### Cemetery

There is a town cemetery located on South Street which operates with some town funding as well as funding from a cemetery trust fund and income from the sale of lots.

### Old White Meeting House

Also known as the South Hero Meeting House, was an historic church & meeting house constructed in 1816 in the heart of South Hero Village. Currently the building’s second floor houses Grannie’s Attic seasonally, while the first floor is unused. In 2019, the Town conducted an extensive survey effort and found that the majority of respondents wanted to keep the building and renovate it for year-round use. The Town has completed initial conceptual design and has received \$100,000 in grants to fund the renovations. The Town and a nonprofit community group are currently working towards funding the remainder of renovation costs through grants, fundraising and potential Town funds. At the 2023 Town Meeting day, residents voted in favor of a motion to conduct a study of the feasibility, cost, and seek grants for moving the Town Offices to the Old Meeting House site.

### Community Health

Community health is measured by a variety of social factors such as education, health care access & quality, economic stability, neighborhood & housing stability, and social & community context. The Town’s investments in community planning such as; creating complete streets, recreation opportunities and community spaces like the Worthen Library, Old White Meeting House and proposed Recreation Park will all serve to support multigenerational community health goals.

South Hero has diverse array of health care services, both professional and volunteer, that contribute to the well-being of its residents. They include fire and rescue squads, a physical therapist, chiropractor, yoga studios, massage therapist, the Visiting Nurses Association

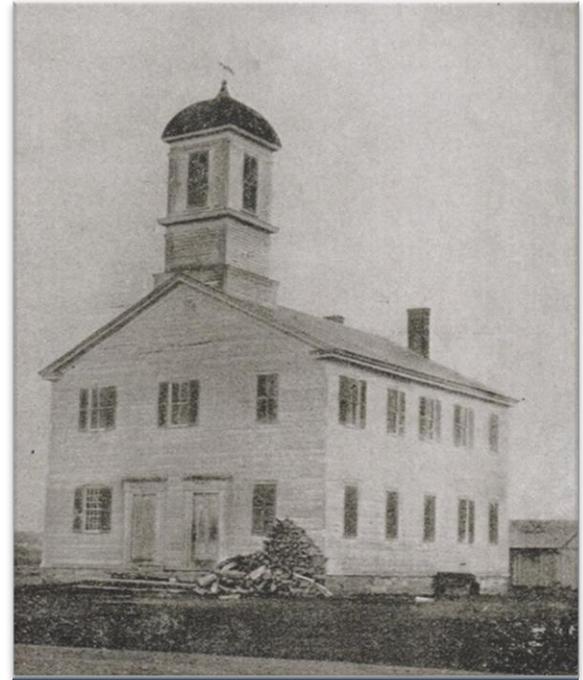


Figure 4.3: South Hero Meeting House (circa 1895)

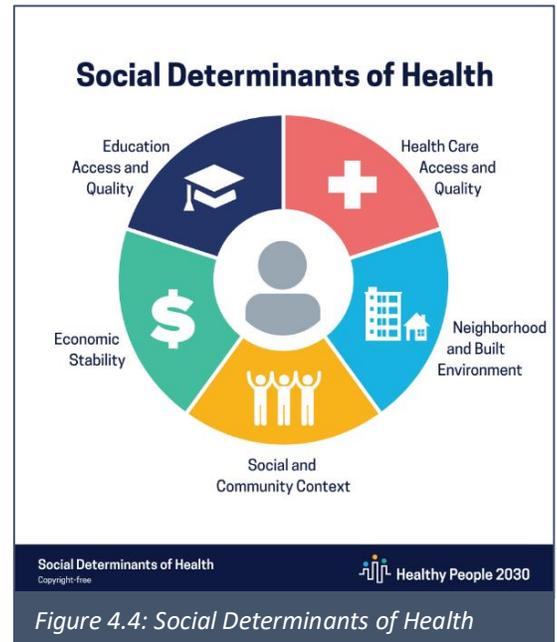


Figure 4.4: Social Determinants of Health

the Champlain Islands Parent Child Center and Champlain Islanders Developing Essential Resources, Inc. (C.I.D.E.R.), a non-profit group whose mission is “to develop and foster resources that enable the people of Grand Isle County, Vermont to live in their community with dignity.” C.I.D.E.R. provides direct services such as transportation and accessibility services, as well as collaborating with other groups. C.I.D.E.R.’s efforts are

directed at providing the resources and assistance that individuals need in order to remain living independently in their own homes, including providing wheelchair accessible transportation, senior meals, constructing wheelchair ramps and a variety of other programs. C.I.D.E.R. relies heavily upon over 130 volunteers.

The Community Health Center: Champlain Islands is located in South Hero Village at 52 Community Lane. Offered services include; primary care, medical, mental health and psychiatry. For appointments call: 802-372-4687. The Center is a Federally qualified Health Center with a mission to serve all, including those typically underserved. The nearest hospitals to South Hero are Northwestern Medical Center in St. Albans and the University of Vermont Medical Center in Burlington.

A notable loss to the healthcare services of South Hero was the closure of the South Hero Pharmacy in 2020. Residents must now travel off the Islands to access a pharmacy. This has created a healthcare barrier for some residents. There is a need for a pharmacy and the Town supports efforts to restore this health service.

## Telecommunications

Telecommunications facilities in South Hero include Consolidated Communications phone lines, Consolidated Communications Digital Subscriber Loop (DSL), Comcast Cable TV and internet, satellite television and radio, various cellular phone service antennas, wireless Internet providers such as HughesNet and GlobalNet, and shortwave radio frequencies that are operated by amateur operators and emergency services. Free Wi-Fi is available at the Worthen Library on Community Lane in the South Hero Village.

As telecommunications continue to become a vital part of everyday functions both at home and at work, pressures to increase the speed, reliability, and affordability of these networks will continue to escalate. Northwest Vermont is currently served by one internet transmission line originating to the south.

While the majority of South Hero residents have access to service that meets the minimum standards for broadband, 2% still lack broadband service and none are served by high-speed fiber.

The majority of residents have cellular access. The Town should continue to support improvements to the communication infrastructure so that all residents, government services, businesses, and the like can take advantage of existing and developing technologies. To support enhanced broadband access, the Town has joined the Northwest Communications Union District (NWCUD). The goal of the NWCUD is to bring fiber to every home and business in the district.

## Civic Organizations

Civic organizations are involved in children's activities, historic preservation, agriculture, business, social services, church activities, and community events among other activities. The organizations and activities include Masons, Eastern Star, Granny's Attic, 4-H, churches and church activities, Veterans of Foreign Wars, Camp Hochelaga (a YWCA girls camp), South Hero Players, and 4th of July Parade Committee.

The South Hero Land Trust (SHLT) is an active organization with the mission of protecting farmland, woodland, natural and recreational areas, and open spaces which help give South Hero its distinctive quality of life. According to their website, over 1,800 acres of land have been conserved in South Hero, protecting farmland, natural areas, lakeshore, and scenic vistas of Lake Champlain and the Green Mountains.

# Housing

## Goals & Objectives

1. Ensure that safe and adequate housing is available and affordable for South Hero residents.
2. Guide the Town in achieving well-managed residential growth that includes a diversity of housing types that meet the needs of South Hero’s population at every stage of life.

## Implementation

1. Implement zoning regulations in the town’s rural areas that require residential subdivisions to use land efficiently by clustering lots, expanding on the existing road network and sharing infrastructure, while preserving important resource lands, including but not limited to agricultural land and wetlands.
2. Implement zoning regulations that allow for concentrated residential development in the village districts at higher densities than allowed in other zoning districts.
3. Support efforts to provide adequate infrastructure to support concentrated development in village areas, including municipal wastewater, bicycle and pedestrian improvements and complete streets.
4. Support efforts that incentivize the development of accessory dwelling units for their ability to provide affordable housing options.
5. Study the impact of short-term rentals on the availability of affordable housing for year-round residents.
6. Support, and share information about, programs and resources that help to lower cost of home occupancy and assist in the preservation and maintenance of existing housing units, such as energy conservation, weatherization, and utility assistance.
7. Support, and share information about, programs and resources that assist seniors or low mobility residents remain in their homes such as HomeShare Vermont, Meals on Wheels, and CIDER.

## Current Housing Stock & Households

South Hero has 1,096 housing units. South Hero’s housing stock is comprised primarily of single-unit detached homes, the majority of which were built between 1960 and 1999. Approximately 163 units have been permitted in the past 20 years. These permitted units are overwhelmingly single-unit detached dwellings with just 2% of all permits being for multi-unit developments. It is important to note that not all permitted units may have been constructed. In 2022, the Bayview Crossing senior apartment complex opened. This complex has 30 rental units and includes a mix of market-rate and affordable units.

85% of South Hero’s year-round occupied housing units are owner-occupied, while 15% are renter-occupied.

## Seasonal Housing & Short-Term Rentals

Of the 1,096 total housing units, roughly 35% of South Hero’s housing stock is used seasonally, which is defined by the Census as units that are lived in less than half the year. According to the Grand List, over 90% of seasonal units have lake frontage. The proportion of seasonal units as a percentage of all housing units has grown by 9% over the last 10 years.

**Chart 5.1 Do you think the Town should adopt more restrictions on short-term rentals?**



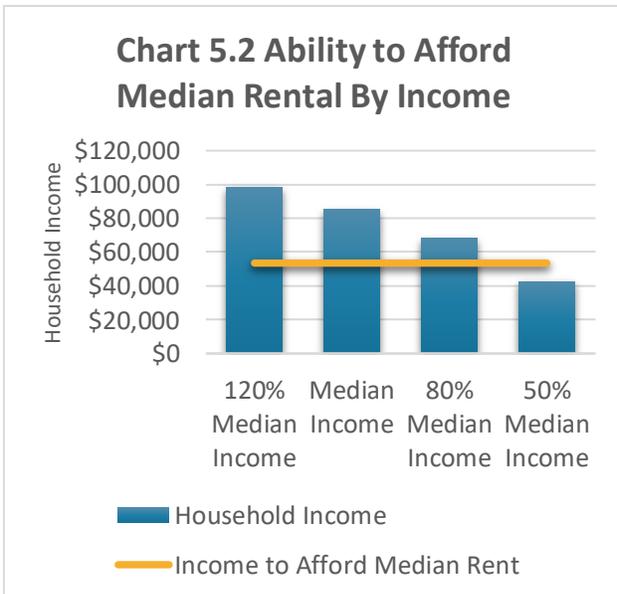
In recent years, the number of short-term rentals has increased across the state of Vermont. Short-term rentals are properties rented for 30 days or less. In South Hero up to 2% of units are used as whole-house short-term rentals. Respondents to the Town Plan Survey were divided on whether or not the Town should implement specific regulations for short-term rentals. The plurality were unsure, while a third opposed restrictions and 20% supported restrictions

## Housing Affordability

Affordable housing is defined under 24 V.S.A. §4303 as shown in the box to the right. According to the U.S. Census American Community Survey, the median household income in the county in 2021 was \$85,154. This is higher than the median income of the MSA or state and was therefore used in the affordability calculations below.

### Rental Housing

According to the 2021 American Community Survey the median rent & utilities in South Hero is \$1,337. To meet the definition of affordability, a household would need to earn at least \$53,480 to pay the median rent. The median rent is affordable to most residents, but not to those with very low incomes. 18% of current renters in South Hero pay more than 30% of their income for rent (17 households).



Source: U.S. Census American Community Survey S1901 ACS 5 Year Estimate; U.S. Census American Community Survey DP04 ACS 5 Year Estimate

### Definitions

**Affordable Housing:** Under 24 V.S.A. §4303 affordable housing is defined as:

- 1) Owner-occupied housing for which the total annual cost of ownership does not exceed 30% of the gross annual income of a household at 120 percent of the highest of the county median income, MSA median income, or statewide median income.
- 2) Rental housing for which the total cost of renting does not exceed 30% of the gross annual income of a household at 80% of the highest of the county median income, MSA median income, or statewide median income.

**Burlington-South Burlington MSA:** A Census-defined geographic region consisting of Chittenden, Franklin and Grand Isle Counties.



Figure 4.3. Image of Bayview Crossing Senior Housing Complex. Image Courtesy of Cathedral Square.

### Homeownership

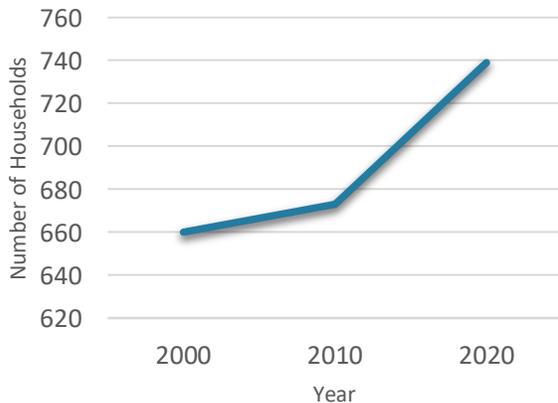
The median sale price of a home in South Hero has increased 74% from 2015 to 2021. Homeownership is extremely unaffordable for households making the median incomes for the county. A household would need an income of almost \$140,000 to afford the median home in South Hero.

Homeownership affordability limits were calculated using the VHFA Affordable Home Price Calculator under the assumption of a mortgage with 5% downpayment, and average interest rates, insurance, PMI and property taxes.

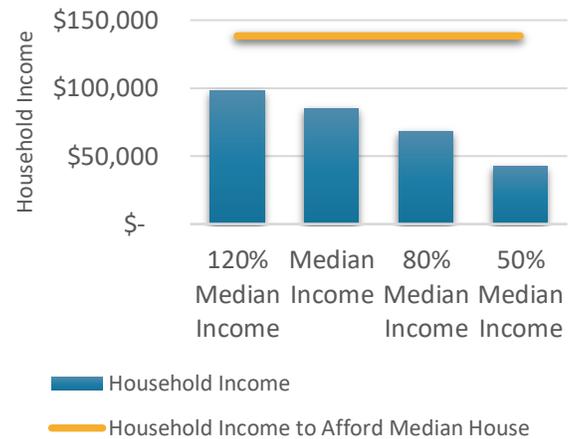
¼ of current South Hero homeowners pay more than 30% of their income on housing (97 households). Senior homeowners were more likely to find housing unaffordable.

Many South Hero residents are concerned about the impact of high housing prices. In an open-ended survey question about the impact of the increased prices of housing in South Hero common response themes included concerns that only wealthy households would be able to afford to live in South Hero, that South Hero locals would be priced out, and that workers and young people would be priced out. Only 7% of respondents did not feel that price increases had an impact on the community. Roughly 30% of respondents were unsatisfied with current housing options in South Hero.

**Chart 5.3 South Hero Household Growth**

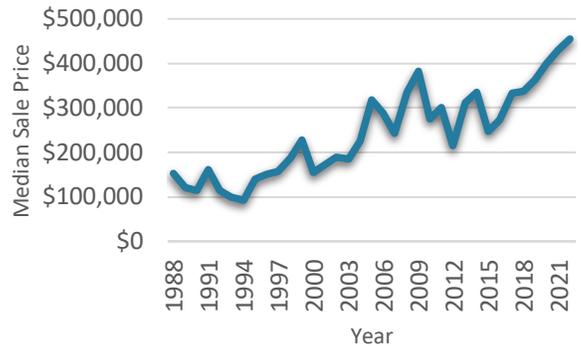


**Chart 5.4 Ability to Afford Median Home By Income**



Source: U.S. Census American Community Survey S1901 2021 ACS Year Estimate; Vermont Department of Taxes, Property Transfer Tax (PPT) Records via Housingdata.org, VFHA Housing Affordability Calculator

**Chart 5.5 Median Home Sale Price In South Hero**



## Future Housing Needs

While the population of South Hero is relatively stagnant, the number of households has continued to increase over the last 20 years due to the trend of smaller households. If household sizes continue to get smaller, there will be a need for new housing units even if population remains similar. In South Hero many of these new smaller households are senior households, with the number of residents over the age of 65 nearly doubling in the last 10 years. Many of these households would likely prefer smaller, more affordable housing units that are easily accessible to services and community spaces.

There is also a need for more affordable housing options in South Hero. Very low-income households are unlikely to find affordable housing option in South Hero, and even those making above median incomes may be unable to afford homeownership.

To meet future housing needs, the Town will need to move away from the current development pattern of almost entirely large lot single unit houses.

Meeting housing demand with exclusively this type of development will lead to sprawl and will not address the affordability issues. Smaller units, multi-unit structures, accessory dwelling units and manufactured homes can all provide more affordable options. For instance, adding an accessory dwelling unit to an existing home provides a new rental unit and can reduce the housing costs for the homeowner.

Municipal regulations and policy play a major role in determining the location, density type and amount of housing available in South Hero.

The Town has identified South Hero Village and Keeler Bay Village as an appropriate place for denser housing development and should consider how best to reduce regulatory barriers to appropriately scaled residential development in these areas. Investments into infrastructure, such as community wastewater, can also support denser residential development.

### Equity and Housing

Having a broad range of housing options at all price points can support an equitable and inclusive community. When housing options are unaffordable, those with median or low incomes are shut out of the community. Municipal regulations can contribute to this problem by creating unnecessary barriers to housing types other than single-unit structures.

# Local Economy

## Goals & Objectives

1. Support expansion of year-round businesses and jobs in South Hero, while continuing to ensure a strong seasonal economy.
2. Actively encourage commercial and small, light industrial enterprises in and near the village areas, in suitable locations on major roads, and in small, mixed use homesteads.
3. Support farming and maintain agricultural land to keep the rural landscape of the Town and help the local economy.
4. Support the development of home businesses and economic opportunities that fit with the rural character of South Hero.
5. Encourage and preserve economic diversity.

## Implementation

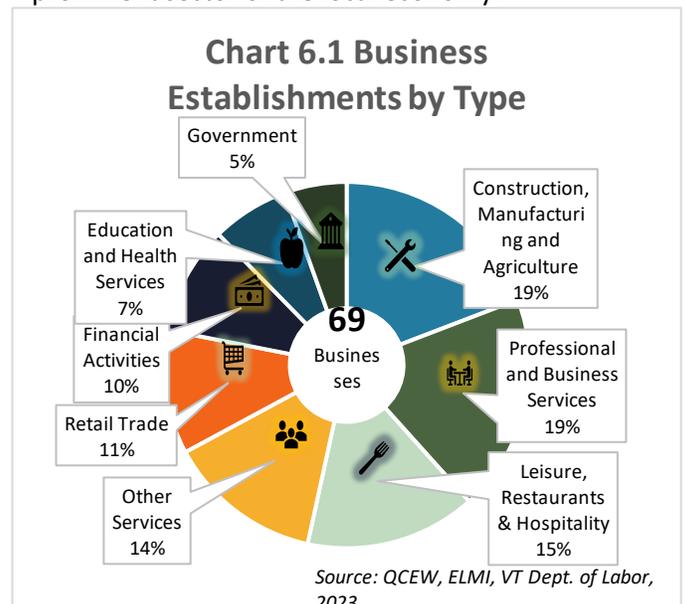
1. Home businesses should be encouraged, provided such operations do not interfere with the residential and agricultural character of the surrounding area.
2. Commercial development should be limited to where there is adequate sewage disposal capability, water supply, and road access and where the development will not adversely impact gateways to the village areas or contribute to strip development.
3. Promote incentives to maintain farms and preserve agricultural land, through tax policies, regulations, and the purchase of development rights and conservation easements.
4. Continue to study and support solutions to the lack of water and wastewater capacity in South Hero.

## Employment Trends

The labor force in South Hero hovers around 1,000, which includes residents of South Hero aged 16 and over that are employed or unemployed, including those in active military duty. The size of the labor force shrank by about 6% during the pandemic but seems to have recovered to pre-pandemic levels by the end of 2022. In December of 2022, the labor force was 1,029. The annual average unemployment rate for 2021 was 3%, down from an all-time monthly high of 10.2% in April of 2020.

South Hero has 69 year-round and seasonal businesses with 363 employees based on 2021 data from the VT Department of Labor. The number of businesses in 2021 is about the same as the number of businesses in 2010. 25% of the employees in South Hero work in the leisure and hospitality sector, 17% work in government and 16% work in retail trade.

Tourist and recreation businesses continue to be an area of economic growth; residents run riding stables, recreation facilities, charter fishing, restaurants and year-round lodging facilities. While not a major employer, agriculture remains a prominent sector of the local economy.



## Local Businesses

Businesses in South Hero are largely concentrated in the villages and include restaurants, health care, a small grocery stores, and a several other personal and professional services. There are many tourist services and attractions including: museums, gift stores, marinas, fishing accesses, nearby ferry service, fossil sites, farmers’ markets restaurant/snack bars/delis, gas stations, groceries, bed & breakfasts, campgrounds and historic sites. The closest chain supermarket is located off island in Milton. The Lake Champlain Islands Economic Development Corporation provides a directory of local businesses ([www.champlainislands.com](http://www.champlainislands.com)).

There is no data on the number of people that have home businesses (also referred to as home occupations) but there are many in South Hero due to good internet access and its remote location. The pandemic also increased the number of residents that work from home and while some returned to offices many maintained remote work. This is supported by data from the American Community Survey, which reports that the percentage of workers commuting to work 10 minutes or less increased from 19% in 2019 to 25% in 2021.

## Income

Median incomes in South Hero are higher than the County and State. The median family adjusted gross income (AGI) in 2021 was \$116,985, a 12% increase since 2019. This figure reflects income tax returns filed as married filing jointly and head of household. While the increase is sizable, the 2021 increase was not as high as the increase in inflation during that year. The poverty rate in South Hero is 4.8%, which is lower than the County and the State (U.S. Census Bureau, 2021 American Community Survey (ACS) 5-year estimates). The poverty rate is higher for the population aged 18-34 and for the population 5 years and under, indicating that affordability for young families is an issue in the community.

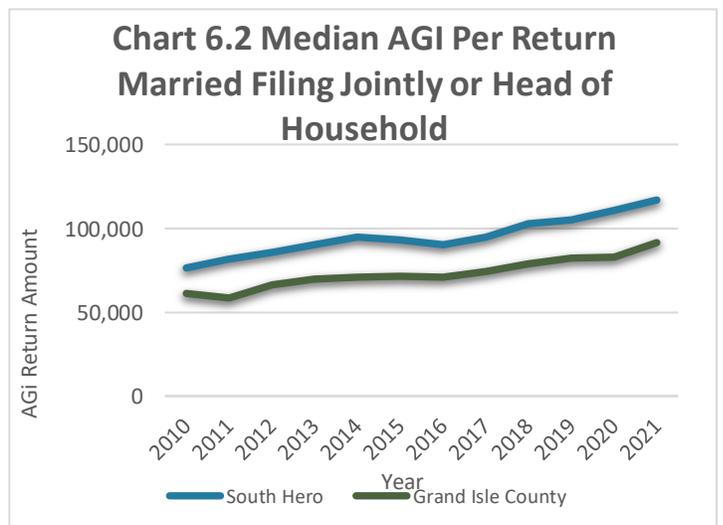
## Looking to the Future

South Hero’s economic development strategy is centralized around concentrating commercial and housing in the villages and continuing to expand and maintain its recreation and trail amenities to support local residents and a robust tourism economy. South Hero is a destination in the summer months for vacationers along with day time tourists arriving by bike on the ferry. Efforts to increase bicycle and pedestrian safety, amenities and better connect visitors to businesses and vice versa will grow this sector of the economy. The opportunity and impact of the tourist and recreation economy in South Hero is significant and cannot be emphasized enough.

Factors that influence current and future economic development in South Hero include current zoning and permitting processes, access to high-speed internet, cell phone coverage, and access to water and wastewater infrastructure.

Recently, the town worked with local developers on a new mixed-use development at the southern end of South Hero Village in response to the need for new municipal facilities, senior housing and businesses. The development on Community Lane is a great success that includes the Worthen Library, Fire & Rescue Departments, the Community Health Center, a deli/restaurant, 30 rental units of senior housing and additional commercial office space, including for South Hero Land Trust. A local brewery built a new space next door.

The town has zoning regulations that allow for increased density and mixed-use



development in its village areas, while limiting the density and intensity of development allowed outside the village areas. South Hero does not have any areas designated for industrial development but does allow for light-industrial development in all areas of town, including the village areas, as a conditional use with site plan review. It is important to allow for light-industrial development, but further work is needed to better define this use. It may be appropriate to designate certain areas where light-industry is not allowed.

It is important to ensure adequate telecommunications infrastructure for business development, including the increased demand for home occupations and remote work. While the majority of South Hero residents have access to service that meets the minimum standards for broadband, 2% still lack broadband service and none are served by high-speed fiber. The majority of residents have cellular access. To support enhanced broadband access, the Town has joined the Northwest Fiberworx (formerly Northwest Communications Union District).

Wastewater and water supply infrastructure are a significant hurdle for current and new development in the villages. There are several small private water districts, however there is no municipal wastewater system and local soils severely limit the capacity for on-site soil based wastewater management. In 2023 a feasibility study was in process to determine the potential for small, community waste-water systems to possibly serve the village areas.

# Flood and Climate Resilience

## Goals & Objectives

1. Encourage flood emergency preparedness and response planning in South Hero. Encourage flood emergency preparedness and response planning in South Hero.
2. Encourage the protection and restoration of floodplains, wetlands and upland forested areas that attenuate and moderate flooding and fluvial erosion.

## Implementation

1. Continue to be a member of the National Flood Insurance Program & ensure that the Land Development Regulations meet all NFIP minimum requirements to protect floodplains, prevent damage to property, and mitigate risk to human lives.
2. The Planning Commission, Selectboard, and Town emergency services personnel shall work with State and Federal agencies to ensure that connection to mainland Vermont via U.S. Route 2 is maintained during a flood event.
3. The Planning Commission and Selectboard shall draft and adopt a Local Hazard Mitigation Plan (LHMP) for South Hero that addresses mitigating risks posed by flooding and other disasters.
4. The Town Plan endorses the recommendations of the LHMP.
5. The Selectboard shall annually adopt a Local Emergency Operations Plan (LEOP).
6. The Planning Commission and Zoning Administrator should work with the Vermont Agency of Natural Resources to investigate future adoption of River Corridor or Fluvial Erosion maps and regulations.

## Flood Resilience

### Floodplain

The Town of South Hero is in the unique position of being on an island, surrounded by the waters of Lake Champlain. The land is fairly flat, and there are few streams of any significance on the island. The result is that the island typically does not face catastrophic inundation resulting from single major storm events such as hurricanes. The flooding that does occur tends to be from the rising waters of Lake Champlain. Such flooding tends to start slowly and last for an extended amount of time. Flooding can pose major transportation issues, property damage, and environmental damage to Lake Champlain.

South Hero’s Land Development Regulations includes standards specific to development in the Special Flood Hazard Area (SFHA), or 100-year floodplain, as delineated by FEMA on the Town’s Flood Insurance Rate Maps (FIRM). Existing FIRMs are dated as effective on June 15, 1978 and the Flood Insurance Study was published in June 3, 1988.

A new version of the FIRM is expected to be released in 2023.

The 100-year flood plain includes several tributaries to Lake Champlain, the “Crick”, and several wetlands (See Flood Insurance Rate Maps for Town of South Hero in Town Clerk’s Office for official descriptions.) Map X also depicts the 100-year flood zones.

### South Hero Local Hazard Mitigation Plan

In 2018, the Town adopted a local hazard mitigation plan (LHMP) which has been approved by FEMA. The plan details historic events and future mitigation of major disasters, including flooding, severe thunderstorms and winter storms.

All adopted flood hazard regulations meet or exceed minimum requirements set by the National Flood Insurance Program minimum. Adoption of flood hazard regulations and the FIRM allows the Town to be a member of the National Flood Insurance Program (NFIP) and enables all residents of South Hero to purchase flood insurance. As new flood maps are released by FEMA, the Town may need to further update its floodplain regulations to maintain NFIP compliance.

The primary flood threat facing the Town is posed by Lake Champlain. The last time Lake Champlain exceeded the USGS Major Flood Stage Elevation (101.5 feet above Sea Level) was in 2011. The Lake has exceeded 100 feet in elevation approximately 5 times in the past 15 years (see Chart X). The most recent large flooding event was the Flood of 2011. During that flood Lake Champlain's waters reached a height of 103.27 feet above sea level (ASL) as measured at the USGS gage at the Echo Center in Burlington. Flooding was exacerbated by waves caused by high winds.

Flood risk on Lake Champlain in South Hero is greatest from mid March to early June, with the highest risk during early May as melting snow from the mountains flows into the Lake and raises the water level. Abnormally high rainfall during this time frame increases the likelihood of flooding.

Roughly 5% of all structures in South Hero are located in the 100-year floodplain. The location of private property in the floodplain has led to issues with septic systems and unsecured personal property such as propane tanks. More attention should be paid by the Town to ensure that lakeshore property owners located within or near the Special Flood Hazard Area take proper precautions against flooding. Such precautions should include securing propane or other fuel tanks in compliance with the NFIP, as well as securing any loose personal property that might get washed into the Lake during a flood. Further investigation needs to be done regarding ways to improve septic systems to be more tolerant of flooding in cooperation with the State Agency of Natural Resources.

There are four flood stages defined by USGS for Lake Champlain. These are:

- Action Stage, at 99.9 feet Above Sea Level (ASL),
- Flood Stage, at 100.0 feet ASL,
- Moderate Flood Stage, at 101 feet ASL, and
- Major Flood Stage, at 101.5 feet ASL.

Parts of South Hero, such as the south end of Keeler Bay, Wally's Point, and parts of West Shore Road, and U.S. Route 2 near Milton are and will continue to be the parts of South Hero most at risk for flooding from Lake Champlain. West Shore Road is a Town road and Route 2 is a U.S. highway. During the 2011 flood, access to South Hero across the causeway from Milton on U.S. Route 2 was reduced to one lane due to flooding through the wildlife preserve at the State Park. A more severe flood could pose serious access problems for residents of South Hero because U.S. Route 2 is one of the only three means of vehicle access to the Lake Champlain Islands from the United States.

Lake Champlain flows north into Canada, via the Richelieu River before proceeding to the St. Lawrence River in Montreal before eventually flowing to the Atlantic Ocean. That means that Canada, which is north of Vermont, is actually "downstream" when referring to Lake Champlain's flow. After the flooding in 2011, an international joint commission was formed to examine potential structural and non-structural solutions to minimize impacts of flooding. The report recommends two measures as possible structural measures to reduce flooding, selectively removing material and constructing a weir in the Richelieu River and allowing moderate levels of waters to be diverted through the Chambly Canal during flood events. South Hero encourages cooperative efforts between the US and Canada to reduce Lake flooding.

### Stream Corridor

Another type of flooding that occurs in rivers and streams is fluvial erosion. Fluvial erosion occurs when fast lateral and vertical movement of streams and rivers cause erosion of the bank. Historic attempts to control stream flows, such as channelization, can increase risks for fluvial erosion. For smaller streams with a drainage area of between .5-2 square miles, the Vermont Agency of Natural Resources recommends limiting development in a stream corridor of at least 50 feet from the top of the bank to protect human life and infrastructure. South Hero has adopted river corridor standards that limit development near its streams.

### Climate Resilience

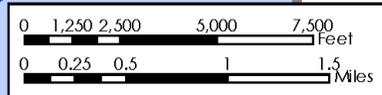
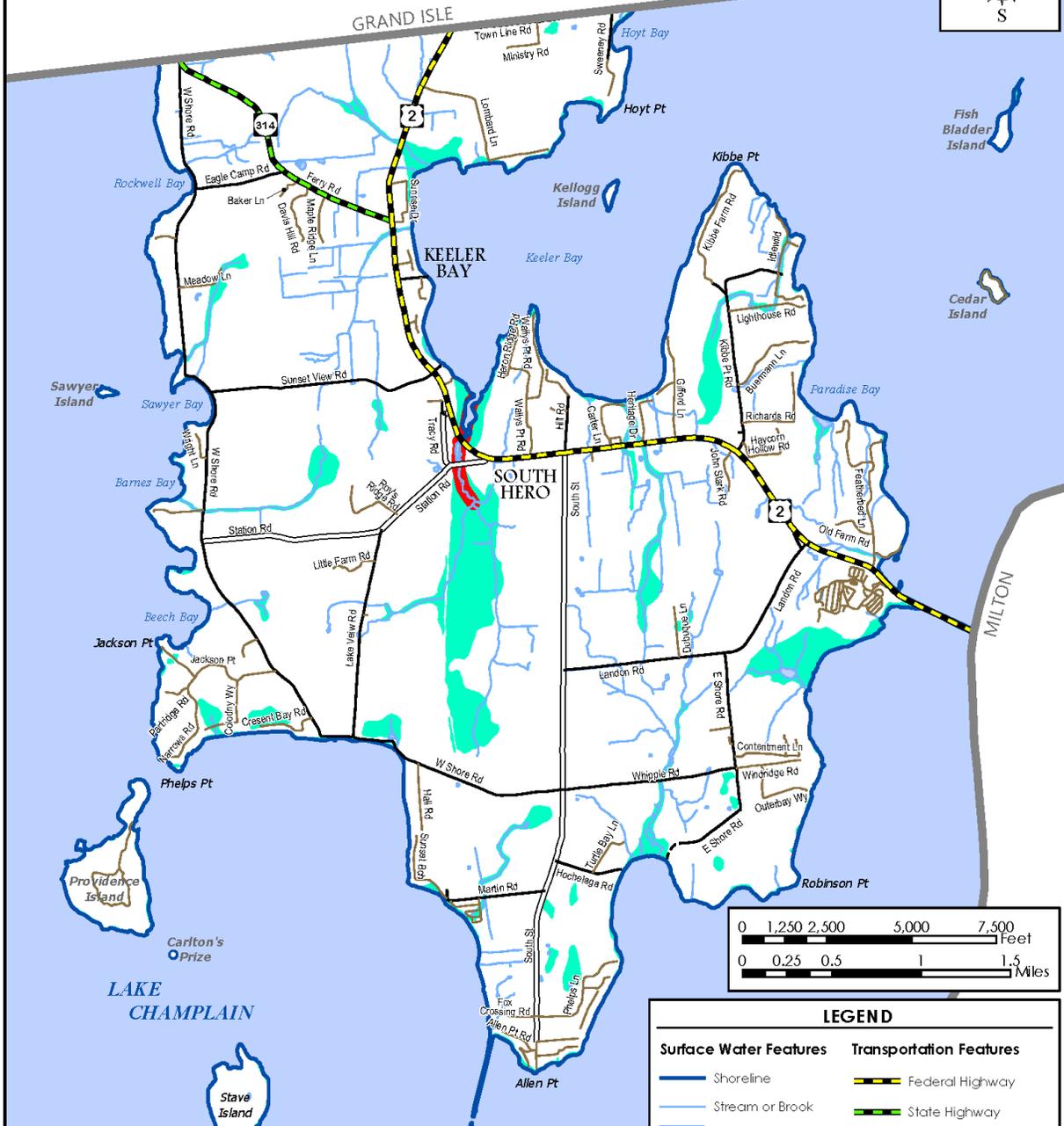
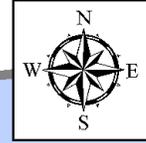
In Vermont as a whole, climate change is expected to bring increased precipitation, warmer average temperatures, and increases in the strength and frequency of storms (Vermont Climate Action Plan). In the Lake Champlain Basin, rising temperatures are expected to result in less ice cover and an increase in average annual precipitation and increased storm intensity. In the shorter term, increased heavy storms will likely increase flooding. In the long term, by 2100 the Lake’s average level may rise as much as 1-2 feet (Lake Champlain Basin Program). Statewide insured losses are expected to increase 2-4% by 2050 as a result of climate change (Vermont Climate Action Plan-  
<https://climatechange.vermont.gov/about>).

The Town will need to plan for and adapt to these effects in order to reduce impacts to residents, infrastructure and property. South Hero is uniquely vulnerable to climate impacts because of its location on Lake Champlain and the high number of shoreland properties. Town should consider developing a climate resilience plan to identify climate vulnerabilities. Many climate vulnerabilities will need to be addressed at the regional or state level, such as the resiliency of the electric grid against severe storm events.

### Equity in Flood & Climate Resilience

Climate and flood resilience planning efforts must focus first on those most impacted by climate change and who have the least social and economic resources to adapt to its effects. Studies have shown that groups such as low-income residents, senior residents and residents of color are among those more likely to be impacted by climate change (Vermont Climate Action Plan). For instance, while the homes of individuals at all income levels may be located in the floodplain, those with lower incomes are less likely to be able to afford mitigation efforts. Furthermore, frontline communities should be included in climate resilience planning to ensure that proposed solutions meet the needs of those most impacted.

# FLOOD & RIVER CORRIDOR Town of South Hero



LEGEND	
<b>Surface Water Features</b>	<b>Transportation Features</b>
Shoreline	Federal Highway
Stream or Brook	State Highway
Lake or Pond	Class 2 Town Highway
100 Year Flood Zone	Class 3 Town Highway
River Corridor	Class 4 Town Highway
<b>Other Feature</b>	Private Road
Town Boundary	

**Data Sources:** All map features derived from VGIS digital coverages. Vermont Coordinate System Transverse Mercator, NAD 83.  
**For planning purposes only.**  
North arrow on map refers to Grid North.


 Vermont Coordinate System  
 Transverse Mercator, NAD 83.  
 For planning purposes only.  
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ZGIS Project by County/Grand Isle/South Hero/  
 Town Plan 2023/Flood/River Corridor.mxd

# Energy

## Goals & Objectives

1. Plan for increased electric demand with the support of local electric utilities and Efficiency Vermont.
2. Reduce annual fuel needs and fuel costs for heating structures, to foster the transition from non-renewable fuel sources to renewable fuel sources, and to maximize the weatherization of residential households and commercial establishments.
3. Hold vehicle miles traveled per capita to 2011 levels through reducing the amount of single occupancy vehicle (SOV) commute trips and developing public transit ridership.
4. Focus growth within and adjacent to the villages.
5. South Hero supports energy conservation efforts and the efficient use of energy across all sectors.
6. South Hero supports the reduction of transportation energy demand, reduction of single-occupancy vehicle use, and the transition to renewable and lower-emission energy sources for transportation.
7. South Hero supports patterns and densities of concentrated development that result in the conservation of energy. This includes support of public transit connections from South Hero to other parts of the region.
8. South Hero supports the development and siting of renewable electricity generation resources in the Town that are in conformance with the goals, strategies, and mapping outlined in this plan. Development of electricity generation in identified preferred locations shall be favored over the development of other sites.
9. South Hero supports the conversion of fossil fuel heating to advanced wood heating systems or electric heat pumps.
10. Support local farms and the local food system.

South Hero supports efforts to transition to renewable energy. The majority of energy use in South Hero is used for heating & transportation. Around 4% of South Hero residents use energy-efficient heat pumps, while 37 residents have registered electric vehicles.

There is around 4 MW of renewable energy generation resources in South Hero, the majority of which are solar facilities. Supporting increased renewable energy and reduction in greenhouse gases will require a more significant shift towards energy efficient technologies such as heat pumps, weatherization and electric vehicles. A full enhanced energy plan is included as an appendix to this plan.

**Chart 8.1 Total Energy Use (in billion BTUs)**

<b>Thermal Energy Use</b>	117
<b>Electrical Energy Use</b>	39.7
<b>Transportation Energy Use</b>	67

# Implementation Program

The Town Plan includes a number of implementation strategies to implement the goals & objectives of the plan. The table below outlines the key plan implementation strategies, recommended timeline and who is responsible for the action. The timing for each action is either ongoing, long (5+ years), medium (2-3 years) or short (less than 2 years).

Implementation Strategy	Specific Implementation Action	Timing	Responsibility
<b>ENGAGE</b> (Introduction)	Encourage citizen participation at all levels of the planning process.	Ongoing	Planning Commission
<b>ENGAGE</b> (Introduction)	Continue working with Town residents to find ways to turn their vision for the future of South Hero into reality.	Ongoing	Planning Commission
<b>ENGAGE</b> (Facilities and Services)	Encourage the involvement of community members in community affairs and Town government in order to increase the number of individuals represented while addressing Town issues. This will provide a broader perspective of ideas to consider when making important decisions.	Ongoing	Planning Commission
<b>ENGAGE</b> (Facilities and Services)	Encourage volunteers to participate in town government.	Ongoing	Selectboard
<b>COLLABORATE AND COORDINATE</b> (Introduction)	Collaborate with other municipalities and regional organizations to address important regional issues, such as improving water quality in Lake Champlain.	Ongoing	Planning Commission & Conservation Commission
<b>COLLABORATE AND COORDINATE</b> (Introduction)	Consider the impact of land use decisions on adjacent municipalities.	Ongoing	Planning Commission
<b>COLLABORATE AND COORDINATE</b> (Facilities and Services)	Explore ways to save on supplies, equipment and Town services (such as plowing) through cooperative efforts with other towns.	Ongoing	Selectboard, Town Highway Dept.
<b>COLLABORATE and Coordinate</b> (Facilities and Services)	Ensure the Town continues to be represented in and participate in local and regional planning organizations such as the Northwest Regional Planning Commission, Lake Champlain Islands Economic Development Corporation (LCIEDC) Northwest Solid Waste District, etc.	Ongoing	Planning Commission & Selectboard
<b>COLLABORATE AND COORDINATE</b> (Transportation and Complete Streets)	Support and participate with the LCIEDC’s S.H.O.R.E project to improve bicycle safety, share the road etiquette and other opportunities to create optimal experiences for cyclists from the Island Line Bike Ferry and local residents.	Short	Recreation Commission & Planning Commission
<b>COLLABORATE AND COORDINATE</b> (Transportation and Complete Streets)	Communicate and coordinate with local residents on planned road improvements.	Medium	Highway Dept.
<b>COLLABORATE AND COORDINATE</b> (Transportation and Complete Streets)	Support regional cooperation on trails development, interconnectivity of trails and connectivity of trails with destinations in order to provide non-motorized means of travel.	Medium	Recreation Commission

# Implementation Program

<b>COLLABORATE AND COORDINATE</b> (Transportation and Complete Streets)	Coordinate with VTrans on pedestrian accessibility and the need for reduced speeds and a crosswalk near the former Apple Island Resort property.	Short	Planning Commission, Zoning Administrator
<b>COLLABORATE AND COORDINATE</b> (Natural Resources and Land Use)	Support and participate in Federal, State and local efforts to improve water quality in Lake Champlain.	Ongoing	Planning Commission
<b>COLLABORATE AND COORDINATE</b> (Natural Resources and Land Use)	Support State of Vermont efforts to minimize pollution to the Lake and groundwater.	Ongoing	All Town Departments
<b>COLLABORATE AND COORDINATE</b> (Natural Resources and Land Use)	Work cooperatively with the newly created Conservation Commission where appropriate.	Ongoing	Planning Commission & Conservation Commission
<b>COLLABORATE AND COORDINATE</b> (Transportation and Complete Streets)	Support the construction of an additional park and ride lot near Exit 17.	Ongoing	Planning Commission & Selectboard
<b>COLLABORATE AND COORDINATE</b> (Transportation and Complete Streets)	Support and coordinate with CIDER on providing transportation for elderly, disabled or other nondrivers.	Ongoing	CIDER
<b>COLLABORATE AND COORDINATE</b> (Climate and Flood Resilience)	Continue to be a member of the National Flood Insurance Program.	Ongoing	Selectboard
<b>COLLABORATE AND COORDINATE</b> (Climate and Flood Resilience)	The Planning Commission, Selectboard, and Town emergency services personnel shall work with State and Federal agencies to ensure that connection to mainland Vermont via U.S. Route 2 is maintained during a flood event.	Ongoing	All Town Departments
<b>COLLABORATE AND COORDINATE</b> (Climate and Flood Resilience)	The Town Plan endorses the recommendations of the LHMP.	Ongoing	All Town Departments
<b>REGULATE</b> (Natural Resources and Land Use)	Restructure the Town's Development Regulations to define and include the Proposed Land Use Areas of Village Core and Village Neighborhood.	Short	Planning Commission
<b>REGULATE</b> (Natural Resources and Land Use)	Encourage agricultural easements in subdivisions and promote Planned Unit Developments (PUDs) where soils are suitable.	Medium	Zoning Administrator
<b>REGULATE</b> (Natural Resources and Land Use)	Require that "building envelopes" be defined for house sites in subdivisions to ensure coexistence with wetlands, natural areas, and farmland.	Short	Zoning Administrator & Development Review Board
<b>REGULATE</b> (Natural Resources and Land Use)	Reconsider the lot size limitations in zoning regulations.	Short	Planning Commission

<b>REGULATE</b> (Natural Resources and Land Use)	In the Town Development Regulations, provisions shall ensure that development compatibly coexists with the following special environmental areas: a. Natural areas, especially significant fossil sites b. Critical habitat on the outer islands c. Public access areas on the lake shore d. Lake Champlain shoreline i.e., wetlands, including the “Crick” and the area of Round Pond e. Scenic views f. Flood plain areas	Short	Planning Commission
<b>REGULATE</b> (Natural Resources and Land Use)	Ensure that the conversion of seasonal homes to year-round use meets local zoning standards and results in safe and adequate sewage disposal, water supply, and road access.	Medium	Zoning Administrator
<b>REGULATE</b> (Natural Resources and Land Use)	To protect the Lake Champlain shoreline and recognize its diverse and unique character, the Town Planning Commission and Conservation Commission shall keep apprised of lakeshore land use and identify shoreland areas that may be treated differently in the Town regulations.	Short	Planning Commission & Zoning Administrator
<b>REGULATE</b> (Natural Resources and Land Use)	Town zoning and subdivision regulations shall be strictly and consistently enforced. All Town officials should be well-informed about these regulations.	Ongoing	Zoning Administrator
<b>REGULATE</b> (Housing)	Implement zoning regulations in the town’s village districts that allow for concentrated residential development at higher densities than allowed in other zoning districts.	Short	Planning Commission
<b>REGULATE</b> (Housing)	Support efforts that incentivize the development of accessory dwelling units for their ability to provide affordable housing options.	Short	Planning Commission
<b>REGULATE</b> (Transportation and Complete Streets)	When conversions of seasonal homes to year-round occupancy are proposed, ensure that adequate all-season access is provided for the occupants as well as for emergency vehicles as part of the zoning approval process for conversions.	Short	Planning Commission & Development Review Board
<b>REGULATE</b> (Natural Resources and Land Use)	Ensure the Town’s Development Regulations are complimentary to regional and state water quality improvement efforts.	Short	Planning Commission & Conservation Commission
<b>REGULATE</b> (Natural Resources and Land Use)	The Planning Commission and Conservation Commission should determine how best to regulate these areas and monitor the effectiveness and enforcement of town regulations.	Medium	Planning Commission & Conservation Commission
<b>REGULATE</b> (Climate and Flood Resilience)	The Planning Commission and Zoning Administrator shall ensure that the Land Development Regulations meet all NFIP minimum requirements. The Planning Commission shall ensure that the Land Development Regulations continue to protect floodplains, prevent damage to property, and mitigate risk to human lives.	Short	Planning Commission & Zoning Administrator
<b>REGULATE</b> (Climate and Flood Resilience)	The Planning Commission and Zoning Administrator should work with the Vermont Agency of Natural Resources to investigate future adoption of River Corridor or Fluvial Erosion maps and regulations.	Short	Planning Commission & Zoning Administrator

<b>REGULATE</b> (Local Economy)	Home businesses should be encouraged, provided such operations do not interfere with the residential and agricultural character of the surrounding area.	Ongoing	Zoning Administrator
<b>REGULATE</b> (Local Economy)	Commercial development should be limited to where there is adequate sewage disposal capability, water supply, and road access and where the development will not adversely impact gateways to the village areas or contribute to strip development.	Medium	Planning Commission, Development Review Board, and Zoning Administrator
<b>EVALUATE/STUDY/PLAN</b> (Natural Resources and Land Use)	Evaluate making provision for a Town Center with adequate capacity to host the Town Offices, recreation fields and other functions and facilities as the need develops. Commercial enterprises, in a public/private partnership or just private, should also be included in the evaluation.	Medium	Selectboard, Planning Commission & Development Review Board
<b>EVALUATE/STUDY/PLAN</b> (Natural Resources and Land Use)	The Town Planning Commission and Conservation Commission should stay up to date on State and federal regulations concerning wildlife, wetlands, natural areas, and water quality.	Ongoing	Planning Commission & Conservation Commission
<b>EVALUATE/STUDY/PLAN</b> (Facilities and Services)	Explore innovative ways to finance and provide town services to reduce property tax burdens.	Ongoing	Town Administrator & Selectboard
<b>EVALUATE/STUDY/PLAN</b> (Facilities and Services)	Investigate adopting impact fees, which would help finance the cost of specific town services.	Medium	Planning Commission & Town Administrator
<b>EVALUATE/STUDY/PLAN</b> (Facilities and Services)	Explore ways to increase the tax base without adding significant burdens on Town services. Among the ways to do this are to encourage light business growth in central locations, the use of vacant private and Town buildings for new uses, and encourage home-based businesses.	Ongoing	All Town Departments
<b>EVALUATE/STUDY/PLAN</b> (Transportation and Complete Streets)	Complete a Streetscape Scoping Study to improve pedestrian accessibility, including sidewalks, traffic calming elements and other streetscape amenities. Coordinate with LCIEDC's S.H.O.R.E. project.	Short	Planning Commission, Selectboard, Zoning Administrator & Town Administrator
<b>EVALUATE/STUDY/PLAN</b> (Climate and Flood Resilience)	The Planning Commission and Selectboard shall draft and adopt a Local Hazard Mitigation Plan (LHMP) for South Hero that addresses mitigating risks posed by flooding and other disasters.	Short	Planning Commission, Selectboard, Town Administrator
<b>EVALUATE/STUDY/PLAN</b> (Climate and Flood Resilience)	The Selectboard shall annually adopt a Local Emergency Operations Plan (LEOP).	Short	Selectboard & Town Administrator
<b>EVALUATE/STUDY/PLAN</b> (Local Economy)	Continue to study and support solutions to the lack of water and wastewater capacity in South Hero.	Medium	Planning Commission, Selectboard & Town Administrator
<b>EDUCATE AND INFORM</b> (Natural Resources and Land Use)	Support, encourage and inform the public about innovative solutions for safe sewage disposal.	Short	Planning Commission &

# Implementation Program

			Zoning Administrator
<b>EDUCATE AND INFORM</b> (Facilities and Services)	Promote town plan objectives in the adoption of tax policies and planning for public facilities and services.	Ongoing	Planning Commission, Selectboard & Town Administrator
<b>EDUCATE AND INFORM</b> (Housing)	Support, and share information about, programs and resources that help to lower cost of home occupancy and assist in the preservation and maintenance of existing housing units, such as energy conservation, weatherization, and utility assistance.	Ongoing	Planning Commission & Zoning Administrator
<b>EDUCATE AND INFORM</b> (Local Economy)	Promote incentives to maintain farms and preserve agricultural land, through tax policies, regulations, and the purchase of development rights and conservation easements.	Ongoing	All Town Departments
<b>FACILITATE</b> (Facilities and Services)	Encourage public/private partnerships to improve Town services whenever possible.	Ongoing	Selectboard & Town Administrator
<b>FACILITATE</b> (Facilities and Services)	Encourage the availability of safe and affordable child care.	Medium	Selectboard
<b>FACILITATE</b> (Facilities and Services)	Support community events and activities such as farmers markets and weekend in the Islands	Short	Selectboard, Planning Commission & South Hero Land Trust
<b>FACILITATE</b> (Facilities and Services)	Support the expansion of the Fire District #4 private water district and/or setting up other water districts in concentrated areas of the Town.	Medium	Selectboard, Planning Commission & Fire District #4
<b>FACILITATE</b> (Facilities and Services)	Support efforts to allow properly treated and filtered water from Lake Champlain to be used as potable water for domestic and business use.	Medium	Planning Commission, Selectboard
<b>FACILITATE</b> (Housing)	Support efforts to provide adequate infrastructure to support concentrated development in village areas, including municipal wastewater, bicycle and pedestrian improvements and complete streets.	Medium	Selectboard, Planning Commission & Town Administrator
<b>FACILITATE</b> (Facilities and Services)	Support efforts for education funding reform to address the property tax burdens imposed by Acts 60 and 68.	Medium	Town Administrator
<b>FACILITATE</b> (Natural Resources and Land Use)	Support purchase and/or donation of development rights to maintain agriculture and important natural areas outside of the village areas.	Ongoing	Planning Commission, Development Review Board, Zoning, Town Administrator
<b>FACILITATE</b> (Natural Resources and Land Use)	Support the development of retail, hospitality and service-based businesses best suited to serve the needs of residents, seasonal residents and the tourist population.	Ongoing	Planning Commission, Development Review Board, Zoning, Town Administrator
<b>FACILITATE</b>	The Town shall support, seek out and apply for State, federal and private grants and shall support donations,	Ongoing	Town Administrator

# Implementation Program

(Natural Resources and Land Use)	leases and other private voluntary ways to protect natural areas, wetlands, scenic areas, recreation areas, and wildlife habitat.		
<b>FACILITATE</b> (Facilities and Services)	Support volunteers who are interested in creating and maintaining town trails and coordinate with regional trail projects.	Ongoing	Recreation Commission, South Hero Land Trust
<b>FACILITATE</b> (Transportation and Complete Streets)	Support Safe Routes to School and other walking projects.	Short	Planning Commission, Recreation Commission
<b>FACILITATE</b> (Transportation and Complete Streets)	Support public and private policies, programs or other efforts that promote alternatives to single occupancy vehicle travel such as public transit improvements, car-sharing, telecommuting, flexible work schedules and school bus usage.	Short	Town Administrator
<b>DEVELOP/CONSTRUCT</b> (Facilities and Services)	Redevelop the Meeting House as a location for municipal and community events.	Medium	Selectboard, Town Administrator
<b>DEVELOP/CONSTRUCT</b> (Transportation and Complete Streets)	Implement necessary improvements for compliance with the Municipal Roads General Permit.	Short	Selectboard, Highway Department
<b>DEVELOP/CONSTRUCT</b> (Transportation and Complete Streets)	Identify and upgrade undersized culverts to prevent washouts. Use best management practices for managing runoff during road construction or reconstruction.		Selectboard, Highway Department

# Appendix 1: Scenic Resources

## #1 Scenic Views

- Sunset View Road overlooking the ridge to the south/west and west with the lake and Adirondacks in the background.
- At the intersection of Landon Road and East Shore Road there is a view across Round Pond into the bay with the Green Mountains in the background. The view is enhanced by the farm fields which surround the intersection.
- Along causeway traveling in both directions on Route 2: panoramic view.

## #2. Scenic Views

- Route 2 from Kibbe Point Road east to the town line on the Sand Bar; offers views of the Green Mountains to the east with the lake in the foreground.
- Route 314 as it tops the hill approximately 300 yards from the town line. This slope offers a view of the lake with Plattsburgh and the foothills of the Adirondacks in the background.
- West Shore Road at junction with Eagle Camp Road looking west over Rockwell Bay. The lake is in the foreground with Plattsburgh in the background.
- West Shore Road overlooking Sawyer Bay with the lake in the foreground and Adirondacks in the background. Also, scenic looking east into the fields surrounding the bay.
- White's Beach on West Shore Road viewing the lake to the west with the Adirondacks in the background. Sunsets and beautiful island views of Providence Island, Carleton's Prize and Stave Island.
- South Street from the top of the hill headed south after Whipple Road and for a distance of approximately 100 yards. Views of the lake, greater Malletts Bay, the Adirondacks and the Green Mountains.
- The railroad bed from the point where it emerges into the lake at the south end of the island and proceeds into the lake, i.e. The Fill. Views are spectacular in all directions.
- Hochelaga Road from the top of the hill as you turn off of South Street to the turn off for Camp Hochelaga. Views of the lake and the Green Mountains.
- Town Line Road looking east and south from the top of the hill at Sweeney's Farm. Views are of the lake, Keeler Bay and the Green Mountains.

## 3. Scenic Views

- South Street has views to the west from Folsom School to the Kinney's Farm. Some lake views but mostly the Adirondacks.
- The intersection of Lakeview Road and Station Road has views to the east and south with fields in the foreground and the Green Mountains in the background.

## #4. Scenic Views

- All of Lakeview Road may be considered scenic from views of the farm fields and the "Crick" to the left with the ridge line running along the right and finally the lake and the Adirondacks to the west.
- All lake public access areas afford views of the lake and surrounding areas.
- From Kibbe Point Road at the first sharp curve to the right there are views of the lake and the Green Mountains to the east with farm fields all around the area.

# Appendix II: Enhanced Energy Plan

## Goals & Objectives

1. Plan for increased electric demand with the support of local electric utilities and Efficiency Vermont.
2. Reduce annual fuel needs and fuel costs for heating structures, to foster the transition from non-renewable fuel sources to renewable fuel sources, and to maximize the weatherization of residential households and commercial establishments.
3. Hold vehicle miles traveled per capita to 2011 levels through reducing the amount of single occupancy vehicle (SOV) commute trips and developing public transit ridership.
4. Focus growth within and adjacent to the villages.
5. South Hero supports energy conservation efforts and the efficient use of energy across all sectors.
6. South Hero supports the reduction of transportation energy demand, reduction of single-occupancy vehicle use, and the transition to renewable and lower-emission energy sources for transportation.
7. South Hero supports patterns and densities of concentrated development that result in the conservation of energy. This includes support of public transit connections from South Hero to other parts of the region.
8. South Hero supports the development and siting of renewable electricity generation resources in the Town that are in conformance with the goals, strategies, and mapping outlined in this plan. Development of electricity generation in identified preferred locations shall be favored over the development of other sites.
9. South Hero supports the conversion of fossil fuel heating to advanced wood heating systems or electric heat pumps.
10. Support local farms and the local food system.

## Strategies

1. Coordinate annually with Efficiency Vermont and state low-income weatherization programs to encourage residents to participate in weatherization programs available to South Hero residents.
2. Promote the use of the residential and commercial building energy standards by distributing code information to permit applicants.
3. Determine if there is a need to create a municipal Energy Committee, appoint an Energy Coordinator, or provide greater funding and support to existing municipal boards to coordinate energy-related planning in South Hero and to educate residents about the goals of this plan.
4. Investigate a revision to the zoning bylaw that would incentivize compliance with the state's stretch code, or similarly high environmental standard, through the issuance of a bonus density.
5. Review the 2011 energy audit for any needed updates and make recommendations to the Selectboard for the municipal capital budget.
6. Promote and provide information about the GoVermont website (<https://www.connectingcommuters.org/>) which provides information citizens about ride share, vanpool, and park-and-ride options.
7. Identify areas that may be appropriate for a wood-fired district heating facility.
8. Study the expansion of public transit routes in South Hero.
9. Plan for and install electric vehicle charging infrastructure on municipal property.
10. Review municipal road standards to ensure that they reflect the "complete streets" principles as outlined by Vermont Agency of Transportation and Vermont Department of Health ([http://www.healthvermont.gov/sites/default/files/documents/2016/11/HPDP\\_PA&N%20Complete\\_streets\\_guide\\_for\\_VT\\_communities.pdf](http://www.healthvermont.gov/sites/default/files/documents/2016/11/HPDP_PA&N%20Complete_streets_guide_for_VT_communities.pdf)).
11. Review local policies and ordinances to limit water and sewer services to those areas of town where additional development will not contribute to sprawl.
12. Investigate the installation of a municipal solar and/or wind net-metering facilities to off-set municipal electric use.
13. Investigate installation of a community-based renewable energy project.

14. Encourage firefighters to have training in fighting fires on structures that have solar installed and on battery storage facilities & vehicles. .
15. Develop and adopt a municipal solar screening ordinance.
16. Investigate the need for an additional municipal park and ride facility.

The intent of this section is to meet the municipal determination standards for enhanced energy planning enabled in 24 V.S.A. 4352. The purpose of enhanced energy planning is to further local, regional, and state energy goals, including the goal of having 90% of energy used in Vermont come from renewable sources by 2050 (90 x 50 goal), and the following:

- A. *Vermont's greenhouse gas reduction goals under 10 V.S.A. § 578(a);*
- B. *Vermont's 25 by 25 goal for renewable energy under 10 V.S.A. § 580;*
- C. *Vermont's building efficiency goals under 10 V.S.A. § 581;*
- D. *State energy policy under 30 V.S.A. § 202a and the recommendations for regional and municipal energy planning pertaining to the efficient use of energy and the siting and development of renewable energy resources contained in the State energy plans adopted pursuant to 30 V.S.A. §§ 202 and 202b (State energy plans); and*
- E. *The distributed renewable generation and energy transformation categories of resources to meet the requirements of the Renewable Energy Standard under 30 V.S.A. §§ 8004 and 8005.*

A positive determination of compliance with the requirements of enhanced energy planning, as provided by the Regional Planning Commission, will enable South Hero to achieve “substantial deference” instead of “due consideration” in Certificate of Public Good (CPG) proceedings for energy generation facilities (ex. wind facilities, solar facilities, hydro facilities, etc.) under Criteria (b)(1)-Orderly Development. In short, this means that South Hero will have a greater “say” in CPG proceedings before the Vermont Public Utility Commission about where these facilities should or should not be located in the community.

To receive a positive determination of energy compliance, an enhanced energy plan must be duly adopted, regionally approved, and contain the following information:

- A. *An analysis of current energy resources, needs, scarcities, costs, and problems.*
- B. *Targets for future energy use and generation.*
- C. *“Pathways,” or implementation actions, to help the municipality achieve the established targets.*
- D. *Mapping to help guide the conversation about the siting of renewables.*

### Energy Resources, Needs, Scarcities, Costs and Problems

The following subsection reviews each sector of energy use (thermal, transportation, electricity) and electricity generation in South Hero. Several different units of measurement are used in this section. Please refer to Table A.13 for more information about unit conversions.

*Thermal Energy.* Table A.1 shows an estimate of current residential thermal energy demand in South Hero, based on data from the American Community Survey (ACS 2016-2021). The data shows that 43% of households in South Hero depend on fuel oil as their primary source for home heating. This is followed by propane (29.1%) and wood (16.8%). Wood includes both cord wood and wood pellets. The nearest natural gas pipeline is located in Milton and is not likely to be extended to South Hero in the future.

Table A.1 - Current South Hero Residential Thermal Energy Use				
Fuel Source	South Hero Households (ACS 2016-2021)	South Hero % of Households	South Hero - Households Square Footage Heated	Municipal Thermal Energy Use in British Thermal Units (BTUs) BTU (in Billions)
Natural Gas	3	0.5%	6,480	0
Propane	161	29.1%	33,2080	20
Electricity	22	4.0%	33,800	2
Fuel Oil	238	43.0%	469,000	28
Coal	0	0.0%	0	0
Wood	93	16.8%	193,040	12
Solar	2	0.4%	4,320	0
Other	31	5.6%	66,960	4
No Fuel	3	0.5%	6,480	0
<b>Total</b>	<b>553</b>	<b>100.0%</b>	<b>1,112,160</b>	<b>67</b>

The ACS data showing households in South Hero using natural gas for heating is an error. Data from Efficiency Vermont shows that South Hero residents are adopting heat pumps at a higher than average rate, despite consisting of only 3% of the population of Grand Isle and Franklin Counties nearly 7% of reported heat pump installations in the region occurred in South Hero.

Estimates for commercial and industrial thermal energy use are more difficult to calculate due to the lack of accurate information available. Table A.2 provides an estimate of total commercial energy use (thermal and electricity). The estimate is based on data from the Vermont Department of Labor (VT DOL) and the Vermont Department of Public Service (VT DPS). According to NRPC, it is assumed that the majority of this energy use, 50 billion BTUs per year, is used as thermal energy for commercial uses.

*Electricity Use.* Table A.3 shows 2021 electricity use in South Hero per date available from Efficiency Vermont.

**Table A.2- Current South Hero Commercial Energy Use**

Commercial Establishments in South Hero (VT DOL)	73
Estimated Thermal Energy BTUs per Commercial Establishment/year (in Billions) (VT DPS)	0.725
Estimated Thermal Energy BTUs by Commercial Establishments in South Hero/year (in Billions)	50

South Hero’s total electricity use has increased since 2015 from 10.5 million kWh in 2015 to about 11.6 million kWh per year in 2021. According to Efficiency Vermont, the average residential usage per household has increased from 6,450 kWh per year to 7,309 kWh per year between 2015 and 2021. During the same period, overall commercial and industrial electricity usage decreased from 3.8 million kWh to 3.5 million kWh.

South Hero’s average residential usage in 2021 was about 300 kWh lower than the average residential kWh use in the region (but this may be due in part to the high number of seasonal homes in South Hero).

Table A.3 - Current South Hero Electricity Use		
Use Sector	Current Electricity Use in South Hero – 2021 (Efficiency Vermont) (kWh)	Current Electricity Use (in Billion BTUs)
Residential	8,090,868	27.6
Commercial and Industrial	3,532,267	12.1
<b>Total</b>	<b>11,623,135</b>	<b>39.7</b>

Increases in electrical energy usage may be partially related to increases in use of electricity for heating and transportation, as data from Efficiency Vermont shows that more South Hero residents are adopting electric vehicles and heat pumps.

South Hero is served by one electric utility: Vermont Electric Cooperative.

*Transportation.* Table A.4 contains an estimate of transportation energy use in South Hero. NRPC estimates that South Hero residents drive personal vehicles approximately 12.925 million miles per year and spend about \$2 million on transportation fuel expenses per year. This calculation does not include expenses for commercially owned and operated vehicles.

As of 2021, there were 37 electric and hybrid vehicle registrations in South Hero according to the Vermont Department of Motor Vehicles.

*Electricity Generation.* There is currently .4 MW of electricity generation capacity from renewable generation facilities located in South Hero. This capacity results in approximately 812.39 MWh of electricity generation per year. All of this generation is from net-metering solar facilities located in South Hero. The amount of electricity generation in South Hero is roughly equal to the annual electricity use of about 121 households in Vermont based on information available from the U.S. Energy Information Administration (6696 kWh per VT household per year).

Table A.5 organizes information about existing generation in South Hero by type of facility. Map A.4 shows the location of all electricity generators in South Hero with a capacity greater than 15 kW. A full list of electricity generators in South Hero can be found at the end of this section (Table A.12).

South Hero has good access to electric transmission and three-phase distribution lines. These types of lines are used to transmit large quantities of electricity and are needed to serve large industrial users and commercial centers. The ease of access to this type of infrastructure in South Hero may make development of renewable energy facilities easier and more cost-effective than in other surrounding communities with more existing grid infrastructure.

<b>Transportation Data</b>	<b>Municipal Data</b>
Total # of Passenger Vehicles (ACS 2016-2021)	1,098
Average Miles per Vehicle (VTrans- 2019)	11,772
Total Miles Traveled	12,925,656
Realized MPG (2013 - VTrans 2015 Energy Profile)	23.4
<b>Total Gallons Use per Year</b>	<b>552,378</b>
<b>Transportation BTUs (Billion)</b>	<b>67</b>
Average Cost per Gallon of Gasoline in 2021 (NRPC)	3.50
<b>Gasoline Cost per Year</b>	<b>1,933,324</b>

Map A.2 shows the electricity transmission and three-phase distribution infrastructure in South Hero. The map shows a three-phase distribution line in the town along VT Route 314, US Route 2 and South Street. There is also a transmission line that carries electric from New York State to Milton, VT via South Hero. Access to renewable generation resources, such as solar and wind, will be addressed below in the mapping section.

<b>Generation Type</b>	<b>MW</b>	<b>MWh</b>
Solar	0.65	797.17
Wind	0.01	15.33
Hydro	0.00	0.00
Biomass	0.00	0.00
Other	0.00	0.00
<b>Total Existing Generation</b>	<b>0.40</b>	<b>812.49</b>

*Biodigesters.* While not included in the targets for energy use and generation, another potential source of energy in South Hero are anaerobic biodigesters. Biodigesters capture methane from manure or food waste and convert it into a renewable gas which either can be used in natural gas pipelines or transformed into electrical energy on-site through use of a generator. Anaerobic biodigesters can have beneficial climate impacts as they reduce methane emissions and can offset use of traditional natural gas. Biodigesters can also provide an important source of income for farmers. A major barrier to the expansion of biodigesters is that many small farms do not generate enough manure to make the biodigester profitable.

*Equity and Affordability.* Reaching South Hero’s energy goals will bring both environmental and economic costs and benefits. The equity issues related to who will bear those costs is of continuing concern to South Hero. A just energy transition requires that all residents have equitable access to the benefits and costs of the energy transition. The efficiency of green technologies offers savings for consumers as seen with electric vehicles, electric heat pumps, newer appliances, residential solar, etc. These technologies often require upfront investment, making them more difficult to access for residents with lower income. Low-income workers in Vermont also tend to work in industries that are more susceptible to the effects of climate change such as tourism and agriculture and are often disproportionately impacted by natural disasters like flooding. Equity for all residents will be considered in every decision about energy.

## Targets for Use and Generation

The second required element of an enhanced energy plan is creation of targets for future energy use.

Northwest Regional Planning Commission worked with the Vermont Energy Investment Corporation (VEIC) and the Vermont Department of Public Service in 2016 to develop regional targets for future energy use and renewable electricity generation to meet the State of Vermont’s 90 x 50 goal. The targets represent only one scenario that would meet this goal. There may be many different ways that would also enable Vermont to achieve the 90 x 50 goal. For more information about the regional targets, please see the Northwest Regional Energy Plan ([www.nrpcvt.com](http://www.nrpcvt.com)).

Regional targets for energy use and renewable electricity generation were disaggregated to create municipal targets. These municipal targets were also designed to ensure compliance with the Department of Public Service’s Municipal Determination Standards. Tables A.6, A.7 and A.8 show the targets for future energy use for South Hero by sector (totals are cumulative).

One thermal target for South Hero in 2050 is to have 85.3% of structures be heated by renewable energy sources. Much of this transition is likely to come from conversion to electric heat pumps as the primary heating source for single family homes as the technology becomes more readily available and affordable. Regionally, the target also relies on wood heating being a continued source of residential heating. However, South Hero has a low target for new efficient wood heat systems (5 by 2050). This is due primarily to the high proportion of existing households in South Hero that already use wood heating systems. Although there is only a low target for converting other types of heating to efficient wood heating, South Hero strongly encourages residents’ conversion of existing wood heating systems to more advanced wood heating systems.

**Table A.6 - Thermal Targets**

<b>Thermal Targets</b>	<b>2025</b>	<b>2035</b>	<b>2050</b>
Percent of Total Heating Energy From Renewable Sources - Heating (BTUs)	44.5%	57.6%	85.3%
New Efficient Wood Heat Systems (in units)	0	0	5
New Heat Pumps (in units)	84	191	358
Percentage of municipal households to be weatherized	5%	16%	78%
Percentage of commercial establishments to be weatherized	25%	25%	73%

<b>Table A.7 - Transportation Targets</b>			
<b>Transportation Targets</b>	<b>2025</b>	<b>2035</b>	<b>2050</b>
Percent of Total Transportation Energy from Renewable Sources - Transportation (BTUs)	11.2%	34.0%	91.2%
Electric Vehicles	125	937	2229
Biodiesel Vehicles	285	569	1100

Newer wood heating systems are more efficient and have less greenhouse gas emissions than older wood heating systems. Table A.6 also includes targets for the weatherization of residential households and commercial structures (78% and 73% respectively in 2050).

The transportation energy targets for South Hero are similarly ambitious. By 2050, almost 91.2% of transportation energy will need to come from renewable sources in order to meet the 90 x 50 goal. This will primarily be done through the conversion light-duty passenger vehicles from fossil fuels energy sources to electric energy.

However, conversion of heavy-duty vehicles from diesel to biodiesel sources. Biodiesel technology and infrastructure will certainly need to advance tremendously in coming years to meet this ambitious target.

Targets for electricity use are complex to interpret. Electricity use in South Hero is targeted to double by 2050 (Table A.8). This increase in use will likely be driven by conversions to electric heat pumps and electric vehicles. These consumer changes will cause electricity use to grow. At the same time, total energy use (energy, not electricity) will become more efficient. This is because electric cars and electric heating sources are more efficient than using other energy sources, such as fossil fuels (Vermont Comprehensive Energy Plan - 2016, page 44).

Table A.9 shows the electricity generation targets for new electricity generation in South Hero in 2025, 2035, and 2050. All new wind, solar, hydro, and biomass electricity generation sites will further progress towards achieving the generation targets (in MWh).

Given the difficulty of developing additional hydro generation, and the constraints upon wind development, it is likely that solar generation will need to be a substantial component of meeting these generation targets. Meeting the generation targets will take considerable effort over the next 30 to 35 years. The 2050 generation target (10,927.45 MWh) is about 22 times more than the current generation capacity (493.63 MWh) within the Town of South Hero.

<b>Table A.8 - Electricity Targets</b>			
<b>Electricity Targets</b>	<b>2025</b>	<b>2035</b>	<b>2050</b>
Increased Efficiency and Conservation (BTUs)	25.2%	48.3%	100.7%

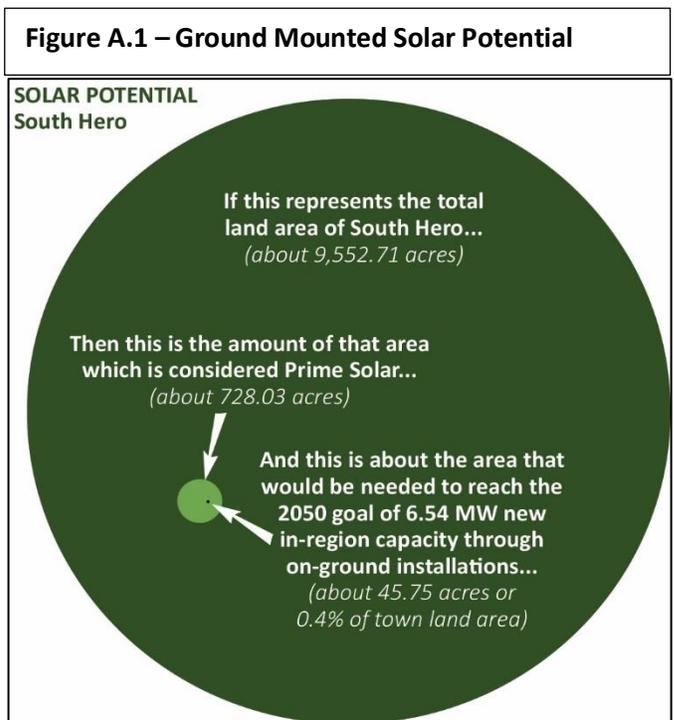
<b>Table A.9 – Renewable Electricity Generation Targets</b>			
<b>Renewable Generation Targets</b>	<b>2025</b>	<b>2035</b>	<b>2050</b>
Total Renewable Generation Target (in MWh)	3,606	7,212	10,927

Table A.10 - Renewable Electricity Generation Potential		
Resource	MW	MWh
Rooftop Solar	1	1,149
Ground-mounted Solar	515	631,111
Wind	1,285	3,939,726
Hydro	0	0
Biomass and Methane	0	0
Other	0	0
<b>Total Renewable Generation Potential</b>	<b>1,801</b>	<b>4,571,986</b>

Based on mapping and calculations completed by NRPC, South Hero has sufficient land to meet the above electricity generation targets. South Hero has access to the renewable electricity generation capacity outlined in Table 7.10. This estimate shows that South Hero has considerably more potential for renewable electricity generation than what is needed to meet the renewable electricity generation targets in Table 7.9. This generation capacity was calculated using the “base” layers for solar and wind. For an explanation of what constitutes a “base” layer, please see the mapping subsection below.

South Hero supports NRPC’s position regarding “commercial” and “industrial” wind facilities. The NRPC Regional Plan finds that the construction of new “industrial” or “commercial” wind facilities within the region does not conform to the Regional Plan (NRPC considers any wind facility with a tower height (excluding blades) in excess of 100 feet tall to be considered an “industrial” or “commercial” wind facility).

Energy potential from biomass and methane sources is not estimated. This is due to a variety of factors including insufficient information on which to create estimates. South Hero encourages the use of these sources for electricity and thermal energy generation, especially on farms.



## Mapping Energy Resources and Constraints

The third required element of an enhanced energy plan is the inclusion of maps that will provide guidance to the community and developers regarding the location of new renewable generation facilities. South Hero has incorporated maps provided by NRPC. These maps show data as required by the Department of Public Service Municipal Determination Standards, including access to energy resources and constraints to renewable development. All maps may be found at the end of this section.

The intent of the maps is to generally show those areas that may be good locations, or may be inappropriate locations, for future renewable electricity generation facilities. However, it is important to note that the maps are a planning tool and do not precisely indicate locations where siting a facility is necessarily acceptable. When an electricity generation facility is proposed, the presence of all natural resources constraints on site shall be verified as a part of the application.

*Mapping Methodology* Spatial data showing the location of energy resources formed the basis of the maps developed by NRPC. This is the data that shows where there is solar, wind, hydro, and biomass “potential” in South Hero based on information provided by the Vermont Sustainable Jobs Fund. “Known” and “possible” constraints were subsequently identified on the maps. Known constraints are conservation resources that shall be protected from all future development of renewable electricity generation facilities. Possible constraints are conservation resources that shall be protected, to some extent, from the development of renewable generation facilities. The presence of possible constraints on land does not necessarily impede the siting of renewable generation facilities on a site. Siting in these locations could occur if impacts to the affected possible constraints are mitigated, preferably on-site.

A full list of known and possible constraints included on the maps is located in Table 7.11. The known constraints and possible constraints used to create the maps include constraints that are required per the Municipal Determination Standards from the Department of Public Service and regional constraints selected by NRPC.

*Solar and Wind.* The solar and wind maps show both “base” and “prime” areas. Base areas are areas with electricity generation potential, yet may contain possible constraints. Prime areas are areas that have electricity generation potential that do not contain known or possible constraints. Areas that do not contain electricity generation potential, and areas that contain a known constraint, are shown as white space on the map.

The solar map indicates a general abundance of base and prime solar areas in South Hero, including many areas located within ½ mile of transmission and three-phase distribution lines. The following preferred locations for solar generation facilities by the Town of South Hero: rooftops, parking lots, and landfills. Brownfield sites located outside of the village areas of South Hero and Keeler Bay are also considered preferred locations.

South Hero strongly prefers solar facilities that have less than 5 MW (~20 acres) in generation capacity. This preference is a reflection of the community’s dedication to preserving the aesthetic and rural qualities of South Hero by restricting the geographic size of solar facilities. In addition, South Hero prefers that solar facilities greater than 149 kW in generation capacity to be sufficiently separated from other similarly sized solar facilities to “break up” the visual impact of two or more solar facilities located next to each other and to preserve South Hero’s rural character.

All solar facilities to be sited in South Hero shall include proper screening. The Town of South Hero hopes to adopt a municipal solar screening ordinance in the future.

South Hero has relatively good access to base and prime wind resources. These areas are generally concentrated near the lakeshore, particularly in the western part of town.

*Hydro and Biomass.* The biomass map is somewhat similar to the solar and wind maps. The biomass map also displays “base” and “prime” areas. However, these categories are not necessarily indicative of electricity generation potential. They instead indicate areas of contiguous forest that may be used for the harvesting of woody biomass for use in either thermal or electric generation.

The hydro map is unique from the other types of generation maps. It shows existing dam sites used for electricity generation. It also shows existing dam sites that are not used for electricity generation, but could be retrofitted to provide electricity generation capacity. Data about these dams comes from a study commissioned by the Vermont Agency of Natural

Resources. The hydro map also shows some known and possible constraints that could impact the redevelopment of some dam sites. South Hero has no existing dam sites and the development of new dam sites is extremely unlikely due to South Hero’s island location and the extensive regulatory process involved in developing new dams.

## Conclusion

Achieving the 90 x 50 goal, and the other energy goals in state statute, will be difficult. South Hero is committed to playing its part in working towards accomplishing these goals and in creating a more sustainable, affordable, and secure energy future.

<b>Table A.11 – Mapping Constraints</b>		
<b>Solar, Wind and Biomass Maps - Known Constraints</b>		
<b>Constraint</b>	<b>Description</b>	<b>Source</b>
<b>Confirmed and unconfirmed vernal pools</b>	There is a 600-foot buffer around confirmed or unconfirmed vernal pools.	ANR
<b>State Significant Natural Communities and Rare, Threatened, and Endangered Species</b>	Rankings S1 through S3 were used as constraints. These include all of the rare and uncommon rankings within the file. For more information on the specific rankings, explore the methodology for the shapefile.	VCGI
<b>River corridors</b>	Only mapped River Corridors were mapped. Does not include 50 foot buffer for streams with a drainage area less than 2 square miles.	VCGI
<b>National wilderness areas</b>		VCGI
<b>FEMA Floodways</b>		VCGI/NRPC
<b>Class 1 and Class 2 Wetlands</b>		VCGI
<b>Designated Downtowns, Designated Growth Centers, and Designated Village Centers</b>	These areas are the center of dense, traditional development in the region. This constraint does not apply to roof-mounted solar within such designated areas. The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan.	NRPC
<b>FEMA Flood Insurance Rate Map (FIRM) special flood hazard areas</b>	Special flood hazard areas as digitized by the NRPC were used (just the 100-year flood plain - 500-year floodplain not mapped). The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan.	NRPC
<b>Ground and surface waters drinking protection areas</b>	Buffered Source Protection Areas (SPAs) are designated by the Vermont Department of Environmental Conservation (DEC). SPA boundaries are approximate but are conservative enough to capture the areas most susceptible to contamination. The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan.	ANR
<b>Vermont Conservation Design Highest Priority Forest Blocks</b>	The lands and waters identified here are the areas of the state that are of highest priority for maintaining ecological integrity. Together, these lands comprise a connected landscape of large and intact forested habitat, healthy aquatic and riparian systems, and a full range of physical features (bedrock, soils, elevation, slope, and aspect) on which plant and animal	ANR

	natural communities depend. The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan. (Source: ANR)	
<b>Public water sources</b>	A 200-foot buffer is used around public drinking water wellheads. The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan.	ANR
<b>Municipal Conservation Land Use Areas</b>	Conservation Land Use Districts, as designated in municipal plans, that include strict language that strongly deters or prohibits development have been included as a regional known constraint. The inclusion of this resource as a regional constraint is consistent with the goals and policies of the Northwest Regional Plan. Specific municipal land use districts included are outlined in Section D of the Regional Energy Plan. The are no areas identified in the South Hero Town Plan were included in this category.	NRPC
<b>Constraint</b>	<b>Description</b>	<b>Source</b>
<b>Protected lands</b>	This constraint includes public lands held by agencies with conservation or natural resource oriented missions, municipal natural resource holdings (ex. Town forests), public boating and fishing access areas, public and private educational institution holdings with natural resource uses and protections, publicly owned rights on private lands, parcels owned in fee by non-profit organizations dedicated to conserving land or resources, and private parcels with conservation easements held by non-profit organizations.	VCGI
<b>Deer wintering areas</b>	Deer wintering habitat as identified by the Vermont Agency of Natural Resources.	ANR
<b>Hydric soils</b>	Hydric soils as identified by the US Department of Agriculture.	VCGI
<b>Agricultural soils</b>	Local, statewide, and prime agricultural soils are considered.	VCGI
<b>Act 250 Agricultural Soil Mitigation Areas</b>	Sites conserved as a condition of an Act 250 permit.	VCGI
<b>Class 3 wetlands</b>	Class 3 wetlands in the region have been included as a Regional Possible Constraint. The inclusion of this resource as a regional	ANR

	constraint is consistent with goals and policies of the Northwest Regional Plan.	
<b>Municipal Conservation Land Use Areas</b>	Conservation Land Use Districts, as designated in municipal plans, that include strict language that deters, but does not prohibit development, have been included as a regional possible constraint. Specific municipal land use districts included are outlined in Section D of the Regional Energy Plan. No areas identified in the South Hero Town Plan were included in this category.	NRPC
<b>Hydro Map - Known Constraints</b>		
<b>Constraint</b>	<b>Description</b>	<b>Source</b>
None		
<b>Hydro Map - Possible Constraints</b>		
<b>Constraint</b>	<b>Description</b>	<b>Source</b>
"303d" list of stressed waters		ANR
Impaired waters		ANR
<b>State Significant Natural Communities and Rare, Threatened, and Endangered Species</b>	Rankings S1 through S3 were used as constraints. These include all of the rare and uncommon rankings within the file. For more information on the specific rankings, explore the methodology for the shapefile.	VCGI

ate in Table 7.12 displays facilities that have a Certificate of Public Good from the Vermont Utilities Commission generate electricity. The Town of South Hero recognizes that some of the data in the table may be out of date or t. The Town of South Hero also recognizes that some identified facilities may no longer generate electricity.

Table A.12 Generation Facilities

Category	Sub Category	Address	CPG Number	Electricity Type	Utility	Capacity kW
Solar	Ground-mounted PV	565 West Shore Road	2960	Net Metered	Vermont Electric Coop	20
Solar	Ground-mounted PV	89 East Shore Road	17-3418	Net Metered	Vermont Electric Coop	15
Solar	Ground-mounted PV: Tracker	76 Lakeview Road	414	Net Metered Group	Vermont Electric Coop	11.59
Solar	Ground-mounted PV: Tracker	316 South Street	18-2204	Net Metered	Vermont Electric Coop	11.4
Solar	Ground-mounted PV: Tracker	135 Kibbie Point Rd	5078	Net Metered	Vermont Electric Coop	11
Solar	Ground-mounted PV: Tracker	142 Ferry Rd	3986	Net Metered	Vermont Electric Coop	10.8
Solar	Ground-mounted PV	561 West Shore Road	2977	Net Metered	Vermont Electric Coop	8.89
Solar	Ground-mounted PV	72 South St	17-2858	Net Metered	Vermont Electric Coop	7.6
Solar	Ground-mounted PV	549 Rt 2	2345	Net Metered	Vermont Electric Coop	6.41
Solar	Ground-mounted PV	74 Whipple Rd	17-4328	Net Metered	Vermont Electric Coop	6
Solar	Ground-mounted PV	16 Hall Road	3063	Net Metered	Vermont Electric Coop	4.03
Solar	Ground-mounted PV: Tracker	134 East Shore Road	6264	Net Metered	Vermont Electric Coop	4
Solar	Ground-mounted PV	14 Whipple Rd	1740	Net Metered	Vermont Electric Coop	2.74
Solar	Ground-mounted PV	14 Narrows Road	506	Net Metered	Vermont Electric Coop	2.17
Solar	Roof-Mounted PV	479 West Shore Rd	1861	Net Metered	Vermont Electric Coop	26.93
Solar	Roof-Mounted PV	505 W Shore Rd	19-0628	Net Metered	Vermont Electric Coop	22.8
Solar	Roof-Mounted PV	159 Landon Road	17-4672	Net Metered	Vermont Electric Coop	13.6
Solar	Roof-Mounted PV	320 South St	2726	Net Metered Group	Vermont Electric Coop	12.08
Solar	Roof-Mounted PV	316 South Street	7288	Net Metered	Vermont Electric Coop	12
Solar	Roof-Mounted PV	30 Wally's Point Rd	3935	Net Metered	Vermont Electric Coop	11

Solar	Roof-Mounted PV	51 Martin Road	17-4574	Net Metered	Vermont Electric Coop	10.4
Solar	Roof-Mounted PV	25 Martin Road	17-3741	Net Metered	Vermont Electric Coop	10.4
Solar	Roof-Mounted PV	153 West Shore Road	3801	Net Metered	Vermont Electric Coop	10
Solar	Roof-Mounted PV	15 Lakeview Rd	18-3630	Net Metered	Vermont Electric Coop	10
Solar	Roof-Mounted PV	14 Featherbed Lane	18-1230	Net Metered	Vermont Electric Coop	10
Solar	Roof-Mounted PV	14 Melcher Place	6932	Net Metered	Vermont Electric Coop	10
Solar	Roof-Mounted PV	113 East Shore Rd	6673	Net Metered	Vermont Electric Coop	10
Solar	Roof-Mounted PV	29 Kibbe Farm Rd	2796	Net Metered	Vermont Electric Coop	9.83
Solar	Roof-Mounted PV	75 South Street	1268	Net Metered	Vermont Electric Coop	9.19
Solar	Roof-Mounted PV	25 Haycorn Hollow	3126, 18-0631	Net Metered	Vermont Electric Coop	8.9
Solar	Roof-Mounted PV	122 Station St	4007	Net Metered	Vermont Electric Coop	8.25
Solar	Roof-Mounted PV	7 Hochelaga Road	2639	Net Metered	Vermont Electric Coop	8.08
Solar	Roof-Mounted PV	30 Ferry Rd	1716	Net Metered	Vermont Electric Coop	7.87
Solar	Roof-Mounted PV	39 Eagle Camp Road	18-2771	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	31 Featherbed Lane	19-0576	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	10 Keeler Bay Rd	18-4181	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	245 South St	18-4017	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	17 Turtle Bay Lane	18-3281	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	467 West Shore Road	17-4795	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	17 Tourville Drive	17-3596	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	33 Colony Way	7263	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	33 Crescent Bay Road	3881	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	135 Ferry Rd	19-3600	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	139 East Shore Rd	19-3898	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	77 Landon Rd	5437	Net Metered	Vermont Electric Coop	7
Solar	Roof-Mounted PV	328 U.S.	1135	Net Metered	Vermont Electric Coop	6.65

	Mounted PV	Route 2		Metered	Electric Coop	
Solar	Roof-Mounted PV	85 Whipple	18-0416	Net	Vermont	
	Roof-Mounted PV	88 Kibbe		Metered	Electric Coop	6.6
Solar	Roof-Mounted PV	Point Road	2722	Net	Vermont	
		117		Metered	Electric Coop	6.42
	Roof-Mounted PV	Lakeview		Net	Vermont	
Solar		Rd	2692	Metered	Electric Coop	6.38
	Roof-Mounted PV	25 Sweeney		Net	Vermont	
Solar		Farm Rd	18-1991	Metered	Electric Coop	6
	Roof-Mounted PV	349 West		Net	Vermont	
Solar		Shore Road	17-4329	Metered	Electric Coop	6
	Roof-Mounted PV	357 South		Net	Vermont	
Solar		St	17-2600	Metered	Electric Coop	6
	Roof-Mounted PV	1 Mott Lane		Net	Vermont	
Solar			17-3269	Metered	Electric Coop	6
	Roof-Mounted PV	4 Chase Ln		Net	Vermont	
Solar		146 East	17-2780	Metered	Electric Coop	6
	Roof-Mounted PV	Shore Road		Net	Vermont	
Solar		64	17-2737	Metered	Electric Coop	6
	Roof-Mounted PV	Featherbed		Net	Vermont	
Solar		Lane	5642	Metered	Electric Coop	6
	Roof-Mounted PV	42 Sweeney		Net	Vermont	
Solar		Rd	5370	Metered	Electric Coop	6
	Roof-Mounted PV	19 Ferry Rd		Net	Vermont	
Solar		45 Heron	3894	Metered	Electric Coop	6
	Roof-Mounted PV	Ridge Rd		Net	Vermont	
Solar		15 Fox	2732	Metered	Electric Coop	5.93
	Roof-Mounted PV	Crossing Rd		Net	Vermont	
Solar		21	2652	Metered	Electric Coop	5.9
	Roof-Mounted PV	Contentmen		Net	Vermont	
Solar		t Lane	2875	Metered	Electric Coop	5.59
	Roof-Mounted PV	44 RichaRds		Net	Vermont	
Solar		Rd	number	Metered	Electric Coop	5.46
	Roof-Mounted PV	321 Rt 2		Net	Vermont	
Solar			2877	Metered	Electric Coop	5.24
	Roof-Mounted PV	161 Landon		Net	Vermont	
Solar		Rd	17-3362	Metered	Electric Coop	5.2
	Roof-Mounted PV	9 Meadow		Net	Vermont	
Solar		Lane	2173	Metered	Electric Coop	5.1
	Roof-Mounted PV	308 South		Net	Vermont	
Solar		Street	18-3182	Metered	Electric Coop	5
	Roof-Mounted PV	86		Net	Vermont	
Solar		Featherbed	18-1748	Metered	Electric Coop	5
	Roof-Mounted PV	5 Sandbar		Net	Vermont	
Solar		Heights	17-0233	Metered	Electric Coop	5
	Roof-Mounted PV	Drive		Net	Vermont	
Solar		45 South	18-0496	Metered	Electric Coop	5
	Roof-Mounted PV	Street		Net	Vermont	
Solar		14 South St	17-2641	Metered	Electric Coop	5

Solar	Mounted PV Roof-Mounted PV	69 Sunset Beach Road	7277	Metered Net	Electric Coop Vermont	
Solar	Mounted PV Roof-Mounted PV	30 Haycorn Hollow	5563	Metered Net	Electric Coop Vermont	5
Solar	Mounted PV Roof-Mounted PV	8 Whipple Rd	3099	Metered Net	Electric Coop Vermont	4.26
Solar	Roof-Mounted PV	6 Sandbar Heights	17-4611	Net Metered	Vermont Electric Coop	3.8
Solar	Roof-Mounted PV	9 Old Farm Rd	17-0213	Net Metered	Vermont Electric Coop	3.8
Solar	Roof-Mounted PV	86 LombaRd Lane	7222	Net Metered	Vermont Electric Coop	3.8
Solar	Roof-Mounted PV	104 Kibbe Point Road	2302	Net Metered	Vermont Electric Coop	3.73
Solar	Roof-Mounted PV	10 Windridge Road	17-3398	Net Metered	Vermont Electric Coop	3.6
Solar	Roof-Mounted PV	58 West Shore Road	2851	Net Metered	Vermont Electric Coop	3.21
Solar	Roof-Mounted PV	50 Whipple Rd	1838	Net Metered	Vermont Electric Coop	3.19
Solar	Roof-Mounted PV	380 South Street	1026	Net Metered	Vermont Electric Coop	3.19
Solar	Roof-Mounted PV	22 South Street	18-0270	Net Metered	Vermont Electric Coop	3
Solar	Roof-Mounted PV	15 Allen Point Road	7257	Net Metered	Vermont Electric Coop	3
Solar	Roof-Mounted PV	47 Colodny Way	3929	Net Metered	Vermont Electric Coop	3
Wind	Small Wind	134 East Shore Road	398	Net Metered	Vermont Electric Coop	2.5
Wind	Small Wind	76 Lakeview Road	414	Net Metered	Vermont Electric Coop	2.5

**Table A.13 Standard Conversions - BTU to Unit**

Unit	Unit Type	British Thermal Units
Kilowatt	Kilowatt	3,412
Gasoline	Gallon	120,404
Ethanol	Gallon	84,714
Diesel Fuel	Gallon	137,571
Heating Oil	Gallon	137,571
Residual Fuel Oil	Gallon	149,690
LPG	Gallon	84,738
Kerosene	Gallon	135,000
Biodiesel	Gallon	127,595
Wood Pellets	Ton	16,500,000
Cord Wood	Cord	20,000,000
Wood	Pounds	8,000

Natural Gas	Cubic Feet	103,200
Compressed Natural Gas	Pounds	20,160
Coal	Short Ton	19,490,000

