



Map 13. Street Classification Map

4. REGIONAL ROADWAY NETWORK

4.1. FUNCTIONAL CLASSIFICATION

According to the Town of Nantucket GIS data there are approximately 89.5 miles (22%) of public roads, 88.3 miles (22%) of private roads, and 226.4 miles (56%) of roads with undetermined ownership. These roads with undetermined ownership appear to be unpaved proprietor ways and are likely private.

In 1992, the NP&EDC, in conjunction with the Nantucket Department of Public Works, and in accordance with the Massachusetts Highway Department guidelines, completed the functional reclassification of the Island's road system.

Map 13 shows the location of major and minor rural collectors on Nantucket, and as shown in the table above, there are approximately 24.3 miles of major collector roadways, 14.1 miles of minor collector roadways, and 365.8 miles of local roadways.

Table 22. Roadway Classification

CLASSIFICATION	CHARACTER	LENGTH (Miles)
MINOR COLLECTOR		14.1
	URBAN Total	9.3
	RURAL Total	4.8
MAJOR COLLECTOR		24.3
	URBAN Total	7.6
	RURAL Total	16.7
LOCAL		365.8
Grand Total		404.2

The Highway Functional Classification System classifies public roads by the service each road provides. This system describes collectors as providing “a lower degree of mobility than arterials. They are designed for travel at lower speeds and for shorter distances. Collectors are typically two-lane roads that collect and distribute traffic from the arterial system.”

The collector system can be further classified into urban and rural classifications based on the urban area or urban cluster boundaries, which depict population densities using data from the 2000 Census. In the urban area, the collector system provides traffic circulation within residential neighborhoods and commercial and industrial areas.

The system describes the rural collector system as being “stratified into two subsystems: major and minor collectors. Major collectors provide service to any county seat not on an arterial route. They also serve larger towns not accessed by higher order roads, and important industrial or agricultural centers that generate significant traffic (but are avoided by arterials).”

The system also describes rural minor collectors as being “spaced at intervals, consistent with population density, to collect traffic from local roads and to insure that all urbanized areas are within a reasonable distance of a collector road.”

The roads classified as collectors include Madaket, Sparks, Orange, Polpis, Milestone, Sankaty, Cliff, Hummock Pond, Vesper, Surfside, Old South, Nobadeer, Tom Nevers, and Wauwinet Roads. The remaining roads are classified as local and consist of many local access routes and unpaved private roads.

4.1.1. Scenic Roadways

The Town of Nantucket designated Milestone Road, Polpis Road, Madaket Road, and Wauwinet Road as scenic roadways with the approval article 65 of the 1984 Annual Town Meeting. Pursuant to M.G.L ch. 40 c 15C, any tree or stonewall removal along these roadways requires Planning Board approval. A map of these roadway are shown in Map 14.



Map 14. Scenic Roadway

4.2. TRAFFIC VOLUMES

The NP&EDC conducts traffic counts of the collector system, as well as some local streets each summer season. Additionally, traffic counts are also taken and provided to MassHighway for Polpis Road, Sankaty Road, and Union Street in the spring, summer, and fall.

Table 23. Automated Traffic Recorder (ATR) Counts – June to August (NP&EDC)

Roadway	Year			
	2002	2003	2004	2005
Milestone Rd	16,780	16,949	19,002	19,530
Orange St	16,888	17,663	16,449	16,605
Old South Rd	15,537	15,792	15,597	16,405
Surfside Rd	11,571	13,542	12,887	12,960
Sparks Ave	10,678	10,237	10,467	10,504
Prospect St		10,142		7,924
Fairgrounds Rd	7,498	7,729	7,498	7,670
Polpis Rd	6,276	4,705	5,779	6,021
Atlantic Ave	5,605	5,334	6,636	5,188
Hummock Pond Rd		6,130		4,460
Union St	3,646		3,094	3,523
Cliff Rd				2,958
Sankaty Rd	1,619		1,639	1,886
Bartlett Rd		8,165	7,404	
York St	2,559			
Eel Point Rd				
Madaket Rd	5,957	6,110	4,739	
Pleasant St		9,064	6,636	

*Bold entries are collector roadways.

Table 23 lists each of the streets that have been counted each summer season from 2002 to 2005. These counts have not been seasonally adjusted. This table lists Average Daily Traffic, or ADT, by highest volume for 2005. The ADT is used to measure the volume, or number, of vehicles that utilize a given street. It can be seen that Orange Street, Milestone Road, Old South Road, and Surfside Road are the most traveled streets of the ones that were counted.



Map 15. High Traffic Volume Roadways

Table 24. Traffic Counts of the Four Most Traveled Roads (NP&EDC)

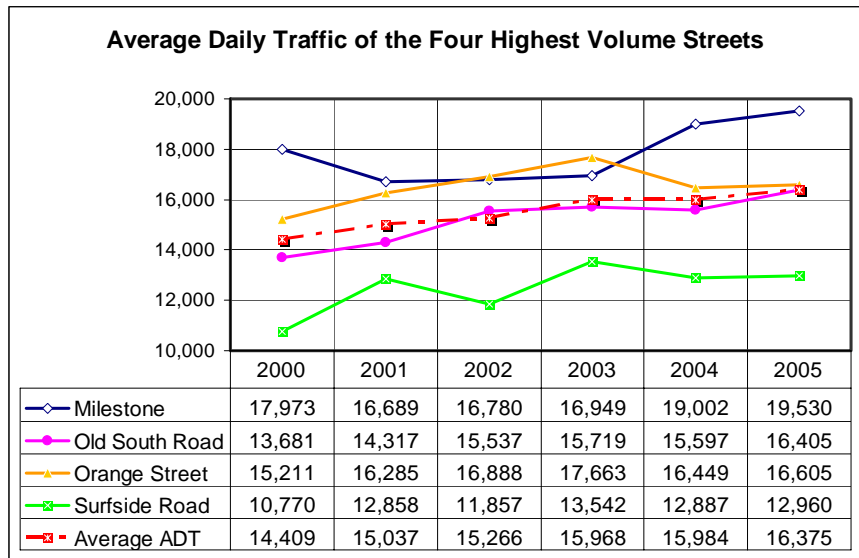


Table 24 illustrates the changes in ADT from 2000 to 2005 for four streets on Nantucket with the highest volume. It should be noted that there is an annual growth rate of 2.6% for the average ADT of these streets from 2000 to 2005.

4.3. SAFETY

The NP&EDC collects crash records each year from MassHighway and generates a listing of major roadways with the highest number of crash totals. This data is provided in the table below. This data is used to evaluate and generate recommendations to improve safety along these roadways. Section 6.5 of this plan discusses safety of bicycle and pedestrian facilities.

Table 25. Vehicle Crashes, 2003-2005

Major Roadway	Number of Crashes
Old South Road	28
Pleasant Street	25
Surfside Road	25
Milestone Road	23
Orange Street	18
Sparks Avenue	16
Madaket Road	13
Union Street	13
Washington Street	13
Main Street	11

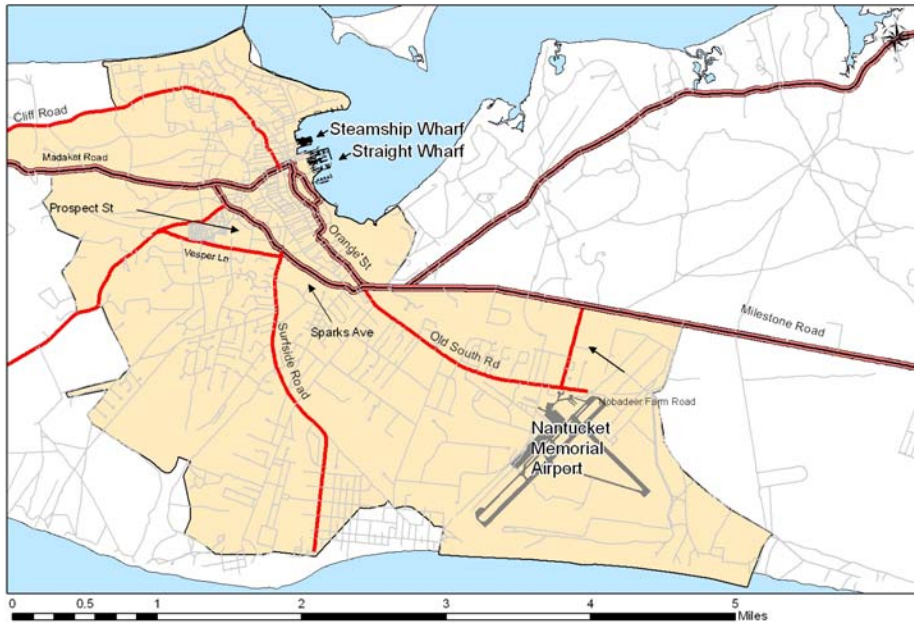
In addition to collecting the total number of crashes along major roadways, the NP&EDC has collected the accident rate of intersections (accidents per million vehicles entering the intersection) in the Mid-Island area where many major roadways converge. These accident rates were published in the *Mid-Island Area Traffic Study* in 2005, and is provided in table 26. For comparison purposes it should be noted that the average state-wide accident rate was 0.66 and the District 5 (the district composed of southeastern Massachusetts and the Cape and Islands) accident rate was 0.61 at the time the Nantucket accident rates were developed.

Table 26. Intersection Accident Rates, 2001-2003

Location	Total	Avg. / Year	Accident Rate
Pleasant St at York St and Atlantic Ave	17	4.25	0.89
Pleasant St at Williams Ln	13	3.25	0.88
Milestone Rd at Polpis Rd	20	5	0.82
Surfside Rd at Fairgrounds Rd	14	3.5	0.69
Surfside Rd at Miacomet Ave	14	3.5	0.62
Old South Rd at Fairgrounds Rd	14	3.5	0.61
The Milestone Rotary	22	5.5	0.57

4.4. INTER-MODAL LINKS

4.4.1. Airport and Ferry Docks



Map 16. Points of Entry

Nantucket has three points of entry: The Nantucket Memorial Airport, the Steamship Authority (SSA) ferry dock (Steamboat Wharf) and the Hy-Line ferry docks (Straight Wharf), see Map 16. The SSA ferry service provides the only means of transportation to the island for automobiles and trucks. These locations are inter-modal points for individuals arriving to the island to access buses, taxis, or rental cars bikes, or mopeds.

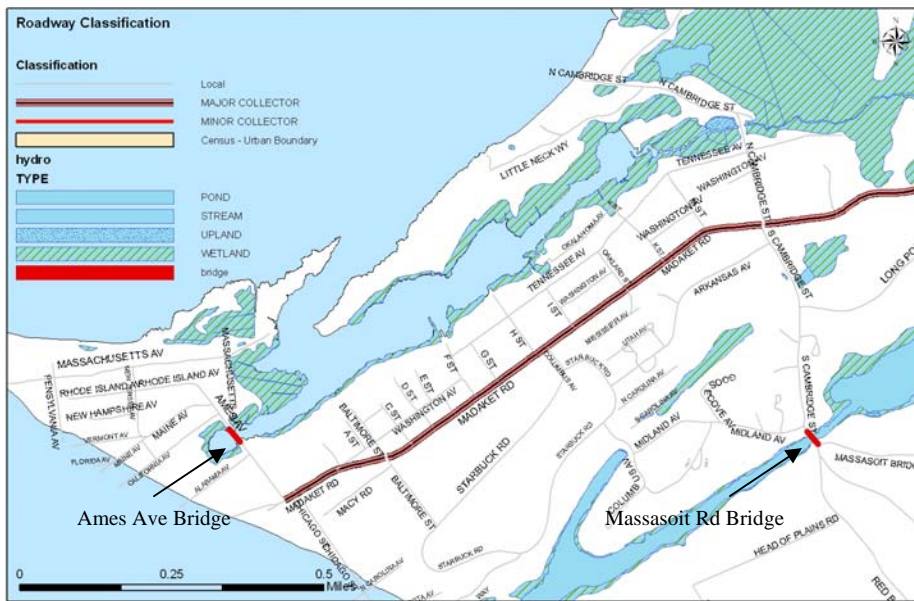
Both the SSA Wharf and the Straight Wharf are in the downtown core district, and are within close proximity to taxicabs, the Nantucket Regional Transit Authority (NRTA) shuttles, private tour buses, rental cars, rental bikes, rental mopeds, and privately operated shuttle vans (services a number of hotels located outside of the downtown core district). The downtown core district is where many of the lodging, dining and shopping attractions are located.

The Nantucket Memorial Airport is located approximately 2.5 miles from the downtown core district. The Airport is located approximately four miles from the downtown core district. Private automobiles, taxicabs, bicycles and rental cars can access the Airport. However, the Nantucket Airport Commission operates a 300-car parking lot at the Airport where there is a \$20 charge for overnight parking.

4.4.2. Commuter Park ‘n’ Ride Lots / Regional Transportation Center

(Please see the Intermodal Linkages in Section 6)

4.5. BRIDGES



Map 17. Bridges

There are two local bridges that are functionally classified as “rural local”: the Ames Avenue Hither Creek (a.k.a. Madaket Millie’s Bridge), which was originally built in 1946 and rebuilt in 1983, and the Massasoit Road Long Pond, which was built in 1981. Both of these bridges are located in Madaket on the west end of the Island. As of June 2006, the AASHTO bridge rating for the Ames Avenue Bridge is 19.6, and the Massasoit Road Bridge rating is 45.6.

4.6. FREIGHT MOVEMENT

Freight is transported to Nantucket by barge, boat, and airplane. The SSA operates up to 3 scheduled round trips daily by the freight boat; this schedule includes trips designated as “Hazardous Material” trips. This is the maximum number of trips allowed per an agreement with the Town of Barnstable on Cape Cod. The hazardous material boat is prohibited from carrying automobiles or passengers, with the exception of the driver and a helper for each truck, when transporting material classified by the United States Coast Guard as hazardous material. Non-Hazardous trucks may also be transported on the conventional service ferries.



Map 18. Designated Truck Route

Map 18 shows the truck route that is used to minimize the number of freight trucks on local streets. The route links the SSA docks with the Milestone Rotary. From the Milestone Rotary, large trucks are able to access other areas of Nantucket, such as mid-island, Airport, ‘Sconset, and Madaket areas via the collector street system.

4.7. ROADWAY GOALS AND OBJECTIVES

4.7.1. Rely upon road design and traffic control approaches that maximize public safety.

- 4.7.1.1. Consider the degree of a project’s safety improvement as a key factor in evaluating and prioritizing projects for the Transportation Improvement Program.
- 4.7.1.2. Institute a variety of traffic-calming measures to slow the speed of traffic and creating more pedestrian-friendly streets. Particularly in the mid-island area, those measures might include:

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- Convert two-way streets to single-lane, one-way streets;
 - Add on-street parking;
 - Create "bulb-outs" at major pedestrian crossings to shorten crossing distances;
 - Reduce street pavement width to add sidewalk and bike path capacity;
 - Create "islands" in collector roads to force slowing of traffic at major pedestrian crossings.

4.7.2. Accommodate the need for bulk delivery of commodities to the Island in a manner that is efficient, cost-effective, and in keeping with the character of the community.

- 4.7.2.1. Seek funding for roadway improvements along the established truck routes and collector roadways that enhance the safety and reduce traffic congestion.
- 4.7.2.2. Reclassify roadways, as needed, to a designation that resembles the appropriate classification characteristics.
- 4.7.2.3. Encourage distribution of truck-route maps for downtown Nantucket to all truck drivers when they board in Hyannis.
- 4.7.2.4. Provide a permanent harbor front facility to off-load bulk freight, such as stone and gravel, fuels, shell- and fin-fish, and the like.
- 4.7.2.5. Investigate the pros and cons of implementing time-of-day regulations for downtown deliveries.

4.7.3. Develop an equitable and enforceable means to control off-road vehicle abuses on public and private property.

- 4.7.3.1. Have the Town of Nantucket Beach Manager gather and examine data regarding the impact of vehicles in shoreline areas, gather public comment on the results of the data and incorporate the recommendations of the Beach Management Advisory Committee into any proposed regulations.

4.7.4. Manage the flow of traffic throughout the downtown area.

- 4.7.4.1. Evaluate the possible redirection of downtown streets to increase parking and reduce vehicle conflicts.

4.8. ROADWAY IMPROVEMENTS

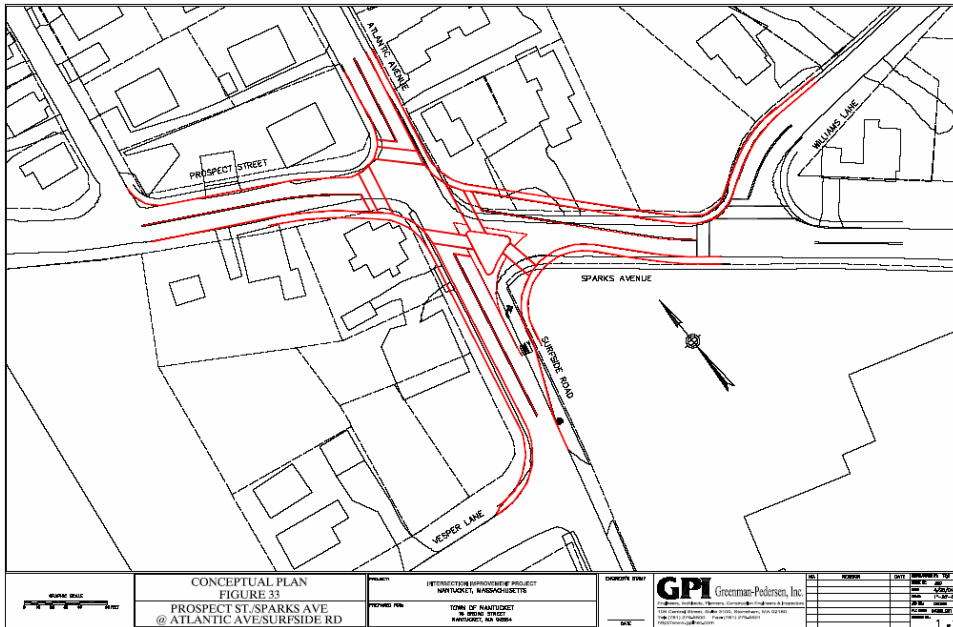
4.8.1. Intersection Improvements

The Mid-Island Traffic Study (endorsed by the NP&EDC in 2005) identified numerous intersections in the Mid-Island area with safety and congestion issues. Conceptual improvements to these intersections were developed to address these issues and are described below.

4.8.1.1. Atlantic Avenue, Sparks, and Prospect Street intersection

Status	Est. Design Cost	Est. Cost to Construct
E – Design funded, design has not been initiated	\$30,000	\$245,000 to \$290,000

Geometric deficiencies currently exist at the Four Corners intersection. This intersection has been identified in the *Mid-Island Area Plan* as a critical intersection. There have been preliminary studies to reconstruct the intersection to a modern single lane roundabout. However, due to the heavy pedestrian activity at this location given the proximity to the schools and the need for a significant amount of crossing guards, along with the necessary land takings that would be required, providing a roundabout at this location is not a viable option.

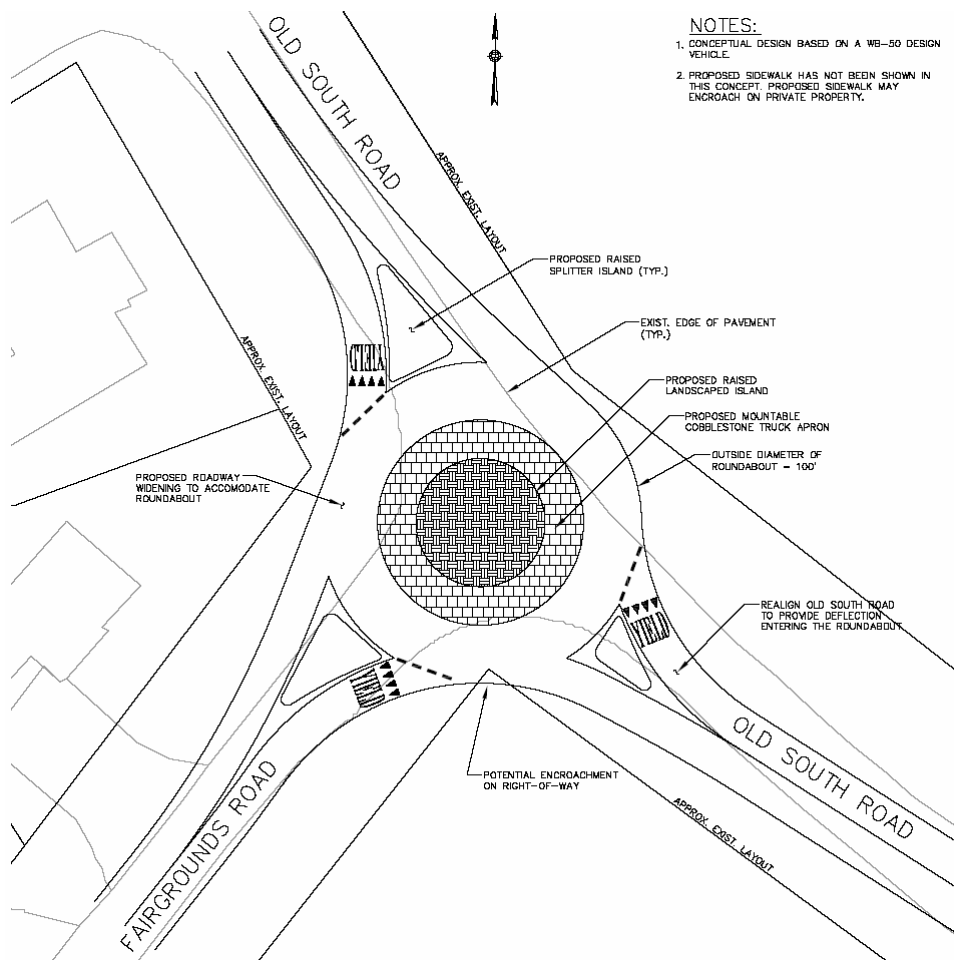


As an alternative to the roundabout, realignment of Sparks Avenue and Prospect Street to form a standard four-way intersection was evaluated. As part of this reconfiguration, on the Surfside Road northbound approach a right turn slip lane onto Sparks Avenue could be provided. Land takings will be required as part of the four-way intersection alternative. However, based on early discussions with Town officials, the anticipated land takes appear to be feasible. In addition, as part of the geometric alterations, pedestrian and bicycle access were emphasized by providing adequate crosswalks, sidewalks and signage.

4.8.1.2. Fairgrounds Road and Old South Road intersection

Status	Est. Design Cost	Est. Cost to Construct
F – Project is unfunded	\$60,000	\$500,000

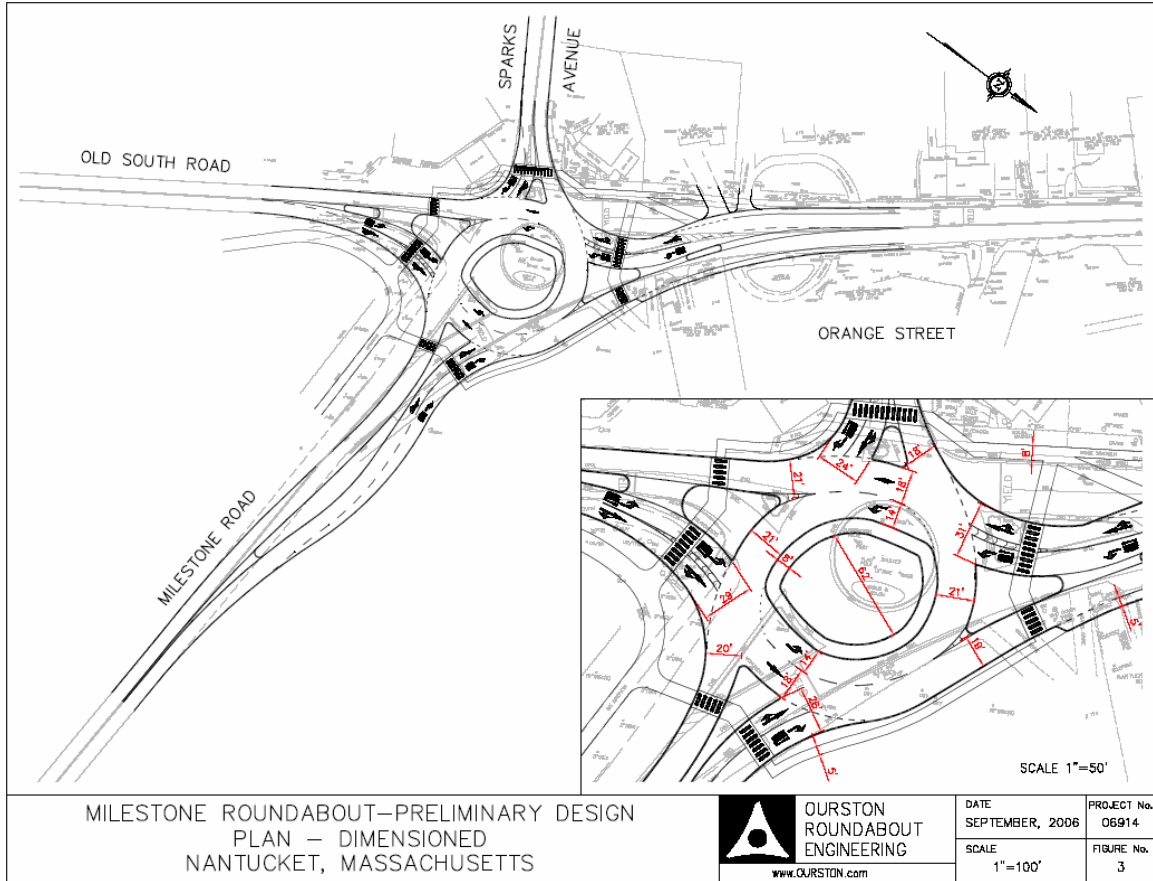
Under the existing configuration of this intersection, the Fairgrounds Road approach experiences significant delay during peak hours while utilizing 2004 and projected 2014 traffic volumes. The Old South Road approaches have little delay since they are not required to stop. Under the proposed roundabout configuration, delay along Fairgrounds Road is significantly reduced while delay along Old South Road is also reduced. All movements operate at a level-of-service (or LOS) ‘B’ or better during peak hours while utilizing 2004 traffic volumes. All movements operate at a LOS ‘C’ or better during peak hours while utilizing projected 2014 traffic volumes.



It appears that the construction of a roundabout would have right-of-way impacts to the Town’s property located to the south. Shifting the roundabout towards the Town’s property would increase the buffer from abutters to the west. The estimated construction cost for the roundabout is \$500,000 not including engineering, utility relocation or property takings.

4.8.1.3. Milestone Rotary (create a modern roundabout)

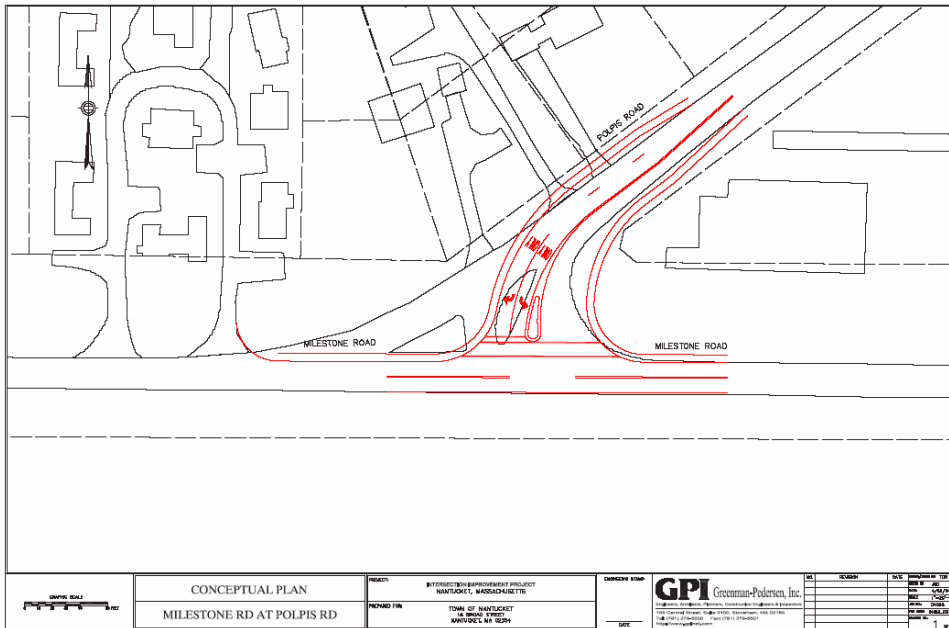
Status	Est. Design Cost	Est. Cost to Construct
F – Project is unfunded	\$55,000	\$475,000



Geometric deficiencies currently exist at the Milestone Rotary. And as recommended in the *Mid-Island Traffic Study* and the *Mid-Island Area Plan*, the NP&EDC conducted and accepted the *Roundabout Implementation Report* in September 2006, which studied the ramification of converting the current rotary to a modern roundabout. The proposed modifications would improve safety for all modes of transportation and decrease congestion from all approaches to the intersection.

4.8.1.4. Milestone Road at Polpis Road and Monomoy Road

Status	Est. Design Cost	Est. Cost to Construct
Polpis Intersection F – Project is unfunded	\$20,000	\$170,000 to \$200,000
Monomoy Intersection F - Project is unfunded	\$30,000	\$250,000 to \$300,000



Geometric deficiencies presently exist at the intersections of Milestone Road at Polpis Road and Monomoy Road. Improvements at these intersections include reconfiguring the intersections to form more traditional, 90-degree “T” intersections. This will slow the traffic both turning into and exiting from the side streets. This will also tighten the intersection and reduce the vast amount of pavement and travel ways currently in place. Separate left- and right-turn lanes will be maintained along the Polpis Road and Monomoy Road minor street approaches. As part of the reconstruction/realignment, pedestrian and bicycle amenities were emphasized by providing adequate crosswalks, sidewalks and signage.

4.8.1.5. Pleasant Street at Cherry Street, Williams Lane and Williams Street

Status	Est. Design Cost	Est. Cost to Construct
F – Project is unfunded	\$12,500	\$90,000 to \$120,000

In order to eliminate the conflict between the Williams Lane traffic and Pleasant Street traffic, the intersection should be reconfigured to form a more traditional, “T” intersection. This will slow the traffic both turning into and exiting from Williams Lane. This will also tighten the intersection and reduce the vast amount of pavement and travel ways currently in place. These improvements are recommended for both one-way and two-way flow on Pleasant Street. As part of these geometric alterations, pedestrian and bicycle access should be emphasized by providing adequate crosswalks, sidewalks and signage.

In order to enhance traffic flow along Pleasant Street a one-way scenario was analyzed. Under this scenario it is recommended that Cherry Street become a one-way street in the westbound direction, towards Pleasant Street. This would improve existing safety deficiencies at this intersection without major construction. In addition, a separate left-turn lane could be provided on the Pleasant Street westbound approach for vehicles turning onto Williams Lane. Tables 30 and 31 summarize the results of the analyses for the 2004 Existing and 2014 Design Year conditions, respectively, with the aforementioned left-turn lane on Pleasant Street for vehicles turning onto Williams Lane.

4.8.1.6. Pleasant Street at York Street and Atlantic Avenue (Five Corners)

Status	Est. Design Cost	Est. Cost to Construct
F – Project is unfunded	\$16,500	\$100,000 to \$150,000

The Pleasant Street northbound approach currently operates with capacity constraints (LOS E/F), with long vehicle delays and queues. This intersection has been identified in numerous reports as being in need of improvements. However, since this intersection is located in a historic district, providing any major improvement measures, such as a roundabout or roadway realignment, would not be feasible. Therefore, only minor radii improvements, along with pedestrian and bicycle access improvements, such as crosswalks, sidewalks and signage, could be provided at this intersection. In addition, with Pleasant Street one-way, a separate left-turn lane could be provided on the Pleasant Street northbound approach for vehicles turning onto York Street and Atlantic Avenue.