

Massachusetts Department of Transportation
Complete Streets Funding Program

Prioritization Plan

Technical Report for the
Town of Nantucket, Massachusetts



Prepared For:
Town of Nantucket
Department of Public Works
188 Madaket Road
Nantucket, MA 02554



Prepared by:
BETA Group, Inc.
315 Norwood Park South,
2nd Floor
Norwood, MA 02062

October 2017



Table of Contents

- 1. Introduction 1
 - 1.1 Complete Streets Policy and Goals 1
 - 1.2 Objectives of the Complete Streets Funding Program..... 1
- 2. Prioritization Structure & Process..... 1
 - 2.1 The Municipal Team..... 1
 - 2.2 The BETA Project Team 2
 - 2.3 Pre-Planning..... 2
 - 2.4 Kick-off Meeting and Municipal Alignment 2
- 3. Prioritization Plan 3
 - 3.1 Project and Study Site Identification..... 3
 - 3.2 Geospatial Data Analysis 3
 - 3.3 Nantucket Bicycle and Pedestrian Advisory Committee..... 23
 - 3.4 Site Visits, Field Reviews, and Data Collection 27
 - 3.5 Analysis and Findings 27
 - 3.6 Final Reporting..... 29
- 4. Conclusions 30
- 5. Appendix 31
 - 5.1 Town of Nantucket Complete Streets Policy 31
 - 5.2 Town of Nantucket Complete Streets Prioritization Plan 31
 - 5.3 Complete Streets Projects Conceptual Cost Estimates 31
 - 5.4 Bicycle and Pedestrian Advisory Committee Rankings 31

Figures

Figure 3.2.1: Nantucket Functional Classification Map

Figure 3.2.2: Nantucket Functional Classification Map (Zoomed)

Figure 3.2.3: Nantucket Bike Network Map (Zoomed)

Figure 3.2.4: Nantucket Land Use Map

Figure 3.2.5: Nantucket Land Use Map (Zoomed)

Figure 3.2.6: Nantucket Points of Interest Map (Zoomed)

Figure 3.2.7: Nantucket Sidewalk Network Map (from MAPC Data) (Zoomed)

Figure 3.2.8: Nantucket MAPC Local Access Score Map (Zoomed)

Figure 3.2.9: Nantucket Potential Complete Streets Projects Map (Zoomed)

Figure 3.3.1: Nantucket Potential Complete Streets Project Ranking Map (Zoomed)

Figure 3.5.1: Sparks Avenue Existing Typical Cross Section

Figure 3.5.2: Sparks Avenue Proposed Typical Cross Section (with widened sidewalk)



1. Introduction

The Massachusetts Department of Transportation (MassDOT) is committed to Complete Streets principles in policies and practice. This program was launched in February of 2016 to provide technical assistance and project funding to foster Complete Streets on local roads.¹ The Town of Nantucket, Massachusetts has embraced MassDOT's ideology and has developed its Complete Streets Policy as part of the Complete Streets Funding Program.

1.1 Complete Streets Policy and Goals

The Town of Nantucket adopted its Complete Streets Policy on May 25, 2016 recognizing that all projects are potential opportunities to include Complete Streets elements that provide and/or enhance safety and accessibility for all the users of its roadways, trails, and transit systems. These users include pedestrians, bicyclists, transit riders, motorists, commercial vehicles, and emergency vehicles. By adopting this Complete Streets Policy, Nantucket aims to implement projects that contribute to safety, health, livability, community character, environmental sustainability, and economic vitality to help to improve the quality of life for its constituents by providing accessible and efficient connections between home, school, work, recreation, and retail destinations.²

1.2 Objectives of the Complete Streets Funding Program

MassDOT aims to assist its communities in their commitment to creating strategic and all-inclusive approaches to Complete Streets. The program will help develop a complete transportation network that provides safe and accessible options for all travel modes for people of all ages and abilities.³ The effort rewards these municipalities with technical assistance and construction funding to plan, design, and implement projects that ultimately promote more livable communities.

2. Prioritization Structure & Process

BETA Group, Inc. established a step-by-step process to create a comprehensive Prioritization Plan for the Town of Nantucket, that reflects the goals of the Municipality and its stakeholders.

2.1 The Municipal Team

Michael Burns, AICP, Transportation Planner
Robert McNeill, PE, MPA, Public Works Director
Chuck Larson, PE, PMP, LEED AP BD+C, Deputy Director

¹ *Complete Streets Funding Program*. Massachusetts Department of Transportation. <http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/LocalAidPrograms/CompleteStreets.aspx>. March 2017.

² *Town of Nantucket Complete Streets Policy*. Town of Nantucket: Board of Selectmen. 25 May 2016.

<https://masscompletestreets.com/>

³ *Complete Streets Funding Program Guidance*. Massachusetts Department of Transportation. January 2016.



2.2 The BETA Project Team

Francis Marinaccio, PE, Civil Engineer
Conrad Leger, Project Manager / Asset Management

2.3 Pre-Planning

A key to success for municipal organizations is an active process that shapes its overall mission and vision. Groups such as the Planning Department, the Department of Public Works, Engineering Department, as well as other advocacy partners generally combine to contribute and define what the municipality will strive for. For this reason, it is important to take into account any prior work that is relevant to these types of projects.

Planning information collected for the Town of Nantucket includes:

- § Nantucket Complete Streets Policy (2016)
- § MassDOT Federal Funding Obligations – Nantucket
- § Nantucket Bike Path Map
- § Nantucket Coordinated Human Services Public Transportation Plan (2015)
- § Nantucket Downtown Parking Evaluations
- § Nantucket Downtown Parking Study (2010)
- § Nantucket Downtown Traffic Study (2008)
- § Nantucket Master Plan (2009)
- § Nantucket Goals and Objectives for Balanced Growth
- § Nantucket Open Space and Recreation Plan (2007)
- § Nantucket Park and Ride System Study (2010)
- § Nantucket Fairgrounds Intersections (2006)
- § Nantucket Mid-Island Area Traffic Study
- § Nantucket Parking Management Plan (2010)
- § Nantucket Parking Management Program Policy (2011 Draft)
- § Nantucket Public Participation Plan for Transportation Planning Activities (2007)
- § Nantucket Public Participation Plan for Transportation Planning Activities (2016 Draft)
- § Nantucket Regional Transportation Plan (2016)
- § Nantucket Transportation improvement Plan (2016-2019)
- § Nantucket Unified Planning Work Program (2016)
- § Nantucket Update of the Bicycle and Pedestrian Master Plan (2005)

2.4 Kick-off Meeting and Municipal Alignment

The BETA Project team and the Municipal Team first met on March 8, 2017 to align goals, tailor the work flow structure, and to set important milestones, schedules, and outcomes.

The Complete Streets Prioritization Plan Study follows this five step process:

1. Identification of stake holders, study sites, and/or initial potential projects as well as a general scope for each.
2. Conduct GIS Analysis to detect sidewalk network gaps, priority routes, and MAPC Local Access scores to identify potential project areas and/or validate previously identified projects.

3. Carry out multiple site visits and field reviews of each location. Analyze field observations; prepare cost estimates and a preliminary Prioritization Plan.
4. Present findings to the Owner for review.
5. Complete the Final Prioritization Plan and Technical Report.



3. Prioritization Plan

3.1 Project and Study Site Identification

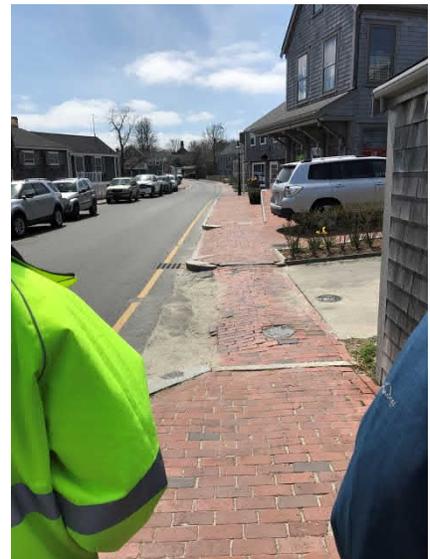
An integrative approach was taken to create a planning-level list of potential projects or study sites. The initial list of projects to be considered in Nantucket was combined from the following for a total of 31 projects.

1. Complete Streets Kick-off Meeting
2. Nantucket Bicycle and Pedestrian Advisory Committee Suggestions
3. BETA Geospatial Data Analysis

3.2 Geospatial Data Analysis

BETA completed a comprehensive analysis of geospatial data combined with transportation understanding and engineering judgement to identify additional potential Complete Streets projects and elements, and/or to validate existing identified projects by the Department of Public Works (DPW) and the Bicycle and Pedestrian Advisory Committee, based on the particular needs of the community. A multitude of data was reviewed for this analysis including:

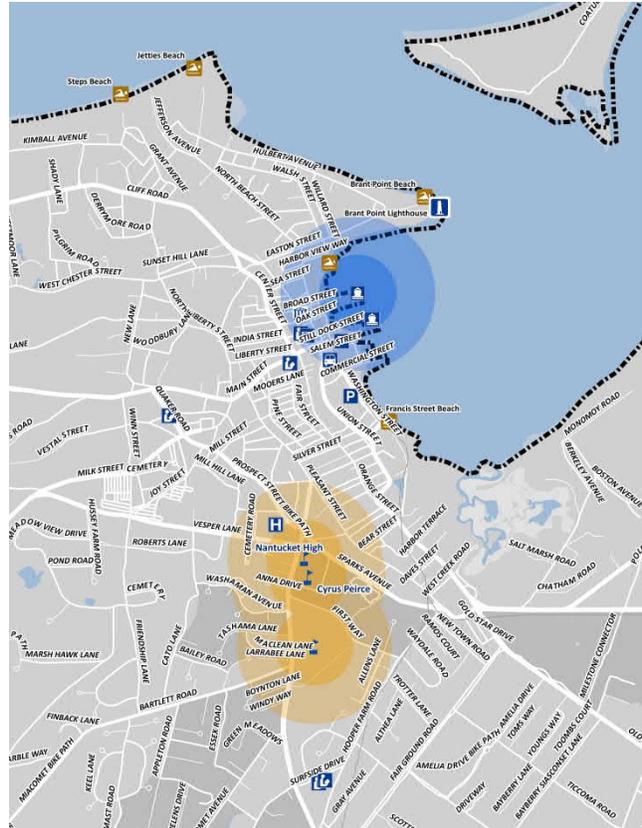
- § MassGIS data (schools, colleges, seaports, airports, hospitals, libraries, etc.),
- § Census tract data,
- § Roadway functional classifications,
- § Land use in Nantucket,
- § Local data (NRTA WAVE Bus Routes, parking lots, etc.),
- § BETA developed points of interest and priority routes,
- § Sidewalk network gap analysis,
- § MAPC Local Access Scores, and
- § Trip generation/destinations.



See Figures 3.2.1 to 3.2.9 for graphic representation maps of this data. Note that full sized maps can be found in the appendix.

To discover deficiencies in Nantucket's sidewalk network, BETA used GIS data provided by the Town as well as field collected data of existing sidewalk infrastructure and its condition/accessibility. The Department of Public Works (DPW) had created a GIS layer as part of their sidewalk maintenance program of planned/funded Capital Improvement Program projects and future maintenance projects. This information helps to identify potential Complete Streets projects and helps to improve upon existing planned projects by exploring the feasibility of adding Complete Streets elements to these projects. This information combined with existing sidewalk information collected in the field, greatly help to gauge a project's value in eliminating network gaps.

BETA also used geospatial data along with priority routes and trip generation/destinations to develop potential projects that might help to better connect pedestrians and bicyclists in Nantucket. The priority routes aim to describe roadways that certain types of user trips (walking, bicycle, and transit) might use to access their destinations. Schools, public transportation nodes, public buildings, businesses, densely populated census tracts, and popular points of interest were the types of buildings/areas identified as key origins or destinations that a citizen might walk, bike, or use public transportation to get to.



The MAPC Local Access data helps to describe this relationship as well. The Local Access Scores along with the sidewalk network mapping assisted BETA in determining validity of proposed projects and to find other projects that may benefit the community.

The preliminary project list was reviewed for program requirements and eligibility. Projects were also vetted for their added benefit to overall transportation connectivity and to the community as a whole. Sites that did not meet program requirements were disqualified from further examination through this study.

After the addition of projects identified by BETA, the Town of Nantucket had a total of 31 potential projects.

After the addition of projects identified by BETA, the Town of Nantucket had a total of 31 potential projects.

After the addition of projects identified by BETA, the Town of Nantucket had a total of 31 potential projects.

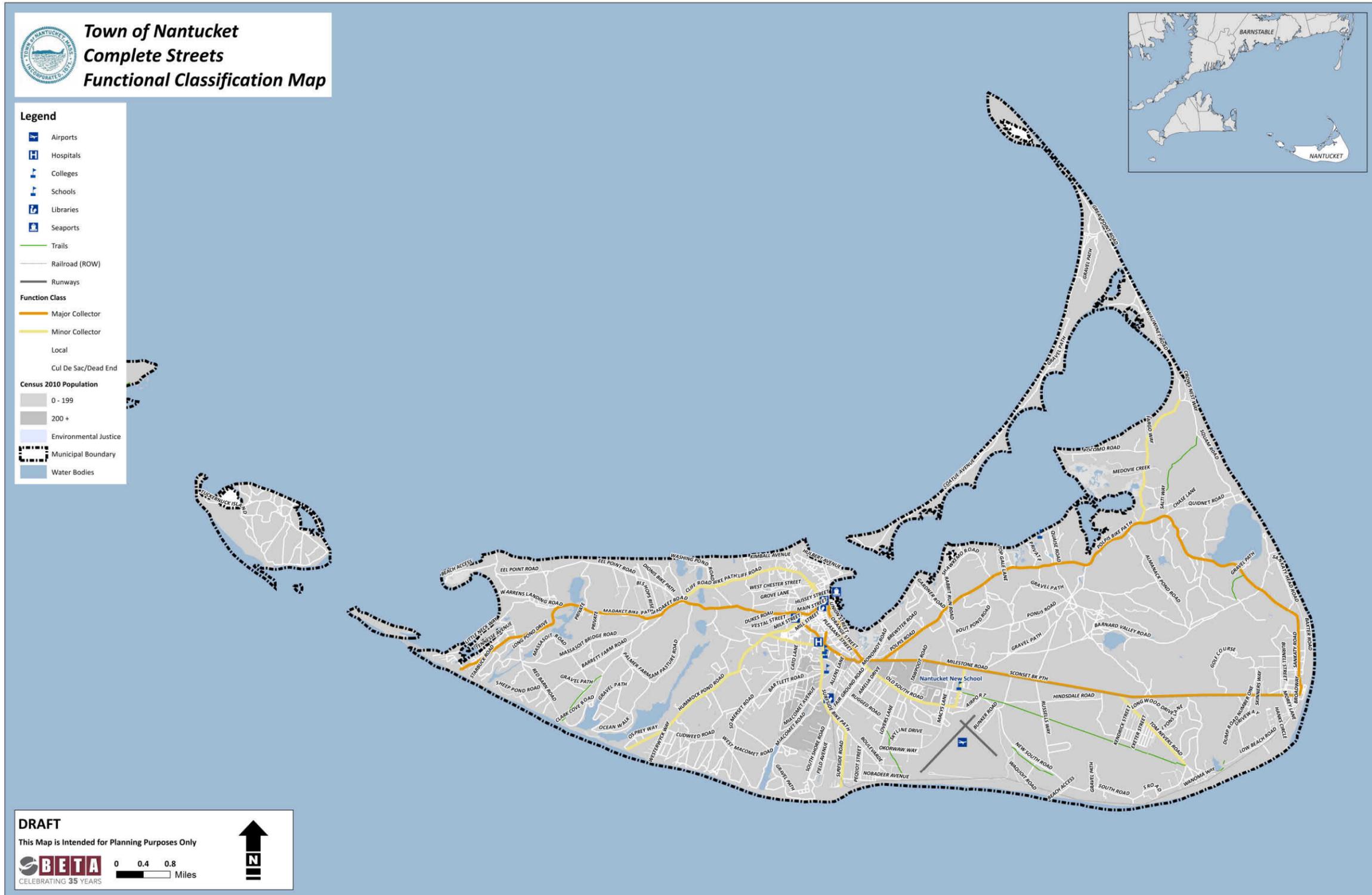


Figure 3.2.1: Nantucket Functional Classification Map (Full size maps can be found in the Appendix)

This Page Intentionally Left Blank

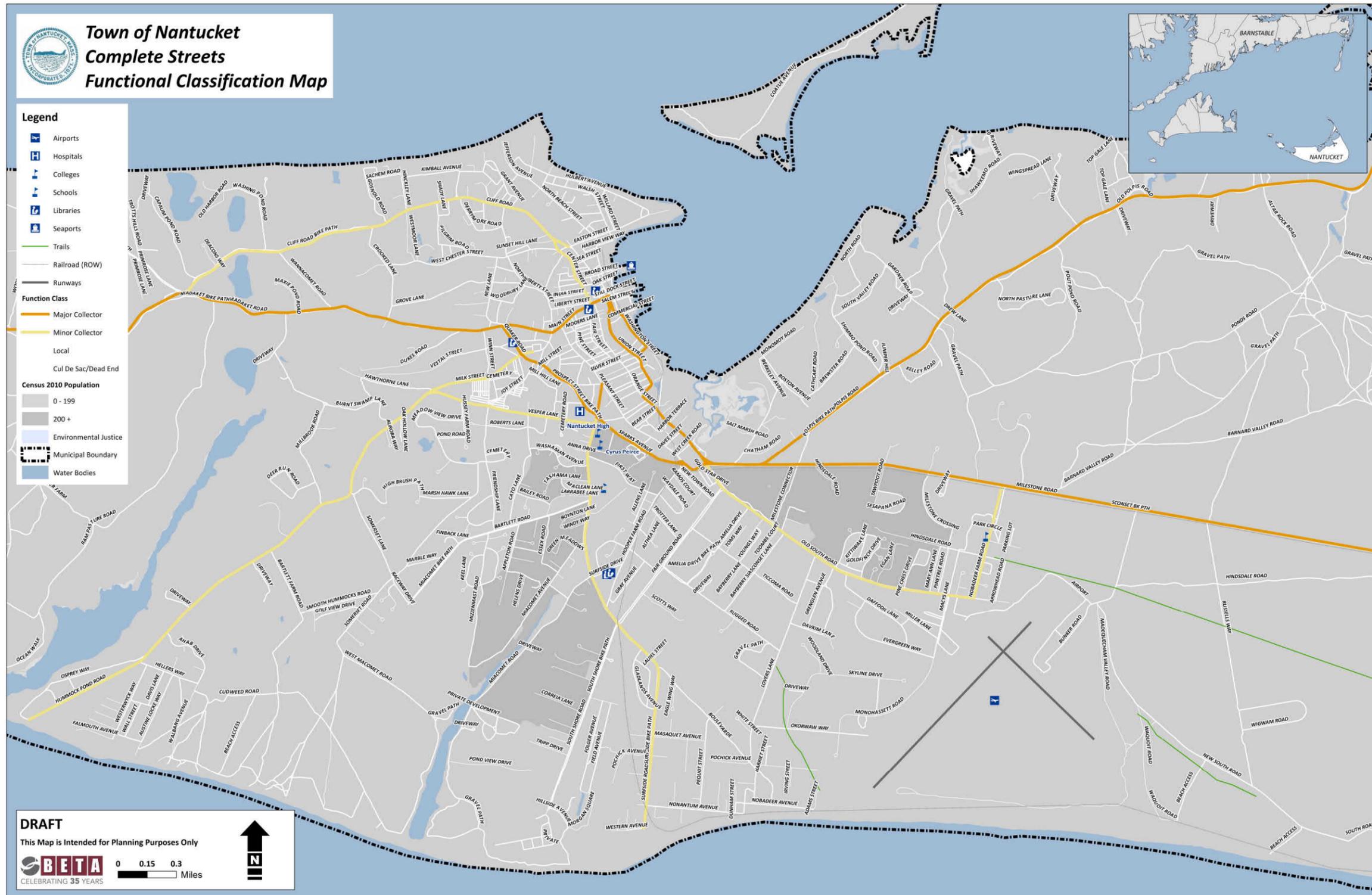


Figure 3.2.2: Nantucket Functional Classification Map (Zoomed)

This Page Intentionally Left Blank

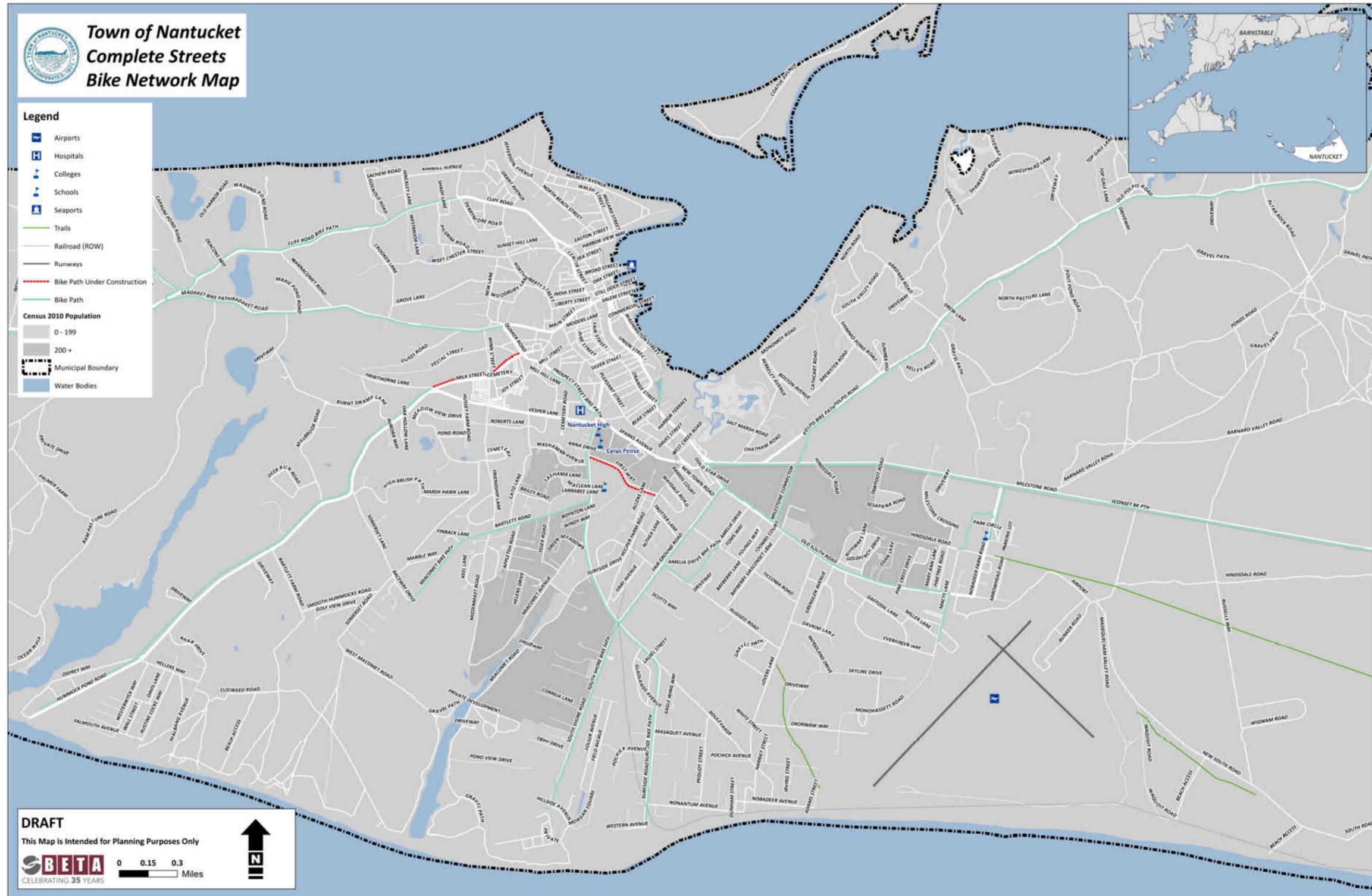


Figure 3.2.3: Nantucket Bike Network Map (Zoomed)

This Page Intentionally Left Blank

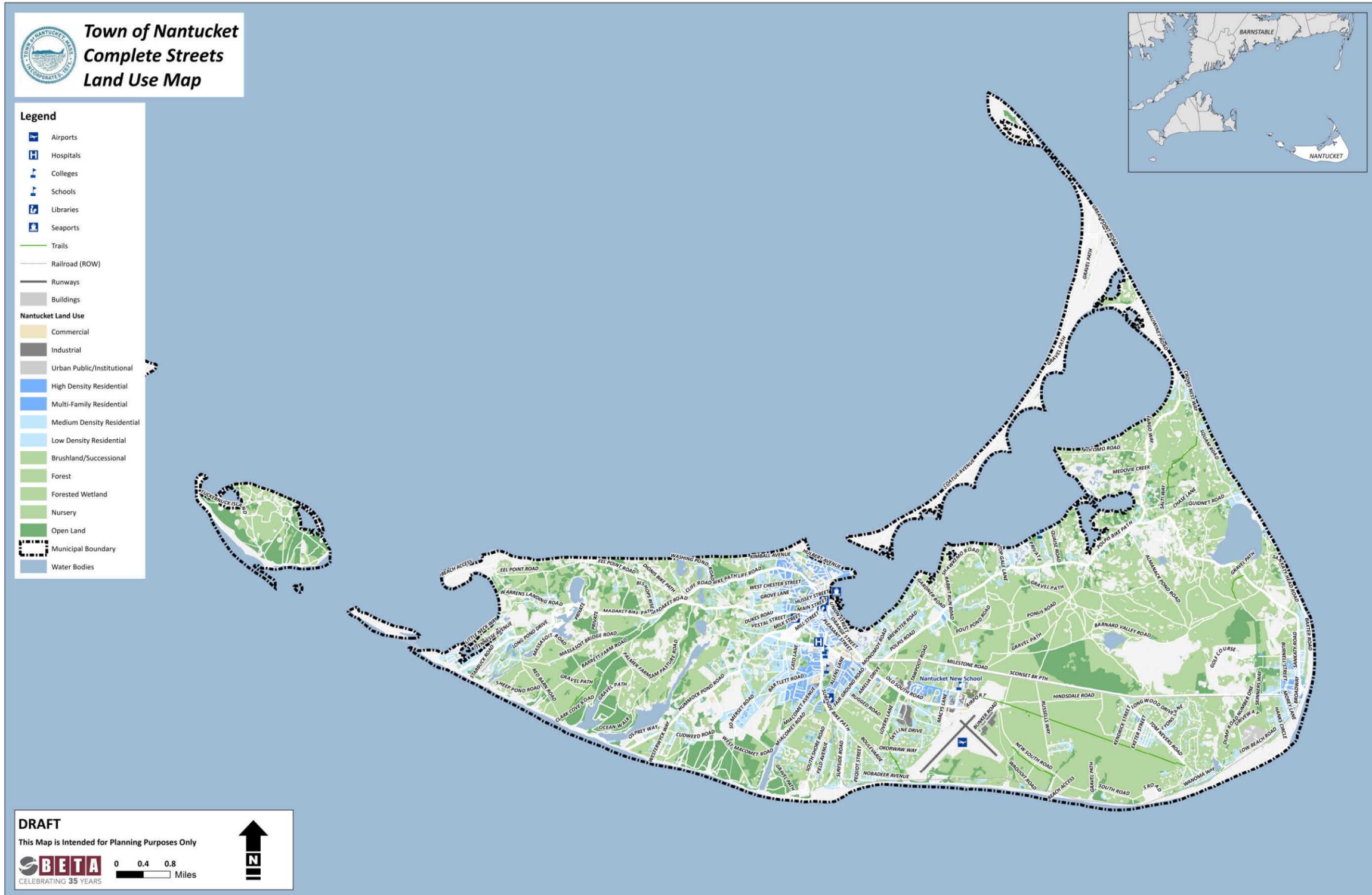


Figure 3.2.4: Nantucket Land Use Map

This Page Intentionally Left Blank

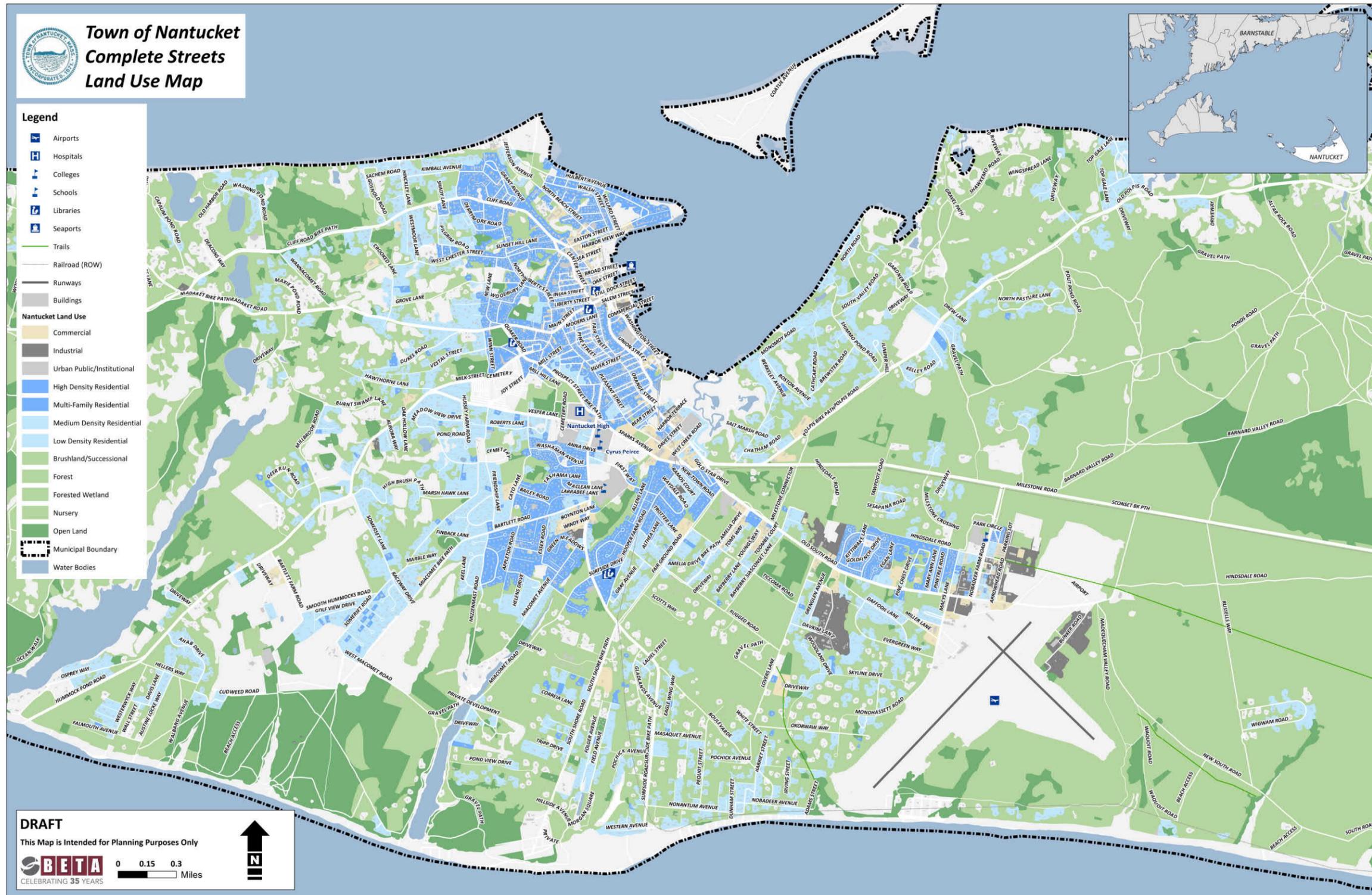


Figure 3.2.5: Nantucket Land Use Map (Zoomed)

This Page Intentionally Left Blank

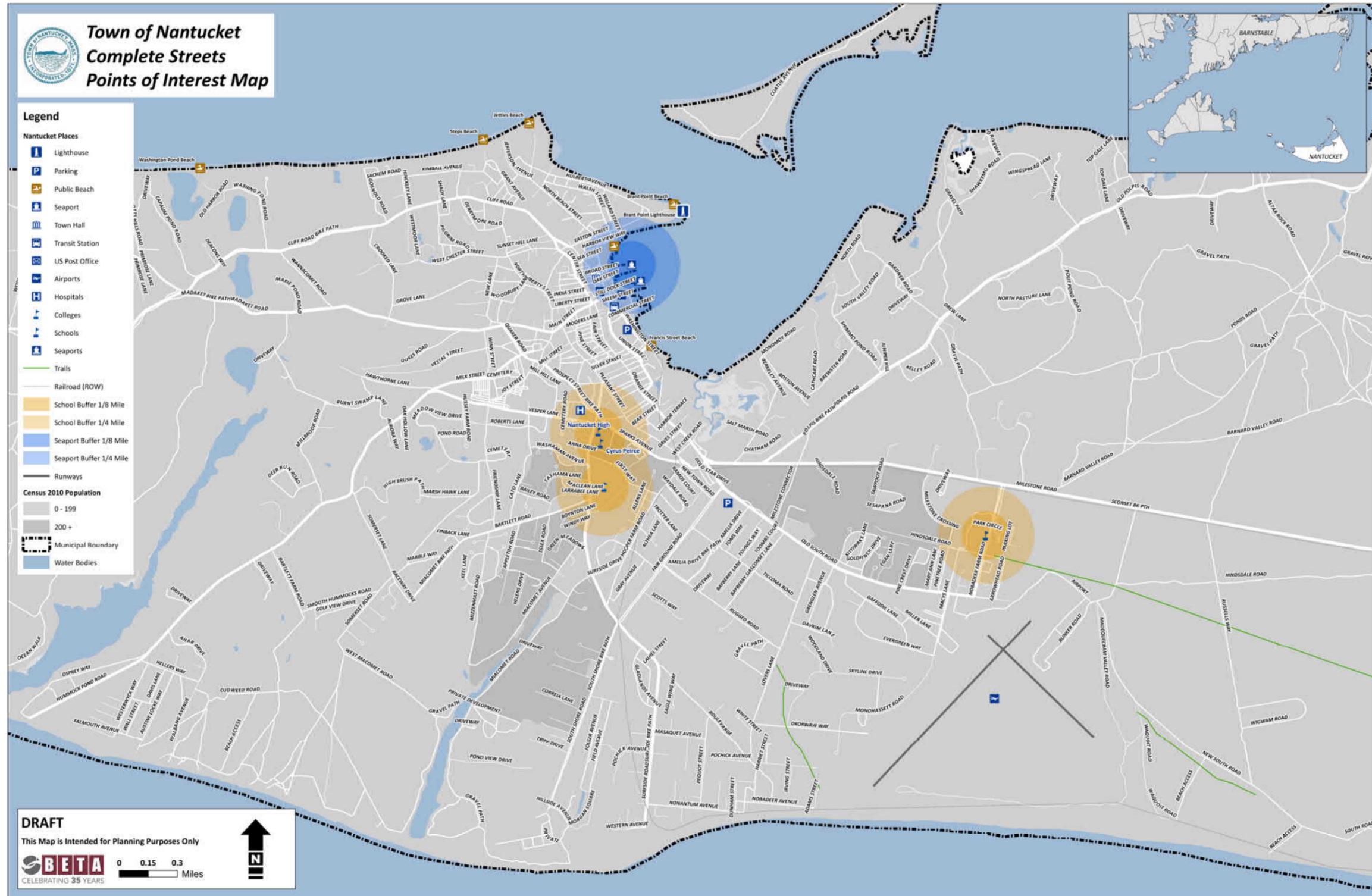


Figure 3.2.6: Nantucket Points of Interest Map (Zoomed)

This Page Intentionally Left Blank

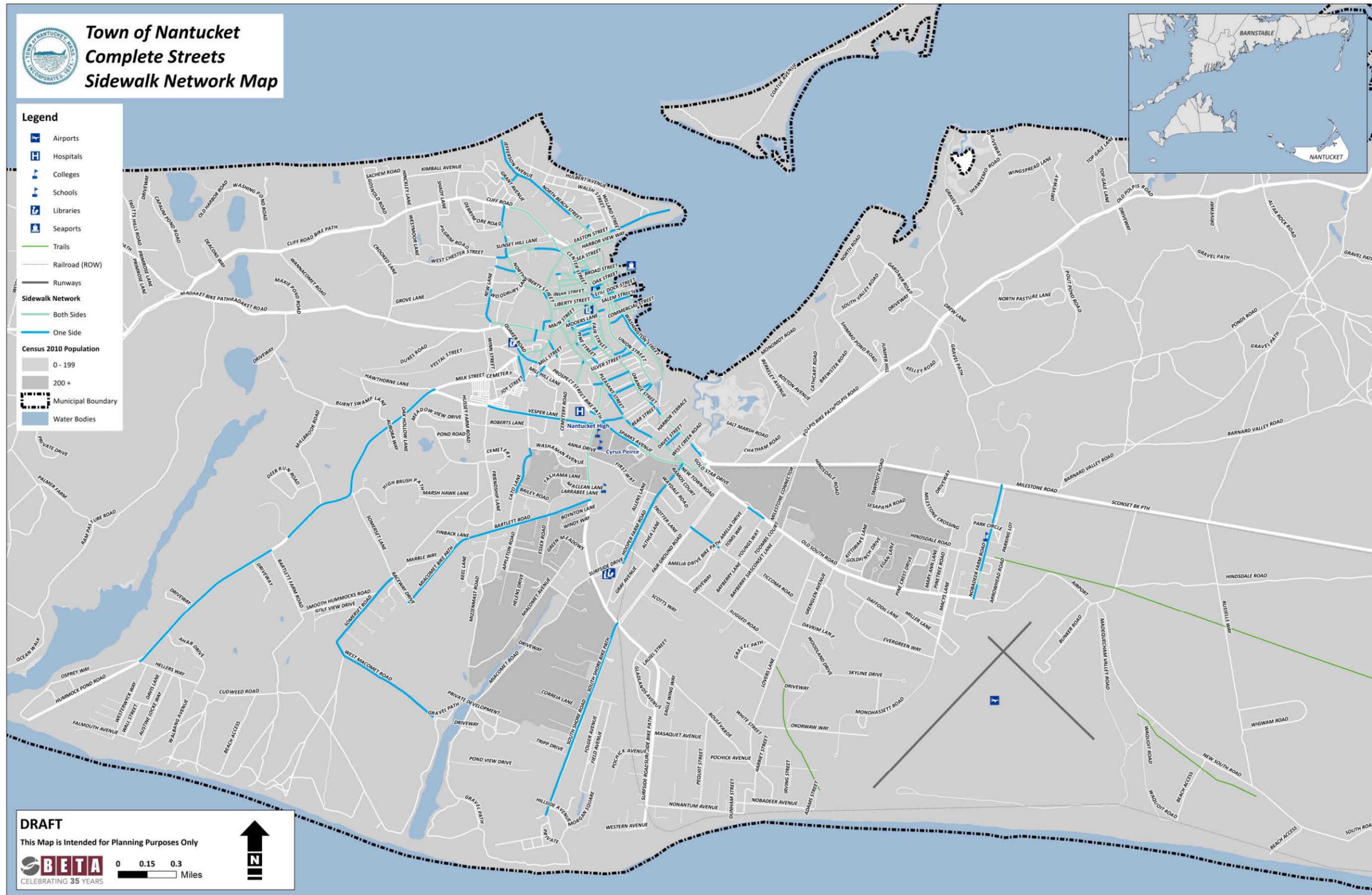


Figure 3.2.7: Nantucket Sidewalk Network Map (from MAPC data) (Zoomed)

This Page Intentionally Left Blank

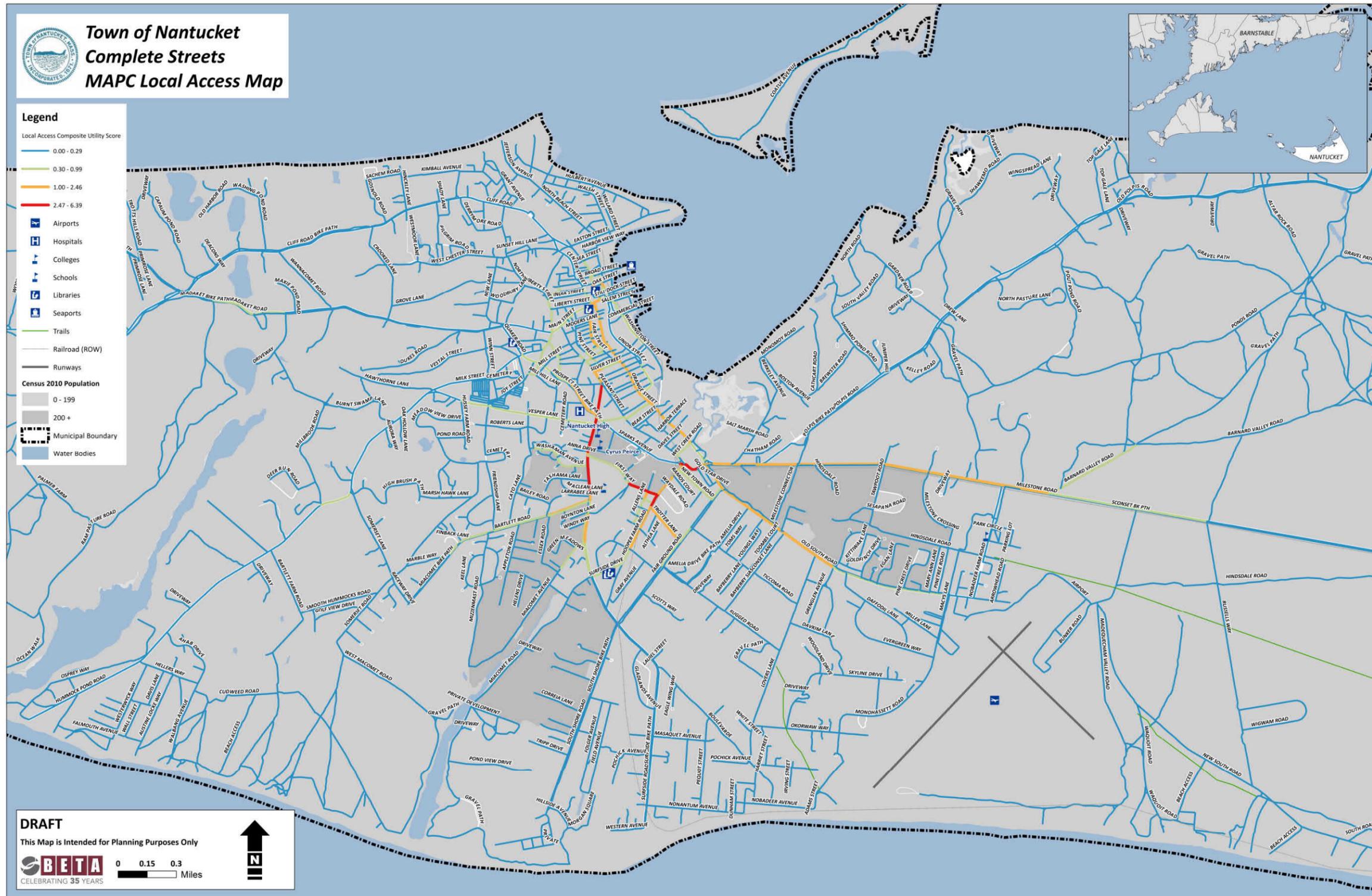


Figure 3.2.8: Nantucket MAPC Local Access Score Map (Zoomed)

This Page Intentionally Left Blank

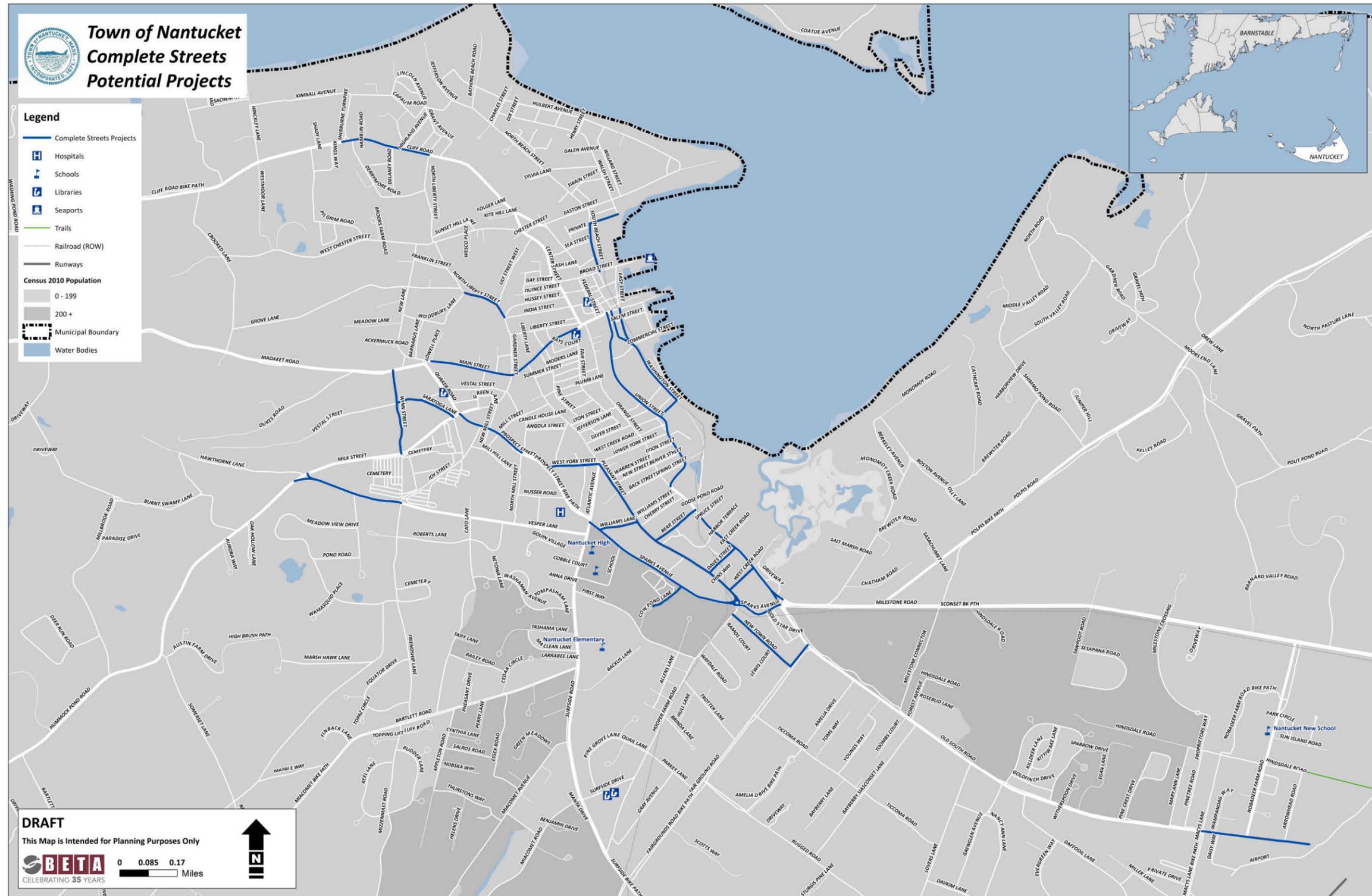


Figure 3.2.9: Nantucket Potential Complete Streets Projects Map (Zoomed)

This Page Intentionally Left Blank

3.3 Nantucket Bicycle and Pedestrian Advisory Committee

The Bicycle and Pedestrian Advisory Committee played an important part in the development of the Complete Streets Prioritization Plan for the Town of Nantucket. Not only did the Committee make project and study area suggestions, they were also instrumental in prioritizing the potential projects.

The representatives for the committee included:

- § Jason Bridges, Chairmen
- § Ian Goulding, Vice Chairmen
- § Rachel Hobart
- § Harvey Young
- § Charlie Walters
- § Kevin Marshall
- § Linda Williams, NP&EDC Appointee
- § Dave Fredricks
- § Mike Burns, Transportation Planner



Of the list of 31 potential Complete Streets projects, the Advisory Committee ranked each project on a scale from 1-5 (5 being the highest) based on the project's ability to provide the greatest improvement to mobility for pedestrians, bicyclists, and public transit while also supporting the goals of the Town's Complete Street Policy. The potential project ranking can be found in the Appendix.

From these rankings, the top 15-20 projects would be chosen for further evaluation by BETA.



This Page Intentionally Left Blank

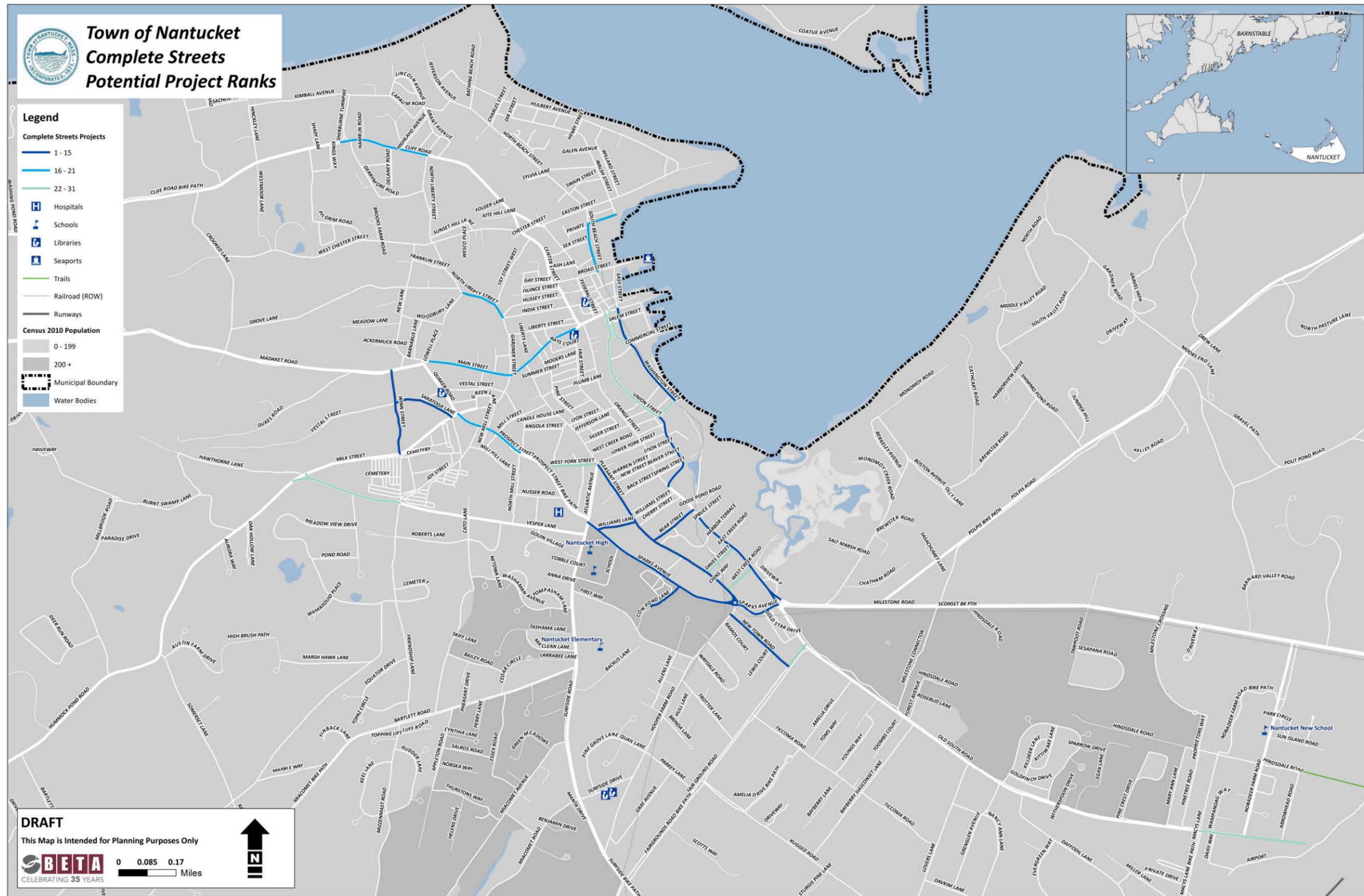


Figure 3.3.1: Nantucket Potential Complete Streets Project Ranking Map (Zoomed)

This Page Intentionally Left Blank

3.4 Site Visits, Field Reviews, and Data Collection

Prior to commencing field reviews, BETA reviewed all available planning documents and data.

BETA conducted field review assessments for each study site. In some cases, multiple visits were necessary to make observations of the study locations at different peak operating and/or time periods.

The following tasks were performed at each project location:

- § Inspected existing right-of-way conditions
- § Recorded roadway and sidewalk measurements
- § Identified deficiencies, barriers to accessibility, and network gaps
- § Identified potential utility and right-of-way issues
- § Recorded photographs and videos

The captured information allowed the BETA team to better define project limits, propose appropriate Complete Streets elements, and to make initial evaluations of feasibility/constructability. Proposed improvements aim to align with the objectives of the Town’s Complete Streets Policy; creating enhancements that promote safe and accessible options for all travel modes for people of all ages and abilities. This information shaped the development of the Prioritization Plan.



3.5 Analysis and Findings

Data collected in the field was compiled and supplemented with existing planning documents which allowed for the alternatives to be evaluated, conceptual order-of-magnitude construction cost estimates to be prepared, and the criteria required for the Prioritization Plan to be developed. It is important to note that only direct construction costs are eligible for reimbursement through the Complete Streets Funding Program. Any costs necessary for tasks related to engineering services for design, bidding document preparation, construction oversight, obtaining rights-of-way, or other tasks beyond the scope of the Prioritization Plan development are not included.

Some of the study sites began with clearly defined proposed improvements whereas other locations could accommodate a multitude of Complete Streets elements. The alternatives that appear in the Prioritization Plan were selected due to their feasibility of construction, level of benefits to safety and accessibility, and economic impact.

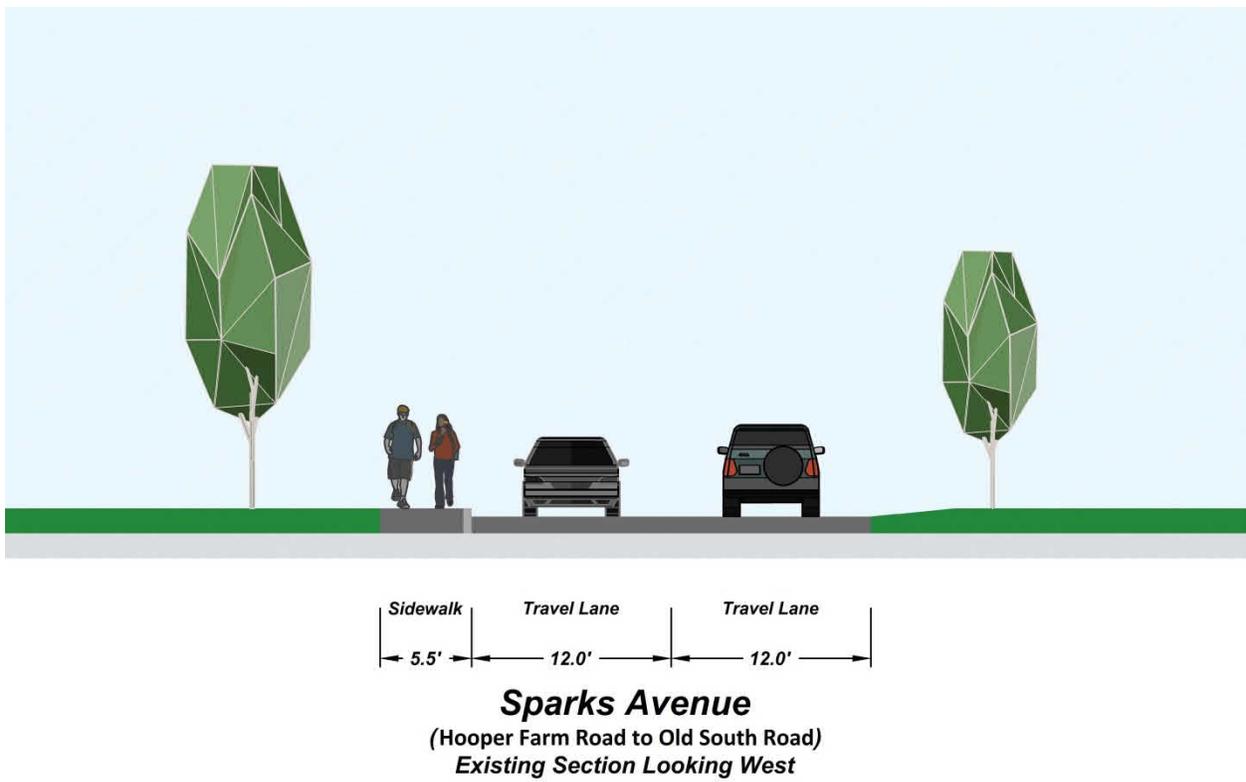


Figure 3.5.1: Sparks Avenue Existing Typical Cross Section

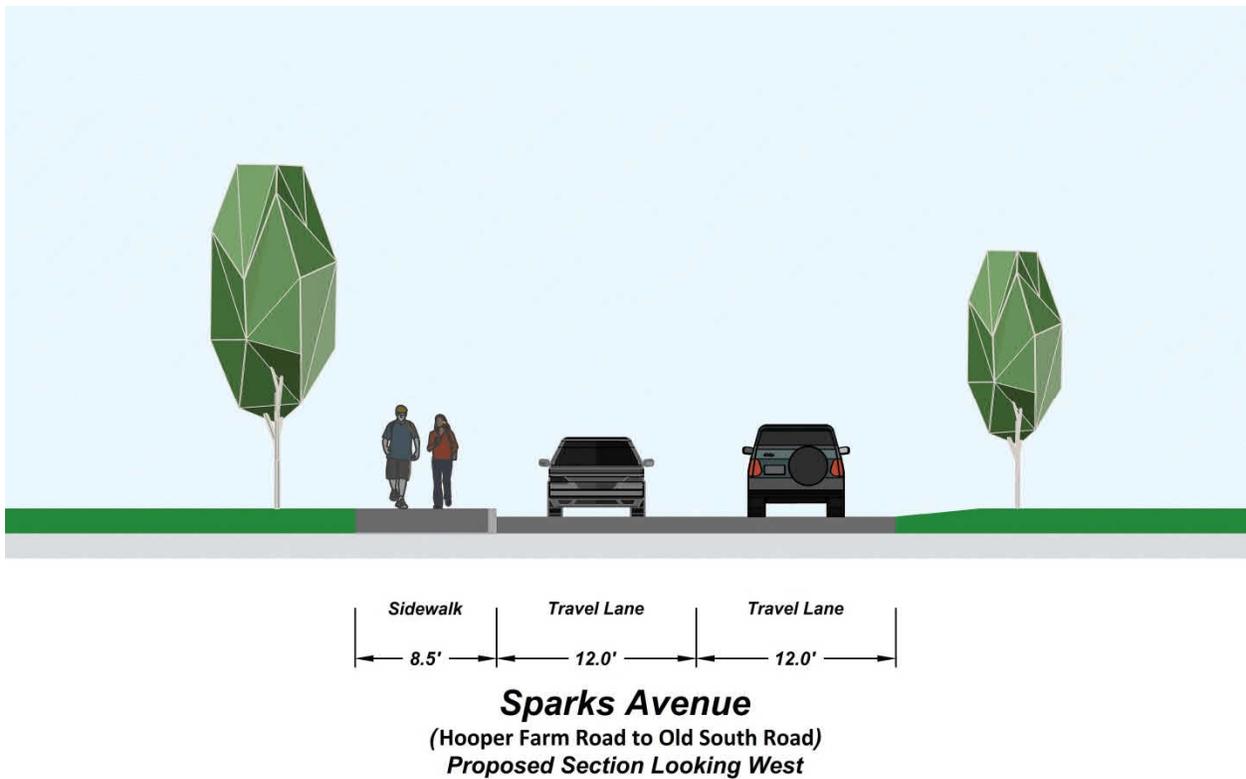


Figure 3.5.2: Sparks Avenue Proposed Typical Cross Section (with widened sidewalk)



Information for each project was entered into the most recent MassDOT Prioritization Plan template from the Complete Streets Portal.

The Prioritization Plan template includes the following categories:

- § Project Details
 - § Rank
 - § Project Name
 - § Project Description
- § Environmental Justice Population
- § Complete Streets Location
 - § Project Limits
 - § Project Start Location: X,Y Coordinates (MA State Plane Meter)
 - § Project End Location: X,Y Coordinates (MA State Plane Meter)
- § Project Origin and Type
 - § Complete Streets Project Origin (planning documentation or supporting analysis)
 - § Complete Streets Project Type
- § Complete Streets Needs
 - § Safety
 - § ADA Accessibility
 - § Pedestrian Mobility
 - § Bicycle Mobility
 - § Transit Operations and Access
 - § Vehicular Operations
 - § Freight Operations
 - § Will this project be in coordination with other communities? (list, if applicable)
- § Complete Streets Funding Request
 - § Total Estimated Project Cost
 - § Complete Streets Funding Requested
 - § Other Funding Source(s) and Amount (if applicable)
- § Construction Schedule
 - § Anticipated Construction Duration (number of months)
 - § Desired Construction Start Date (month/year)

3.6 Final Reporting

The Prioritization Plan was finalized and submitted to the Town of Nantucket for their initial review. The Municipal Team read for intent, accuracy, and consistency. The resulting priority ranking of the Town of Nantucket's Complete Streets projects can be found in the Final Prioritization Plan Appendix. The Town will submit the Final Prioritization Plan to MassDOT for approval.

4. Conclusions

The objective of this project was to develop a Prioritization Plan for the Town of Nantucket for submission to MassDOT as part of the Complete Streets Funding Program. Projects were identified by the Municipal Team through prior planning studies and input from local advisory committees. Geospatial analyses and engineering judgement were used to refine projects and determine feasibility and necessary components. The Bicycle and Pedestrian Advisory Committee ranked all potential projects. Finally, field reviews, data analysis, and engineering estimates were used to finalize a plan that realizes the vision of MassDOT's Complete Streets Funding Program and meets the goals of the Town's Complete Streets Policy. Once approved by MassDOT, the completed plan will allow the Town to submit projects from the Prioritization Plan for funding (up to \$400,000 per year) as part of the Tier 3 phase of the program.