MEMORANDUM

Date: July 11, 2019 Job No.: 6486

To: T. Michael Burns, AICP – Transportation Planner

Cc: File

From: Jeff Maxtutis, AICP, Tyler de Ruiter, PE

Subject: Amelia Drive Traffic Circulation and Parking Study

BACKGROUND

In September 2017, BETA Group, Inc. (BETA) evaluated 11 intersections within the Old South Road / Milestone Road corridors on the southeastern portion of the island between the James Coffin Memorial Rotary and the Nantucket Airport. The *Old South Road Corridor Study* utilized historical traffic data at each intersection to evaluate the 2017 Existing Conditions and 2024 Future Conditions assuming a 7-year design horizon. Based on the evaluation, BETA recommended several potential design concepts to improve operations, safety, or both.

The *Old South Road Corridor Study* was updated in September 2018 to evaluate six intersections, listed below, surrounding the Amelia Drive neighborhood using traffic data collected in June and August 2018.

1. Fairgrounds Road/Ticcoma Way
2. Fairgrounds Road/Newtown Road/Public Safety Building Driveway
3. Fairgrounds Road/Old South Road
4. Old South Road/Planning Department Driveway
5. Old South Road/Amelia Drive
6. Ticcoma Way/Amelia Drive

The study examined the existing (2018) intersection operating conditions as well as 7-year (2025), 15-year (2033), and 25-year (2043) design horizons.

The Town of Nantucket has since acquired Amelia Drive as a public way and has requested that BETA assist in the evaluation of alternatives to reconfigure the roadway with the goals of improving traffic circulation and on-street parking. BETA completed the following eight tasks as part of this evaluation:

1. Evaluate Existing Conditions
2. Evaluate Future Conditions
3. Develop Reconfiguration Alternatives
4. Evaluate Alternatives
5. Public Outreach
6. Develop Preferred Alternative
7. Public Outreach
8. Compile and Present Finding

This Memorandum, Task 8, discusses the process and findings as a result of the evaluation.

EXISTING CONDITIONS

This **Amelia Drive Traffic Circulation and Parking Study** evaluates the same study area network presented in the September 2018 *Old South Road Corridor Study Update*. For consistency, this study

utilizes the same traffic volume data presented in the *Old South Road Corridor Study Update.* For a full discussion of existing conditions please see the appended *Old South Road Corridor Study Update.*

STUDY AREA

The neighborhood evaluated as part of this study includes the roadways of Amelia Drive, Ticcoma Way, Fairgrounds Road, and Old South Road. The planned but unconstructed roadway known as Waitt Drive was also included for completeness. **Figure 1** shows an overall view of the study area.

The study area roadways of Amelia Drive, Fairgrounds Road and Waitt Drive generally run southwest-northeast, while Old South Road, Ticcoma Way and Newtown Road run southeast-northwest. *For the purposes of this study, Amelia Drive, Fairgrounds Road and Waitt Drive are referenced as east-west roadways, while Old South Road, Ticcoma Way and Newtown Road are referenced as north-south roadways.*

Figure 1: Study Area

TRAFFIC DATA

The Town of Nantucket conducted intersection vehicle turning movement and classification counts in June 2018 on a weekday at the intersection of Fairgrounds Road/Old South Road. BETA collected intersection turning movement and classification counts at five of the remaining study intersections in August 2018. Raw turning movement count data sheets are available upon request.

The peak hour volumes (highest individual intersection volumes) for each intersection were used and balanced upward to represent existing condition volumes at the study intersections. The balancing smoothed out volume differences between study intersections that may be due to different count dates and peak hours. The overall composite peak hours were generally 7:15 to 8:15 AM and 4:45 to 5:45PM.

SEASONAL VARIATION

Town staff indicated that the summer period between June and September typically experiences the highest traffic volumes on the island. For this reason, no seasonal adjustments were made to the 2018 traffic volume data.

Traffic volume diagrams displaying the 2018 Existing Traffic Volumes are appended. An example of these is shown in **Figure 2**.

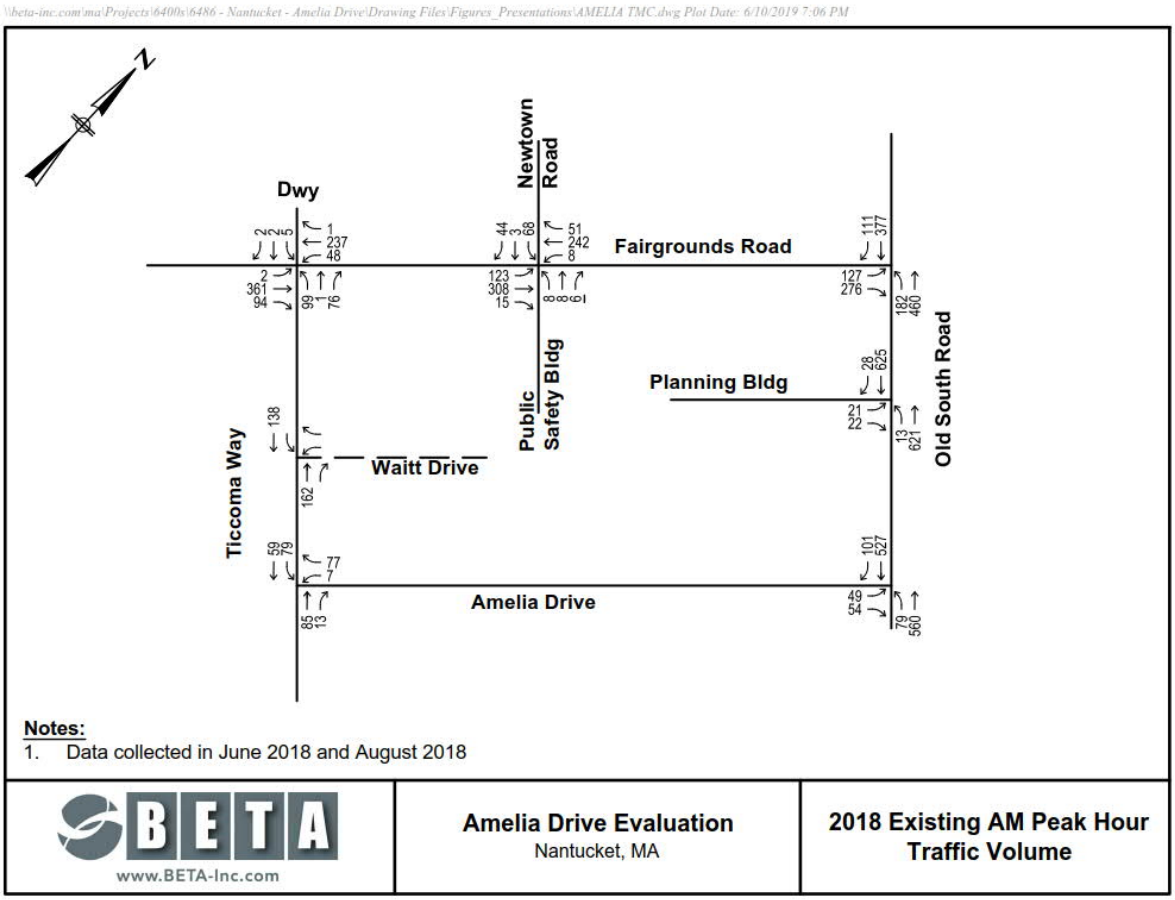


Figure 2: Example Existing Vehicle Turning Volume Diagram

The data supports that both Old South Road and Fairgrounds Road are primary corridors, with Old South Road carrying between 1,300-1,500 vehicles (both directions) and Fairgrounds Road carrying approximately 750 vehicles (both directions) in the peak hours. Overall, traffic volumes on Amelia Drive were found to be similar in the AM and PM peak hours with the roadway generally carrying around 450 vehicles in both directions.

Table 1 summarizes the entering and exiting volume for each end of Amelia Drive. Consistent with the higher traffic volume along Old South Road, the majority (60%) of vehicles enter and exit Amelia Drive on the Old South Road side. Further comparison of the turning diagrams show that more vehicles enter Amelia Drive from the north (towards Town). This is particularly evident with Ticcoma Way traffic given the characteristics of the roadway south of Amelia Drive. Exiting volume onto Old South Road was found to be split relatively evenly north and south in both peak hours, while exiting volume onto Ticcoma Way is nearly all directed north to Fairgrounds Road. While Amelia Drive carries a similar total volume in both peak hours, more vehicles (60%) were found to be entering in the AM peak hour and exiting in the PM peak hour. This traffic pattern is generally consistent with the type of commercial land uses along Old South Road.

Table 1: Summary of Amelia Drive Traffic Volumes

	AM			PM		
Via	**In[1]**	**Out[1]**	**Total**	**In[1]**	**Out[1]**	**Total**
Old South Road	180 64%	103 36%	**283** 62%	129 46%	149 54%	**278** 63%
Ticcoma Way	92 52%	84 48%	**176** 38%	52 31%	114 69%	**166** 37%
Total	272 59%	187 41%	**459**	181 41%	263 59%	**444**

[1] Total entering or exiting volume with directional distribution based on 2018 Balanced Existing volume.

TRAFFIC CAPACITY ANALYSIS

A traffic capacity analysis was performed to examine the existing operating conditions for all study area intersections. For a more detailed summary of this methodology, please see the appended September 2018 *Old South Road Corridor Study Update*.

SUMMARY OF ANALYSIS CRITERIA

In general, six Levels of Service (LOS), "A"-"F", have been established with "A" representing very good operation and "F" representing very poor operation. Level of Service is based on total delay for each turning movement, approach, or intersection. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The relationship between LOS and delay for unsignalized intersections and roundabouts are summarized in **Table 2**.

In addition to delay and level of service, the analysis examined the volume to capacity ratio (v/c) and 95th percentile queues for each lane group. Movements that experience a v/c ratio greater than 1.0 operate over capacity and therefore receive a LOS F ranking regardless of the calculated average delay.

The 95th percentile queue represents the length of vehicle queuing (in feet) that is only exceeded five percent of the evaluated peak hour.

Table 2: Level of Service Criteria

LOS	**Unsignalized Intersection and Roundabout Criteria Average Total Delay** (Seconds per Vehicle)	**General Description**
A	< 10.0	Free Flow
B	10.1 to 15.0	Stable flow (slight delays)
C	15.1 to 25.0	Stable flow (acceptable delays)
D	25.1 to 35.0	Approaching unstable flow (tolerable delay)
E	35.1 to 50.0	Unstable flow (intolerable delay)
F	> 50.0	Forced flow (jammed)

The traffic analysis model was evaluated for all approaches to each of the seven study intersections. While it is understood that in many cases left turns into side streets may experience delay while waiting for a gap, the model generally found these to operate with minimal delay and queueing. For simplicity, this evaluation will focus on controlled approaches only, that being those with Stop Signs or Yield Signs. Analysis output sheets for all analysis cases are appended to this Memorandum.

ANALYSIS RESULTS

The 2018 Existing analysis results, summarized in **Table 3**, suggest poor operating conditions for the intersection of Fairgrounds Road at Old South Road. The large volumes exiting Fairgrounds Road were found to experience LOS F delays exceeding 300 seconds (5 minutes) per vehicle in both peak hours. Field observations reveal that most vehicles do not actually experience this level of delay due to aggressive driving characteristics such as accepting smaller gaps or by drivers along Old South Road artificially widening gaps to show courtesy to Fairgrounds Road vehicles. Occasional pedestrian crossings at Old South Road can also generate gaps in traffic to further allow left turns to exit Fairgrounds Road. Under existing conditions the Fairgrounds Road approach was found to queue approximately 330 feet (±13 vehicles) in the AM peak hour and 185 feet (±7 vehicles) in the PM peak hour.

Amelia Drive entering Old South Road was also found to operate with LOS F with delays of ±57 seconds per vehicle in the AM peak hour and 91 seconds per vehicle in the PM peak hour. Queues were found to be approximately 100 (±4 vehicles) to 150 (±6 vehicles) feet in the AM and PM peak hours, respectively.

Ticcoma Way, at Fairgrounds Road, was found to operate with LOS D (34.4 seconds per vehicle) in the AM peak hour and LOS E (38.1 seconds per vehicle) in the PM peak hour with 95th percentile queues of approximately four to five vehicles.

All other approaches were found to operate with LOS D or better with queues of around one to three vehicles in both peak hours.

Table 3: 2018 Existing Level of Service Summary

INTERSECTION	AM Peak Hour				PM Peak Hour			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
1. Fairgrounds Road/Ticcoma Way								
Ticcoma - NB **(S)**	D	34.4	0.64	105	E	38.1	0.70	123
Driveway - SB **(S)**	C	21.7	0.05	< 25	C	16.9	0.05	< 25
2. Fairgrounds Road/Newtown Road/Public Safety Driveway								
Driveway - NB **(S)**	D	25.2	0.15	< 25	C	20.6	0.12	< 25
Newtown - SB **(S)**	D	34.9	0.55	75	C	21.8	0.36	40
3. Fairgrounds Road/Old South Road								
Fairgrounds - EBL **(S)**	**F**	**> 300**	**> 1.0**	330	**F**	**> 300**	**> 1.0**	185
Fairgrounds - EBR **(S)**	C	21.3	0.63	108	D	27.7	0.66	118
4. Old South Road/Planning Department Drive								
Driveway - EB **(S)**	D	31.6	0.39	43	D	29.8	0.23	< 25
5. Old South Road/Amelia Drive								
Amelia - EB **(S)**	**F**	57.6	0.67	100	**F**	91.3	0.86	150
6. Ticcoma Way/Amelia Drive								
Amelia - WB **(S)**	A	9.6	0.11	< 25	A	9.6	0.16	< 25
7. Ticcoma Way/Waitt Drive[1]								
Waitt - WB **(S)**	-	-	-	-	-	-	-	-

Legend: (S) - Stop Sign (Y) - Yield Sign

[1] Waitt Drive assumed not constructed or operational under 2018 Existing Conditions

FUTURE CONDITIONS

The future traffic conditions were evaluated assuming no changes to roadway geometry with the addition of background traffic growth including traffic from nearby developments.

BACKGROUND TRAFFIC GROWTH

Consistent with the *Old South Road Corridor Study Update,* BETA applied a 1.0% per year growth rate to the 2018 existing traffic volumes for seven (7), 15, and 25 years to represent the 2025, 2033, and 2043 future year conditions.

DEVELOPMENT TRAFFIC

Consistent with the *Old South Road Corridor Study Update*, development traffic from three nearby projects were evaluated, including: the Richmond Great Point Mixed-Use Development, the Surfside

Crossing 40B Residential Development, and the Ticcoma Green Residential Development. Please see the *Old South Road Corridor Study Update* for a detailed description of background development traffic.

Consistent with the *Old South Road Corridor Study Update* the estimated trip generation for each project was distributed onto the network based on overall traffic volume as obtained in BETA's independent *Traffic Impact and Access Study (TIAS)* for the Surfside Crossing 40B.

For the purposes of this evaluation, the Ticcoma Green trips were distributed throughout the network based on planned connections to the proposed Waitt Drive via Ticcoma Way, 4 Fairgrounds Road (Public Safety Building Driveway), 2 Fairgrounds Road (Planning Department Driveway), and Amelia Drive. This is a key difference between the Future Conditions analysis presented in this study versus that presented in the *Old South Road Corridor Study Update.*

Background development project trips were added to the grown 2018 Existing volumes to create the 2025, 2033 and 2043 Future peak hour volumes. Turning volume diagrams for the future peak hours are appended. An example of these is shown in **Figure 3**.

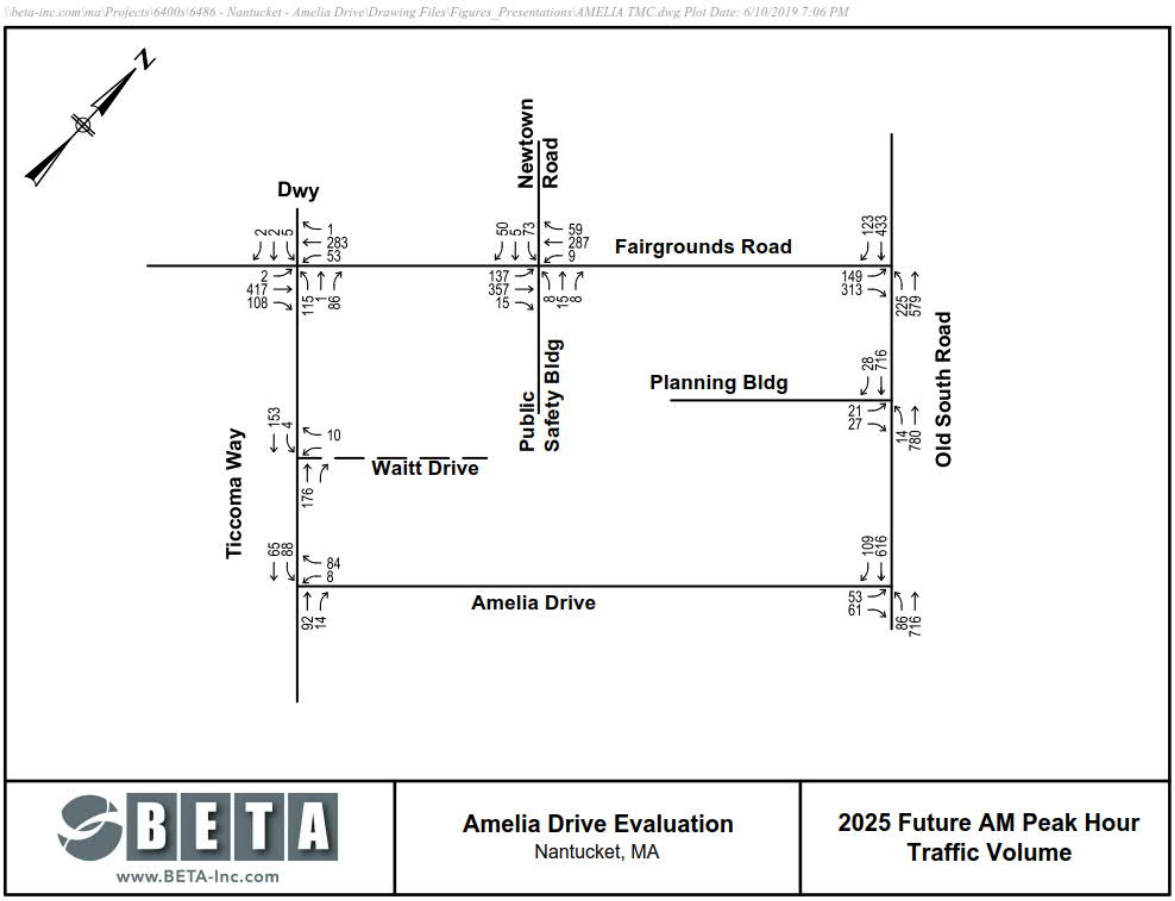


Figure 3: Example Future Vehicle Turning Volume Diagram

The background growth and development trips result in roadway volumes of between 1,800-2,050 vehicles (both directions) along Old South Road and 1,000 vehicles (both directions) on Fairgrounds Road during the 2043 Future peak hours.

TRAFFIC CAPACITY ANALYSIS

A traffic capacity analysis was performed to examine the future operating conditions for all study area intersections based on the grown traffic volumes. The methodology and criteria are explained in the Existing Conditions section of this Memorandum.

ANALYSIS RESULTS

The Future analysis results, summarized in **Table 4** and **Table 5**, show increased delays and queues for all five of the intersections along Fairgrounds Road or Old South Road. As traffic volume along the primary corridors increases, the number of gaps for vehicles decreases. An increased number of vehicles exiting the side street, in addition to few gaps on the main street results in large increases in delay and queues.

All side streets intersecting with either Fairgrounds Road or Old South Road are projected to operate with LOS F in both peak hours by Future Year 2043, several of which are projected to operate with delays greater than 300 seconds (5 minutes) per vehicle. In general, queues were found to increase approximately 200 feet per approach (±8 vehicles) due to growth from 2025 to 2043.

Since the volumes along Amelia Drive, Ticcoma Way, and Waitt Drive are much smaller than those of Old South Road and Fairgrounds Road, these intersections continue to operate under favorable conditions with minimal queueing.

Table 4: AM Peak Hour Future Year Level of Service Summary

INTERSECTIONS	2025 Future				2033 Future				2043 Future			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
1. Fairgrounds Road/Ticcoma Way												
Ticcoma - NB **(S)**	**F**	78.0	0.91	203	**F**	134.9	**> 1.0**	283	**F**	268.1	**> 1.0**	418
Driveway - SB **(S)**	D	27.2	0.07	< 25	D	31.7	0.08	< 25	E	39.6	0.10	< 25
2. Fairgrounds Road/Newtown Road/Public Safety Driveway												
Driveway - NB **(S)**	D	34.8	0.27	25	E	42.4	0.32	33	**F**	55.8	0.23	40
Newtown - SB **(S)**	**F**	76.6	0.82	145	**F**	143.0	**> 1.0**	213	**F**	**> 300**	**> 1.0**	320
3. Fairgrounds Road/Old South Road												
Fairgrounds - EBL **(S)**	**F**	**> 300**	**> 1.0**	535	**F**	**> 300**	**> 1.0**	615	**F**	**> 300**	**> 1.0**	718
Fairgrounds - EBR **(S)**	D	32.4	0.78	178	E	47.4	0.89	248	**F**	89.8	**> 1.0**	383
4. Old South Road/Planning Department Drive												
Driveway - EB **(S)**	**F**	52.4	0.57	75	**F**	70.9	0.67	93	**F**	112.5	0.83	120
5. Old South Road/Amelia Drive												
Amelia - EB **(S)**	**F**	188.3	**> 1.0**	205	**F**	**> 300**	**> 1.0**	280	**F**	**> 300**	**> 1.0**	395
6. Ticcoma Way/Amelia Drive												
Amelia - WB **(S)**	A	9.8	0.12	< 25	A	9.9	0.13	< 25	B	10.1	0.15	< 25
7. Ticcoma Way/Waitt Drive												
Waitt - WB **(S)**	A	9.3	0.01	< 25	A	9.4	0.01	< 25	A	8.9	0.01	< 25
Legend: (S) - Stop Sign (Y) - Yield Sign												

Table 5: PM Peak Hour Future Year Level of Service Summary

INTERSECTIONS	2025 Future				2033 Future				2043 Future			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
1. Fairgrounds Road/Ticcoma Way												
Ticcoma - NB **(S)**	**F**	101.0	**> 1.0**	248	**F**	171.2	**> 1.0**	338	**F**	**> 300**	**> 1.0**	483
Driveway - SB **(S)**	C	20.5	0.07	< 25	C	22.8	0.07	< 25	C	26.2	0.09	< 25
2. Fairgrounds Road/Newtown Road/Public Safety Driveway												
Driveway - NB **(S)**	D	28.0	0.20	< 25	D	32.1	0.23	< 25	E	39.9	0.27	25
Newtown - SB **(S)**	E	39.4	0.61	90	**F**	56.1	0.74	125	**F**	106.8	0.96	193
3. Fairgrounds Road/Old South Road												
Fairgrounds - EBL **(S)**	**F**	**> 300**	**> 1.0**	298	**F**	**> 300**	**> 1.0**	350	**F**	**> 300**	**> 1.0**	415
Fairgrounds - EBR **(S)**	**F**	79.9	0.99	260	**F**	133.9	**> 1.0**	385	**F**	236.9	**> 1.0**	548
4. Old South Road/Planning Department Drive												
Driveway - EB **(S)**	**F**	50.8	0.39	40	**F**	66.4	0.47	50	**F**	100.1	0.60	68
5. Old South Road/Amelia Drive												
Amelia - EB **(S)**	**F**	**> 300**	**> 1.0**	310	**F**	**> 300**	**> 1.0**	395	**F**	**> 300**	**> 1.0**	505
6. Ticcoma Way/Amelia Drive												
Amelia - WB **(S)**	A	9.8	0.18	< 25	B	10.0	0.19	< 25	B	10.2	0.22	< 25
7. Ticcoma Way/Waitt Drive												
Waitt - WB **(S)**	A	9.3	0.01	< 25	A	9.4	0.01	< 25	A	9.5	0.01	< 25
Legend: (S) - Stop Sign (Y) - Yield Sign												

ALTERNATIVE CONCEPTS

BETA evaluated four basic reconfigurations for Amelia Drive. These were then broken down to create a total of 12 alternatives, summarized below:

1. One-Way with On-Street Parking
    a. Eastbound – Parking on One Side
    b. Eastbound – Parking on Both Sides
    c. Westbound – Parking on One Side
    d. Westbound – Parking on Both Sides
2. Two-Way without On-Street Parking
3. Two-Way with On-Street Parking
    a. Parking on North Side – Centered in Right-of-Way
    b. Parking on North Side – Hold South Edge of Road
    c. Parking on Both Sides
    d. Parking On South Side – Centered in Right-of-Way
    e. Parking on South Side – Hold North Edge of Road
4. Two-Way with Bicycle Accommodation
    a. Bike Lanes and Parking Bays
    b. Multi-Use Path and Parking Bays

Conceptual plan view sketches and typical cross sections for each of these alternatives were developed and presented at the March 7th Public Outreach Meeting, discussed later. Each alternative was evaluated for impacts to parking, trees, and right-of-way (ROW) as summarized in **Table 6**.

Table 6: Summary of Alternatives

Alternative		Parking Spaces	Trees	ROW Impacts
EX	Existing Conditions	43	42	None
1A	One-Way East - Parking on One Side	42	42	None
1B	One-Way East - Parking on Both Sides	84	8	1' each sides
1C	One-way West - Parking on One Side	43	42	None
1D	One-way West - Parking on Both Sides	85	8	1' each side
2	Two-Way - No Parking	0	42	None
3A	Two-way - Parking on North Side (Centered in ROW)	35	5	3.5' each side
3B	Two-way - Parking on North Side (Hold South Edge of Road)	35	30	6' North side
3C	Two-way - Parking on Both Sides	70	9	7' each side
3D	Two-way - Parking on South Side (Centered in ROW)	35	6	3.5' each side
3E	Two-way - Parking on South Side (Hold North Edge of Road)	35	21	7' South side
4A	Two-Way with Bike Lanes and Parking	35	0	10' each side
4B	Two-Way with Multi-Use Path	35	0	10' each side

ALTERNATIVE 1 - ONE-WAY WITH ON-STREET PARKING

Since Amelia Drive does not provide sufficient width for two-way traffic and on-street parking, one-way conditions were explored. Converting the roadway to one-way would reduce the number of vehicle, pedestrian, and bicycle conflicts associated with two-way traffic traveling against each other. The configuration would reduce intersection conflicts at the entrance end of Amelia Drive but increase volumes at the exit end of the roadway increasing queues and delays. Two example images of Alternative 1 concepts are shown in **Figure 4**.

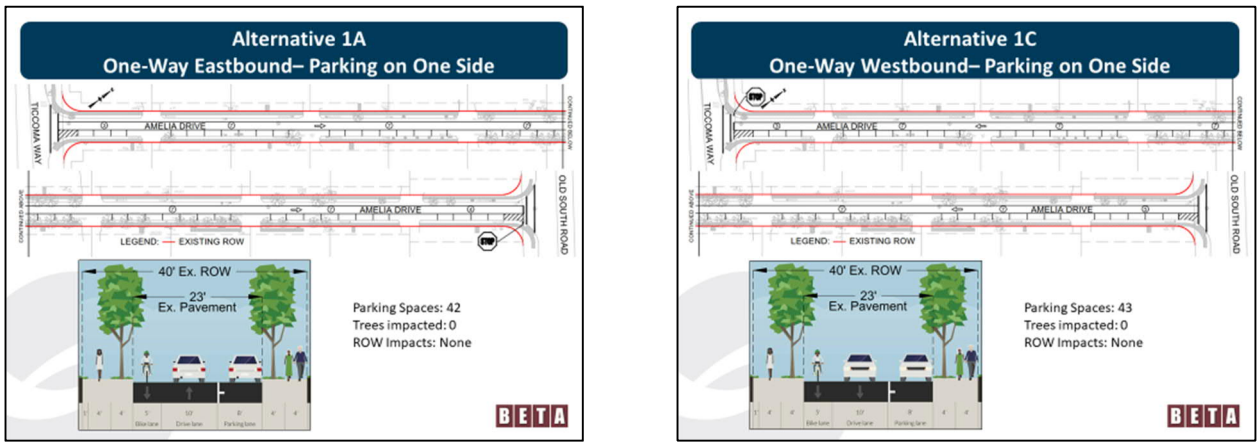


Figure 4: Graphics of Alternative 1

Alternative 1A and 1C provide parking along the south side of the roadway as the roadway currently operates today. A benefit to this configuration is that it can be obtained within the existing 23 foot roadway width with minimal impact to the existing right-of-way or building frontages. Alternative 1B and 1D double the parking supply by widening the roadway, at the expense of street trees and right-of-way, to provide parking on both sides.

TRAFFIC REASSIGNMENT

Without additional data it is not possible to determine how many vehicles travel in one end of Amelia and out the other. For these purposes, both one-way scenarios were evaluated by reassigning traffic volume throughout the study network assuming all vehicles entering and exiting Amelia Drive originate from or destine to some land use on the roadway. It was generally assumed that vehicles coming from the north (Town, Fairgrounds, Surfside, etc.) would utilize Fairgrounds Road. In the One-Way Eastbound Alternative, vehicles coming from the south via Old South Road were split assuming 66% of vehicles would utilize Youngs Way and 34% would utilize Waitt Drive via the 2 Fairgrounds driveway connection. For the One-Way Westbound Alternative, vehicles coming from the south via Ticcoma Way were split assuming 34% would utilize Youngs Way and 66% would utilize Waitt Drive and the 2 Fairgrounds driveway connection. For simplicity, no other use of any connecting roadways or driveways were assumed as part of this redistribution. This provides a conservative analysis for key intersections such as Ticcoma Way at Fairgrounds Road and Amelia Drive at Old South Road. It is likely that given the availability of additional driveways or roadways some vehicles routes will change depending on real-time traffic conditions.

An example of the trip assignment for the 2025 AM Peak Hour is shown in **Figure 5**. For reference, green numbering represents added volume to movements, while red numbering represents removed volume from movements. Volume redistribution figures are appended to this Memorandum.

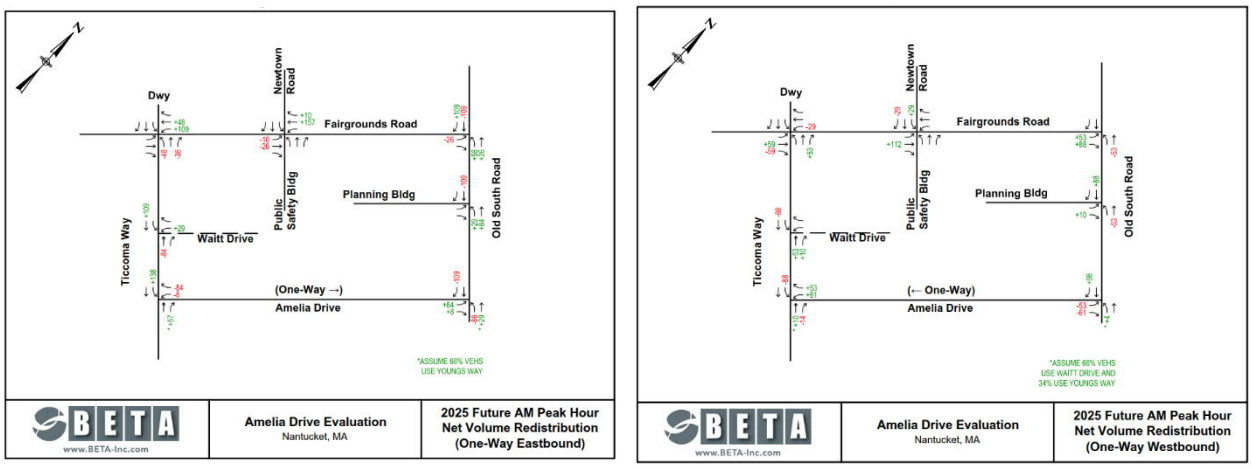


Figure 5: Examples of One-Way Traffic Volume Redistributing

The 2025, 2033, and 2043 Future One-Way peak hour volumes were developed by assigning the redistributed traffic to the respective future years presented above. The resulting figures are appended for reference.

TRAFFIC CAPACITY ANALYSIS

A traffic capacity analysis was performed to examine the future operating conditions for all study area intersections based on the reassigned one-way volumes. The methodology and criteria were explained in the Existing Conditions section of this memorandum.

Level of Service (LOS) summary tables for the 2025, 2033, and 2043 AM Peak Hours are provided in **Table 7**, **Table 8**, and **Table 9**; similar tables for the PM Peak Hours are provided in **Table 10**, **Table 11**, and **Table 12**. The tables compare the Future (Two-Way), One-Way Eastbound, and One-Way Westbound conditions for a common peak hour and future year. The Future Two-Way analysis results are the same as presented in previous sections of this Memorandum.

The overall change in delays and queues are generally consistent with the reassignment of traffic volume. Movements or approaches with reassigned volume increase in delay and queue, while those where volume was relocated see decreased delays and queues. Despite the changes in volume, all side streets entering the main roads of Fairgrounds Road and Old South Road continue to operate at LOS F or near LOS F conditions in all three Future years for both peak hours. The intersections of Ticcoma Way at Waitt Drive and Amelia Drive generally operate with LOS B or better due to the significantly smaller volumes using these intersections.

Table 7: 2025 Future AM Peak Hour Level of Service Summary

INTERSECTIONS	Two-Way				One-Way Eastbound				One-Way Westbound			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
1. Fairgrounds Road/Ticcoma Way												
Ticcoma - NB **(S)**	**F**	101.0	**> 1.0**	248	**F**	171.2	**> 1.0**	338	**F**	**> 300**	**> 1.0**	483
Driveway - SB **(S)**	D	27.2	0.07	< 25	E	45.9	0.12	< 25	D	29.5	0.08	< 25
2. Fairgrounds Road/Newtown Road/Public Safety Driveway												
Driveway - NB **(S)**	D	34.8	0.27	25	E	45.7	0.34	35	E	43.2	0.33	33
Newtown - SB **(S)**	**F**	76.6	0.82	145	**F**	149.8	**> 1.0**	205	**F**	261.2	**> 1.0**	260
3. Fairgrounds Road/Old South Road												
Fairgrounds - EBL **(S)**	**F**	**> 300**	**> 1.0**	535	**F**	**> 300**	**> 1.0**	475	**F**	**> 300**	**> 1.0**	730
Fairgrounds - EBR **(S)**	D	32.4	0.78	178	D	26.1	0.72	148	**F**	68.1	**> 1.0**	350
4. Old South Road/Planning Department Drive												
Driveway - EB **(S)**	**F**	52.4	0.57	75	**F**	58.1	0.60	80	**F**	64.0	0.69	100
5. Old South Road/Amelia Drive												
Amelia - EB **(S)**	**F**	188.3	**> 1.0**	205	**F**	**> 300**	**> 1.0**	415	-	-	-	-
6. Ticcoma Way/Amelia Drive												
Amelia - WB **(S)**	A	9.8	0.12	< 25	-	-	-	-	B	10.7	0.26	28
7. Ticcoma Way/Waitt Drive												
Waitt - WB **(S)**	A	9.3	0.01	< 25	B	10.7	0.06	< 25	A	9.7	0.01	< 25
Legend: (S) - Stop Sign (Y) - Yield Sign												

Table 8: 2033 Future AM Peak Hour Level of Service Summary

INTERSECTIONS	Two-Way				One-Way Eastbound				One-Way Westbound			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
1. Fairgrounds Road/Ticcoma Way												
Ticcoma - NB **(S)**	**F**	134.9	**> 1.0**	283	**F**	218.1	**> 1.0**	230	**F**	152.2	**> 1.0**	360
Driveway - SB **(S)**	D	31.7	0.08	< 25	**F**	58.6	0.15	< 25	E	35.2	0.09	< 25
2. Fairgrounds Road/Newtown Road/Public Safety Driveway												
Driveway - NB **(S)**	E	42.4	0.32	33	**F**	58.7	0.41	43	**F**	54.4	0.39	40
Newtown - SB **(S)**	**F**	143.0	**> 1.0**	213	**F**	290.3	**> 1.0**	288	**F**	> 300	**> 1.0**	343
3. Fairgrounds Road/Old South Road												
Fairgrounds - EBL **(S)**	**F**	**> 300**	**> 1.0**	615	**F**	**> 300**	**> 1.0**	545	**F**	**> 300**	**> 1.0**	830
Fairgrounds - EBR **(S)**	E	47.4	0.89	248	E	35.1	0.82	203	**F**	114.6	**> 1.0**	490
4. Old South Road/Planning Department Drive												
Driveway - EB **(S)**	**F**	70.9	0.67	93	**F**	84.1	0.72	103	**F**	89.1	0.80	125
5. Old South Road/Amelia Drive												
Amelia - EB **(S)**	**F**	**> 300**	**> 1.0**	280	**F**	**> 300**	**> 1.0**	533	-	-	-	-
6. Ticcoma Way/Amelia Drive												
Amelia - WB **(S)**	A	9.9	0.13	< 25	-	-	-	-	B	10.8	0.28	30
7. Ticcoma Way/Waitt Drive												
Waitt - WB **(S)**	A	9.4	0.01	< 25	B	11.0	0.07	< 25	A	9.8	0.01	< 25
Legend: (S) - Stop Sign (Y) - Yield Sign												

Table 9: 2043 Future AM Peak Hour Level of Service Summary

INTERSECTIONS	Two-Way				One-Way Eastbound				One-Way Westbound			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
1. Fairgrounds Road/Ticcoma Way												
Ticcoma - NB **(S)**	**F**	268.1	**> 1.0**	418	**F**	**> 300**	**> 1.0**	330	**F**	282.9	**> 1.0**	520
Driveway - SB **(S)**	E	39.6	0.10	< 25	**F**	84.3	0.21	< 25	E	46.8	0.12	< 25
2. Fairgrounds Road/Newtown Road/Public Safety Driveway												
Driveway - NB **(S)**	**F**	55.8	0.23	40	**F**	87.3	0.53	58	**F**	79.6	0.50	28
Newtown - SB **(S)**	**F**	**> 300**	**> 1.0**	320	**F**	**> 300**	**> 1.0**	405	**F**	**> 300**	**> 1.0**	455
3. Fairgrounds Road/Old South Road												
Fairgrounds - EBL **(S)**	**F**	**> 300**	**> 1.0**	718	**F**	**> 300**	**> 1.0**	633	**F**	**> 300**	**> 1.0**	960
Fairgrounds - EBR **(S)**	**F**	89.8	**> 1.0**	383	**F**	60.5	0.96	310	**F**	202.7	**> 1.0**	718
4. Old South Road/Planning Department Drive												
Driveway - EB **(S)**	**F**	112.5	0.83	120	**F**	152.0	0.94	140	**F**	153.4	**1.00**	165
5. Old South Road/Amelia Drive												
Amelia - EB **(S)**	**F**	**> 300**	**> 1.0**	395	**F**	**> 300**	**> 1.0**	683	-	-	-	-
6. Ticcoma Way/Amelia Drive												
Amelia - WB **(S)**	B	10.1	0.15	< 25	-	-	-	-	B	11.6	0.33	35
7. Ticcoma Way/Waitt Drive												
Waitt - WB **(S)**	A	8.9	0.01	< 25	B	11.5	0.08	< 25	B	10.0	0.02	< 25
Legend: (S) - Stop Sign (Y) - Yield Sign												

Table 10: 2025 Future PM Peak Hour Level of Service Summary

INTERSECTIONS	Two-Way				One-Way Eastbound				One-Way Westbound			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
1. Fairgrounds Road/Ticcoma Way												
Ticcoma - NB **(S)**	**F**	101.0	**> 1.0**	248	**F**	70.4	0.69	98	**F**	127.1	**> 1.0**	355
Driveway - SB **(S)**	C	20.5	0.07	< 25	D	30.9	0.10	< 25	C	22.5	0.07	< 25
2. Fairgrounds Road/Newtown Road/Public Safety Driveway												
Driveway - NB **(S)**	D	28.0	0.20	< 25	E	37.1	0.26	25	D	32.9	0.23	< 25
Newtown - SB **(S)**	E	39.4	0.61	90	**F**	75.8	0.81	143	**F**	82.4	0.84	148
3. Fairgrounds Road/Old South Road												
Fairgrounds - EBL **(S)**	**F**	**> 300**	**> 1.0**	298	**F**	**> 300**	**> 1.0**	250	**F**	**> 300**	**> 1.0**	535
Fairgrounds - EBR **(S)**	**F**	79.9	0.99	260	**F**	62.4	0.92	245	**F**	126.4	**> 1.0**	398
4. Old South Road/Planning Department Drive												
Driveway - EB **(S)**	**F**	50.8	0.39	40	**F**	61.9	0.45	48	E	47.8	0.43	48
5. Old South Road/Amelia Drive												
Amelia - EB **(S)**	**F**	**> 300**	**> 1.0**	310	**F**	**> 300**	**> 1.0**	657	-	-	-	-
6. Ticcoma Way/Amelia Drive												
Amelia - WB **(S)**	A	9.8	0.18	< 25	-	-	-	-	B	11.0	0.36	40
7. Ticcoma Way/Waitt Drive												
Waitt - WB **(S)**	A	9.3	0.01	< 25	B	10.1	0.04	< 25	A	9.8	0.01	< 25
Legend: (S) - Stop Sign (Y) - Yield Sign												

Table 11: 2033 Future PM Peak Hour Level of Service Summary

INTERSECTIONS	Two-Way				One-Way Eastbound				One-Way Westbound			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
1. Fairgrounds Road/Ticcoma Way												
Ticcoma - NB **(S)**	**F**	171.2	**> 1.0**	338	**F**	117.5	0.88	138	**F**	208.9	**> 1.0**	48
Driveway - SB **(S)**	C	22.8	0.07	< 25	E	36.8	0.12	< 25	D	25.6	0.08	< 25
2. Fairgrounds Road/Newtown Road/Public Safety Driveway												
Driveway - NB **(S)**	D	32.1	0.23	< 25	E	45.3	0.30	30	E	39.3	0.27	25
Newtown - SB **(S)**	**F**	56.1	0.74	125	**F**	131.5	**> 1.0**	200	**F**	143.2	**> 1.0**	208
3. Fairgrounds Road/Old South Road												
Fairgrounds - EBL **(S)**	**F**	**> 300**	**> 1.0**	350	**F**	**> 300**	**> 1.0**	300	**F**	**> 300**	**> 1.0**	615
Fairgrounds - EBR **(S)**	**F**	133.9	**> 1.0**	385	**F**	102.5	**> 1.0**	338	**F**	201.0	**> 1.0**	530
4. Old South Road/Planning Department Drive												
Driveway - EB **(S)**	**F**	66.4	0.47	50	**F**	86.9	0.55	63	**F**	61.9	0.51	60
5. Old South Road/Amelia Drive												
Amelia - EB **(S)**	**F**	**> 300**	**> 1.0**	395	**F**	**> 300**	**> 1.0**	785	-	-	-	-
6. Ticcoma Way/Amelia Drive												
Amelia - WB **(S)**	B	10.0	0.19	< 25	-	-	-	-	B	11.9	0.41	53
7. Ticcoma Way/Waitt Drive												
Waitt - WB **(S)**	A	9.4	0.01	< 25	B	10.2	0.05	< 25	A	9.9	0.01	< 25
Legend: (S) - Stop Sign (Y) - Yield Sign												

Table 12: 2043 Future PM Peak Hour Level of Service Summary

INTERSECTIONS	Two-Way				One-Way Eastbound				One-Way Westbound			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
1. Fairgrounds Road/Ticcoma Way												
Ticcoma - NB **(S)**	**F**	**> 300**	**> 1.0**	483	**F**	246.9	**> 1.0**	205	**F**	**> 300**	**> 1.0**	670
Driveway - SB **(S)**	C	26.2	0.09	< 25	E	46.8	0.16	< 25	D	30.9	0.10	< 25
2. Fairgrounds Road/Newtown Road/Public Safety Driveway												
Driveway - NB **(S)**	E	39.9	0.27	25	**F**	62.1	0.39	40	**F**	51.4	0.34	33
Newtown - SB **(S)**	**F**	106.8	0.96	193	**F**	272.4	**> 1.0**	293	**F**	292.1	**> 1.0**	300
3. Fairgrounds Road/Old South Road												
Fairgrounds - EBL **(S)**	**F**	**> 300**	**> 1.0**	415	**F**	**	**	**	**F**	**> 300**	**> 1.0**	713
Fairgrounds - EBR **(S)**	**F**	236.9	**> 1.0**	548	**F**	190.5	**> 1.0**	493	**F**	**> 300**	**> 1.0**	725
4. Old South Road/Planning Department Drive												
Driveway - EB **(S)**	**F**	100.1	0.60	68	**F**	149.1	0.75	85	**F**	93.5	0.65	80
5. Old South Road/Amelia Drive												
Amelia - EB **(S)**	**F**	**> 300**	**> 1.0**	505	**F**	**> 300**	**> 1.0**	943	-	-	-	-
6. Ticcoma Way/Amelia Drive												
Amelia - WB **(S)**	B	10.2	0.22	< 25	-	-	-	-	B	12.6	0.46	63
7. Ticcoma Way/Waitt Drive												
Waitt - WB **(S)**	A	9.5	0.01	< 25	B	10.5	0.06	< 25	B	10.1	0.01	< 25
Legend: (S) - Stop Sign (Y) - Yield Sign ** Delay exceeds program limitations; cannot be analyzed												

Alternative 2 – Two-Way without On-Street Parking

This alternative, **Figure 6**, maintains the existing 23-foot roadway width to provide one travel lane in each direction, but removes all on-street parking. While there are no impacts to trees or right-of-way, all of the parking is removed, requiring any area parking to occur via at off-street parking lots or the proposed public lots on Waitt Drive.

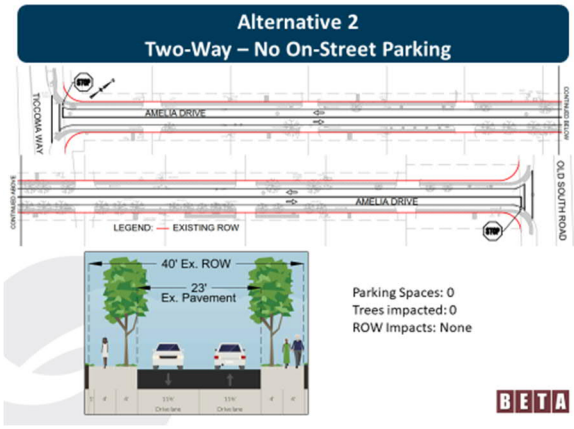


Figure 6: Example of Alternative 2

Alternative 3 – Two-Way with On-Street Parking

This alternative (**Figure 7**) explores various ways to maintain two-way traffic and on-street parking along Amelia Drive. Alternatives 3A, 3B, 3D, and 3E explore providing on-street parking on one side of the street only, while Alternative 3C explores providing on-street parking for both sides of the roadway. In all cases, the roadway would be widened to accommodate the parking. This allows parking bays to be provided rather than the existing curbside parking style, which can improve sight line conditions for vehicles exiting driveways. They also define where vehicles should park, such that vehicles do not creep into and block driveways. Disadvantages to the parking bays include the removal of trees and impacts to right-of-way.

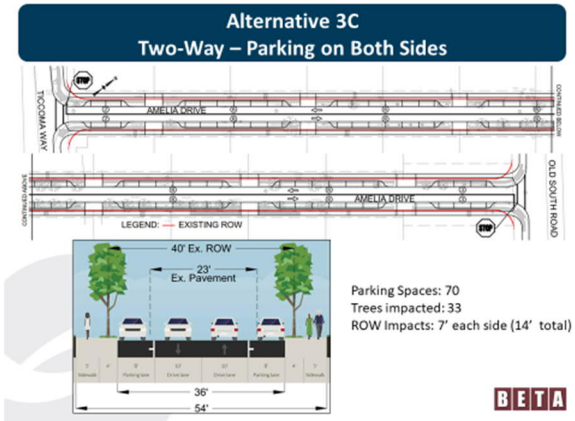


Figure 7: Example of Alternative 3

Alternative 4 – Two-Way with Parking and Bicycle Accommodation

Two methods of providing bicycle accommodation, displayed in **Figure 8**, were explored under this alternative. Alternative 4A utilizes traditional bike lanes separating a narrow travel lane and a parking lane for each direction. This requires nearly doubling the pavement width of Amelia Drive, resulting in removal of trees and impacts to right-of-way. Alternative 4B accommodates bicycles by means of a two-way multi-use path on one side of the roadway with on-street parking on the other. Under this alternative the roadway with increases slightly, impacting trees on one side of the roadway. The multi-use path and sidewalks would impact right-of-way and some trees.

Figure 8: Examples of Alternative 4

ROUNDABOUT EVALUATION

As part of the *Old South Road Corridor Study Update* the intersections of Old South Road at Fairgrounds Road and Amelia Drive were evaluated for roundabout configurations. The methodology for evaluating roundabout capacity analysis is consistent with that presented in the *Old South Road Corridor Study Update.* Roundabout Level of Service (LOS) follows the same delay criteria presented in **Table 2**.

FAIRGROUNDS ROAD MODERN ROUNDABOUT

The Fairgrounds Road intersection was recommended as a single lane modern roundabout with an additional small right turn lane for the Fairgrounds Road approach. This roundabout configuration was evaluated for the AM and PM peak hour traffic volumes during the three future years (2025, 2033, and 2043) based on the three Amelia Drive roadway configurations discussed above: Two-Way, One-Way Eastbound, and One-Way Westbound. **Table 13** and **Table 14** provide a summary of AM Peak Hour and PM Peak Hour operating conditions for the Fairgrounds Road roundabout.

Installing a roundabout configuration requires all approaches yield to circle traffic. This breaks up main street flow and generally provides more gaps for side street traffic to enter the main street. However, the yield condition generates delay for main street vehicles that previously did not exist. Roundabouts typically operate best when the approach volumes are balanced.

In the AM Peak Hour, the northbound traffic on Old South Road is heavier which generates significant queueing, particularly in the 2043 design year (+2,000 feet). The One-Way Westbound Alternative was found to have slightly better operations as some northbound Old South Road vehicles are relocated as Fairgrounds Road left turns. Similarly, the One-Way Eastbound condition degrades conditions as Fairgrounds Road turns are relocated as Old South Road northbound through vehicles.

In the PM Peak Hour, the southbound traffic on Old South Road is heavier which generates significant queueing (±1,300-2,700 feet). These long queues would extend to the Coffin Memorial Rotary, which currently experiences significant queueing on its own. Similar to the AM Peak Hour, the One-Way Eastbound condition generates increased delays and queues due to the reassigned volume through this intersection.

Table 13: Fairgrounds Road Roundabout AM Peak Hour Level of Service Summary

INTERSECTION/ ALTERNATIVE	2025 Future				2033 Future				2042 Future			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
3. Fairgrounds Road/Old South Road (Roundabout) - Two-Way												
Old South - NB (Y)	D	30.8	0.91	945	E	51.6	0.99	1,383	F	80.4	> 1.0	2,140
Old South - SB (Y)	B	13.5	0.65	207	C	16.1	0.71	291	C	20.1	0.79	429
Fairgrounds - EBL (Y)	A	7.3	0.25	25	A	7.9	0.28	28	A	8.9	0.32	33
Fairgrounds - EBR (Y)	B	10.4	0.48	77	B	11.9	0.53	99	B	14.8	0.62	133
OVERALL	**C**	**19.8**	**0.91**	**945**	**D**	**27.5**	**0.99**	**1,383**	**F**	**43.7**	**> 1.0**	**2,140**
3. Fairgrounds Road/Old South Road (Roundabout) - One-Way Eastbound												
Old South - NB (Y)	E	39.6	0.97	1,369	F	61.5	> 1.0	2,090	F	103.0	> 1.0	2,869
Old South - SB (Y)	C	16.1	0.70	256	C	19.8	0.77	350	C	25.0	0.84	501
Fairgrounds - EBL (Y)	A	5.9	0.18	< 25	A	6.2	0.20	< 25	A	6.7	0.23	< 25
Fairgrounds - EBR (Y)	A	8.6	0.42	55	A	9.6	0.48	78	B	11.3	0.54	108
OVERALL	**C**	**24.8**	**0.97**	**1,369**	**F**	**36.0**	**> 1.0**	**2,090**	**F**	**56.6**	**> 1.0**	**2,869**
3. Fairgrounds Road/Old South Road (Roundabout) - One-Way Westbound												
Old South - NB (Y)	D	33.9	0.92	847	F	52.5	> 1.0	1,313	F	92.2	> 1.0	1,952
Old South - SB (Y)	B	13.5	0.65	207	C	16.1	0.71	291	C	19.8	0.79	424
Fairgrounds - EBL (Y)	A	8.5	0.33	36	A	9.4	0.37	44	B	10.9	0.43	59
Fairgrounds - EBR (Y)	B	13.7	0.61	141	C	17.0	0.69	191	C	24.2	0.80	285
OVERALL	**C**	**20.7**	**0.92**	**847**	**F**	**29.2**	**> 1.0**	**1,313**	**F**	**46.8**	**> 1.0**	**1,952**
Legend: (Y) - Yield Sign												

Table 14: Fairgrounds Road Roundabout PM Peak Hour Level of Service Summary

INTERSECTION/ ALTERNATIVE	2025 Future				2033 Future				2042 Future			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
3. Fairgrounds Road/Old South Road (Roundabout) - Two-Way												
Old South - NB **(Y)**	B	12.1	0.67	164	B	14.0	0.72	197	C	17.8	0.80	302
Old South - SB **(Y)**	**F**	50.9	**> 1.0**	1,340	**F**	80.2	**> 1.0**	1,843	**F**	134.2	**> 1.0**	2,676
Fairgrounds - EBL **(Y)**	A	7.3	0.15	< 25	A	7.3	0.16	< 25	A	7.3	0.18	< 25
Fairgrounds - EBR **(Y)**	B	14.4	0.54	86	C	15.3	0.57	98	C	16.4	0.61	115
OVERALL	**F**	**28.9**	**> 1.0**	**1,340**	**F**	**42.6**	**> 1.0**	**1,843**	**F**	**67.5**	**> 1.0**	**2,676**
3. Fairgrounds Road/Old South Road (Roundabout) - One-Way Eastbound												
Old South - NB **(Y)**	B	9.3	0.75	237	C	18.3	0.81	307	D	25.8	0.90	448
Old South - SB **(Y)**	**F**	63.6	**>1.0**	1,663	**F**	135.0	**> 1.0**	2,339	**F**	207.6	**> 1.0**	3,305
Fairgrounds - EBL **(Y)**	A	0.3	0.09	< 25	A	5.6	0.10	< 25	A	5.6	0.11	< 25
Fairgrounds - EBR **(Y)**	B	2.6	0.46	68	B	11.4	0.49	78	B	11.9	0.52	91
OVERALL	**F**	**43.4**	**>1.0**	**1,663**	**F**	**65.0**	**> 1.0**	**2,339**	**F**	**98.0**	**> 1.0**	**3,305**
3. Fairgrounds Road/Old South Road (Roundabout) - One-Way Westbound												
Old South - NB **(Y)**	B	12.6	0.66	185	B	14.9	0.72	309	C	19.5	0.80	518
Old South - SB **(Y)**	**F**	50.6	**>1.00**	1,340	**F**	81.6	**> 1.0**	1,855	**F**	136.0	**> 1.0**	2,692
Fairgrounds - EBL **(Y)**	A	9.0	0.28	28	A	9.2	0.30	30	A	9.4	0.32	34
Fairgrounds - EBR **(Y)**	C	17.2	0.62	117	C	18.8	0.66	138	C	20.8	0.71	167
OVERALL	**F**	**29.2**	**>1.00**	**1,340**	**F**	**43.2**	**> 1.0**	**1,855**	**F**	**67.9**	**> 1.0**	**2,692**
Legend: (Y) - Yield Sign												

AMELIA DRIVE MINI-ROUNDABOUT

A mini-roundabout was evaluated due to the limited space at Old South Road's intersection with Amelia Drive. This would provide a mountable center island that large vehicles would drive over, while smaller passenger cars would travel around the circle. A summary of Level of Service (LOS) is provided in **Table 15** which includes both AM and PM peak hours for the Two-Way Alternative and One-Way Eastbound Alternative. Conditions were not analyzed for the One-Way Westbound alternative as no volume would be exiting Amelia Drive. In that scenario no geometric changes would be required at the intersection.

As shown in the table, the intersection would operate with LOS C or better during the AM peak hour in all three Future years. The One-Way condition reveals longer queues for the Old South Road northbound approach as more vehicles are exiting Amelia Drive.

In the PM peak hour, the southbound approach queues up to 1,300 feet with LOS E conditions in the 2043 Future Year. With the One-Way Eastbound configuration the Old South Road southbound approach improves due to reduced southbound volume previously turning right into Amelia Drive. However, the northbound approach experiences slightly increased delays and queues.

Table 15: Amelia Drive Mini-Roundabout Level of Service Summary

INTERSECTION/ ALTERNATIVE	2025 Future				2033 Future				2043 Future			
	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue	LOS	Delay (s/veh)	v/c	95%ile Queue
AM PEAK HOUR												
6. Amelia Drive/Old South Road (Mini-Roundabout) - Two-Way												
Old South - NB **(Y)**	B	12.7	0.70	210	B	14.8	0.76	261	C	19.1	0.83	364
Old South - SB **(Y)**	B	13.0	0.70	193	C	15.5	0.76	240	C	20.9	0.85	466
Amelia - EB **(Y)**	A	8.2	0.21	< 25	A	9.0	0.24	25	B	10.5	0.29	31
OVERALL	**B**	**12.5**	**0.70**	**210**	**B**	**14.7**	**0.76**	**261**	**C**	**19.3**	**0.85**	**466**
6. Amelia Drive/Old South Road (Mini-Roundabout) - One-Way Eastbound												
Old South - NB **(Y)**	B	14.5	0.73	280	C	17.7	0.79	482	C	24.7	0.87	837
Old South - SB **(Y)**	A	8.5	0.54	122	A	9.3	0.59	143	B	10.5	0.64	180
Amelia - EB **(Y)**	B	11.0	0.39	50	B	12.8	0.44	62	C	15.9	0.53	80
OVERALL	**B**	**11.6**	**0.73**	**280**	**B**	**13.6**	**0.79**	**482**	**C**	**17.8**	**0.87**	**837**
PM PEAK HOUR												
6. Amelia Drive/Old South Road (Mini-Roundabout) - Two-Way												
Old South - NB **(Y)**	B	12.6	0.70	197	B	14.7	0.75	244	C	19.1	0.83	334
Old South - SB **(Y)**	C	17.9	0.81	323	C	23.0	0.88	435	E	35.6	0.96	1,303
Amelia - EB **(Y)**	B	10.9	0.29	31	B	12.4	0.34	37	C	15.1	0.41	48
OVERALL	**C**	**15.1**	**0.81**	**323**	**C**	**18.6**	**0.88**	**435**	**D**	**27.0**	**0.96**	**1,303**
6. Amelia Drive/Old South Road (Mini-Roundabout) - One-Way Eastbound												
Old South - NB **(Y)**	C	16.0	0.75	379	C	20.2	0.82	569	D	30.5	0.91	933
Old South - SB **(Y)**	B	11.2	0.67	210	B	12.7	0.72	260	C	15.3	0.78	361
Amelia - EB **(Y)**	C	17.5	0.55	86	C	22.2	0.64	110	D	33.3	0.77	159
OVERALL	**B**	**14.1**	**0.75**	**379**	**C**	**17.1**	**0.82**	**569**	**C**	**24.1**	**0.91**	**933**
Legend: (Y) - Yield Sign												

PUBLIC OUTREACH MEETING #1

BETA attended an open forum with Town Staff and abutters on March 7, 2019 to discuss ideas related to the potential reconfiguration of the recently Town acquired Amelia Drive. BETA provided a presentation summarizing Tasks 1 through Task 4 and collected comments. A bulleted summary is provided below:

- Discussion about whether on-street parking is needed
- On-street parking is easier than parking in lots behind commercial uses; tight turns in and out of parking lots
- Noted that some residents park on-street due to lack of designated parking
- On-street parking and two-way traffic is desired
- Widening for parking bays is acceptable without impacting trees
- The existing trees overhanging the road are in rough shape; they should be trimmed but preserved
- Trees need a wider planting area to be healthy
- Provide bicycle accommodation
- Develop an inviting pathway from Old South Road Bike Path
- Abutters concerned with tree roots upheaving sidewalks and creating trip hazards
- Widen brick sidewalks or otherwise change the material to make more accommodating
- Vehicles experience long delays exiting Amelia Drive onto Old South Road
- Vehicles often do not stop at the intersection of Amelia Drive and Ticcoma Way
- Connections to Waitt Drive are desired for increased access
- Intended parking areas along Waitt Drive will improve parking conditions on Amelia Drive
- Avoid impacts to abutter properties: patios, landscaping, utilities, frontage, etc.
- If a one-way scenario is used, explore short two-way sections on the north end (Bank and Meat & Fish Market) and south end (Granite City Electric)
- Relocate mailboxes in accordance with any updated travel patterns

PREFERRED ALTERNATIVE

BETA and Town Staff discussed the findings of the first Public Outreach Meeting summarized above. The DPW and Planning staff met with the Tree Warden to evaluate the trees along each side of Amelia Drive. The trees were pruned/trimmed per recommendation at the meeting. The Tree Warden specified that all of the trees are in good condition and should be maintained.

The Preferred Alternative (a revision of Alternative 3C discussed previously) was developed in attempts to accommodate all of the comments revealed at the meeting, while also accommodating the Town's overall plans for the area. This alternative maintains two-way travel within the existing 23-foot roadway and provides 8-foot wide parking bays staggered on both sides of the street in areas with no existing trees. This will reduce the apparent frontage of several properties along Amelia Drive.

The layout provides approximately 31 on-street parking spaces, less than the ±43 existing on-street spaces. All existing large trees are retained, though some smaller trees are intended to be relocated to accommodate parking. A widened 8-foot path is proposed on the eastbound side adjacent to the back of the parking bay. In areas where parking is not feasible due to trees or other driveway transitions, an 8-foot wide landscaped buffer will be used. The westbound side is proposed to have a 5-foot sidewalk adjacent to the back of the parking bay. In areas where parking is not feasible, a 4-foot wide landscaped buffer will be used. Additional landscaping and trees may be planted in these buffers, including the bumpout areas that delineate each of the parking bays. Given the existing Right-of-Way, this alternative requires the use of the 10-foot wide utility easements to accommodate parking, buffers, and walkways.

In previous concepts BETA had recommended striping the roadway. Due to the characteristics of the area, the preferred alternative proposes no longitudinal roadway striping. Stop Lines, Crosswalks, and possible parking lines are the only striping lines to be proposed.

The preferred alternative includes the construction of three access drives between Waitt Drive and Amelia Drive. It is expected that these will each be approximately 24 feet wide and provide two-way travel with access to the existing parking facilities for abutting Amelia Drive parcels. In addition, these access drives will serve as connections to proposed public parking facilities, the 2 Fairgrounds (Planning Dept.) driveway at Old South Road, and the 4 Fairgrounds (Public Safety Facility) driveway at Fairgrounds Road.

The preferred alternative was also explored assuming the construction of the previously evaluated mini-roundabout at the intersection of Old South Road. This scenario is expected to result in one less parking space due to the roundabout taper along Amelia Drive. A sketch of this alternative, as presented in the 2nd Public Outreach Meeting, is provided in **Figure 9**.

Since this concept maintains two-way travel along Amelia Drive, operating conditions are expected to be similar to those presented in **Table 7** through **Table 12**.

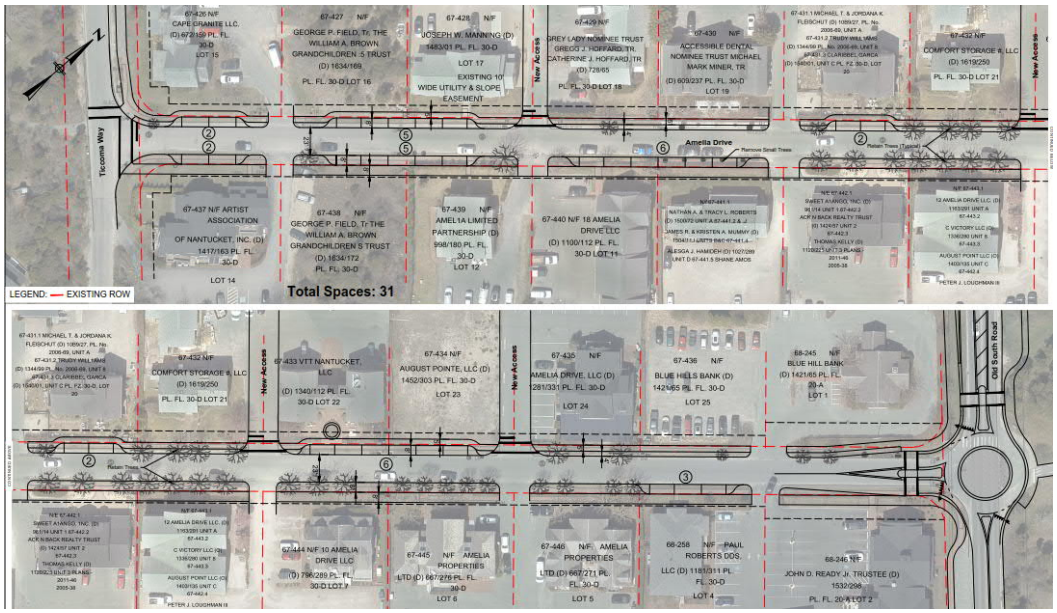
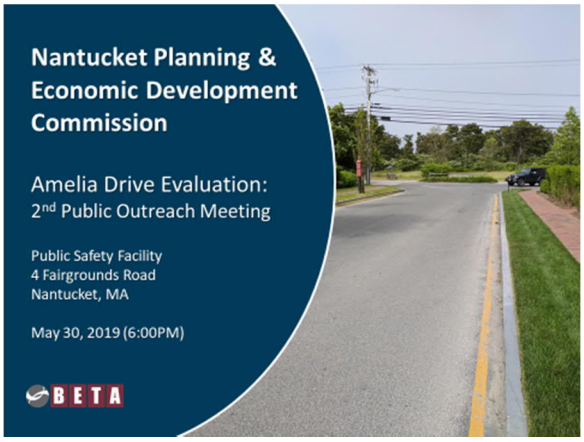


Figure 9: Preferred Alternative with Mini-Roundabout

PUBLIC OUTREACH MEETING #2



BETA attended an open forum with Town Staff and abutters on May 30, 2019 to present and solicit comments regarding the preferred alternative and short-term measures. BETA provided a brief recap presentation that discussed the process to-date, summarized the preferred alternative, and summarized short-term options. Large scale drawings were displayed throughout the room for abutters and staff to sketch comments or other ideas. A bulleted summary is provided below:

- Concern with location of parking and back of sidewalk impacting landscaping and property frontage:
    - 9 Amelia Drive
    - 13 Amelia Drive
    - 16 Amelia Drive
- Note additional trees and stone walls at 9 Amelia Drive that were previously not shown
- Resident of 13 Amelia Drive suggests moving parking from in front of residence to in front of neighboring commercial building; this would require the removal of four (4) large trees
- Abutter at 16 Amelia Drive suggests reducing on-street parking in this section to maintain landscaping and sitting area
- Opening of Grey Lady Marijuana Dispensary (11 Amelia Drive) will be a test of peak traffic and parking demand
- The necessity of on-street parking was determined to be primarily for residential units, above commercial spaces, that do not have designated parking on-site
- Parking on-street is often easier and more preferable than parking in designated lots behind commercial uses
- Peak parking often occurs when multiple dance, yoga, or other classes and activities are occurring/ending
- The addition of the larger Public Parking lots would improve these conditions
- Town Planning has vision of developing a walkable commercial village center type of area
- In general, abutters are in favor of new access drives to Waitt Drive and proposed Public Parking; noting that the drives should be wide enough for travel and can accommodate pedestrians accordingly
- Abutter proposes Town purchase of vacant property at 7 Amelia Drive

SHORT-TERM OPTIONS

Knowing that the preferred Amelia Drive alternative is not something that will be constructed in the immediate term, two short term options were discussed:

- "Do Nothing"
- Implement Alternative 1C – One-Way Westbound with On-Street Parking on Left Side of Travel

The "Do Nothing" is straightforward in that the roadway will continue to operate as it does today.

Alternative 1C represents maintaining the existing roadway layout but striping and signing the roadway as One-Way westbound (towards Ticcoma Way) with on-street parking on the left side. Under existing conditions on-street parking is allowed on the eastbound (southern) side of the roadway. Alternative 1C replicates the parking scenario that occurs today, e.g. the number of spaces, though there was concern that parallel parking on the left side of a one-way street is unusual and potentially unsafe as sight lines are obscured.

In general, abutters at the meeting were in favor of a One-Way westbound **trial** configuration particularly because it would be inexpensive to implement, and remove, without changing the layout of the roadway. However, Town Staff reiterated that without further construction of the Waitt Drive access points this configuration would significantly increase delays and queues for the Ticcoma Way approach to Fairgrounds Road. It was generally agreed that a two-way roadway is important, in the long-term, to maintain the most amount of access for all land uses in the area.

UPDATED PREFERRED ALTERNATIVE

The Preferred Alternative was updated in response to comments received at the 2nd Public Outreach Meeting. Major alterations involve the removal of on-street parking (±4 spaces) adjacent to 16 Amelia Drive and the Town's purchase of the vacant lot at 7 Amelia Drive. On-street parking was also a concern for 13 Amelia Drive, though relocating these spaces requires the removal of trees, an action that was discouraged by the Tree Warden. Further design should consider the parking supply impacts due to removal of on-street parking (±2 spaces) in front of 13 Amelia Drive.

Despite the purchase of 7 Amelia Drive, the proposed new access between Amelia Drive and Waitt Drive is intended to remain centered on the property line delineating 5 Amelia Drive and 7 Amelia Drive. A development program of the vacant lot is unknown at the time of writing.

Figure 10 provides an example of the Updated Preferred Alternative. An expanded view showing Waitt Drive and the surrounding neighborhood is provided in **Figure 11**. Similar sketches, **Figure 12** and **Figure 13**, expand on the previous figures by including the mini-roundabout and other improvements for Old South Road discussed in the September 2017 *Old South Road Corridor Study*.

Large scale drawings showing both versions of the Updated Preferred Alternative are appended for reference.

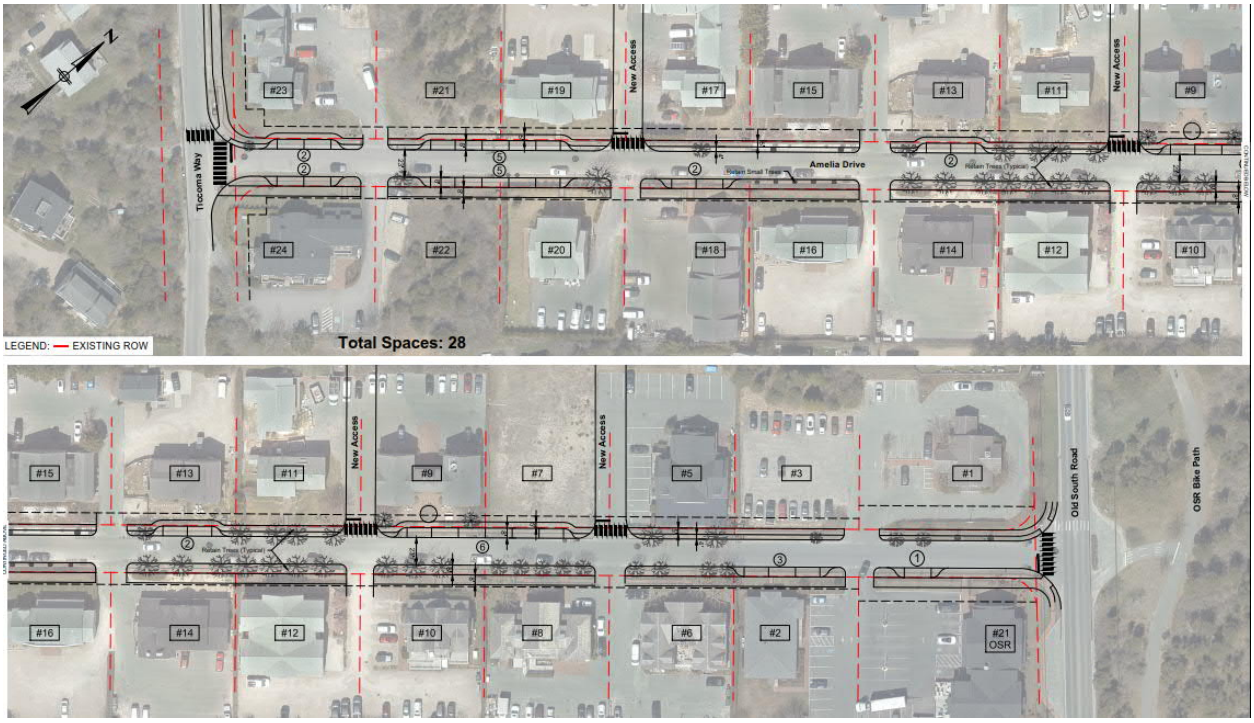


Figure 10: Preferred Altenrative

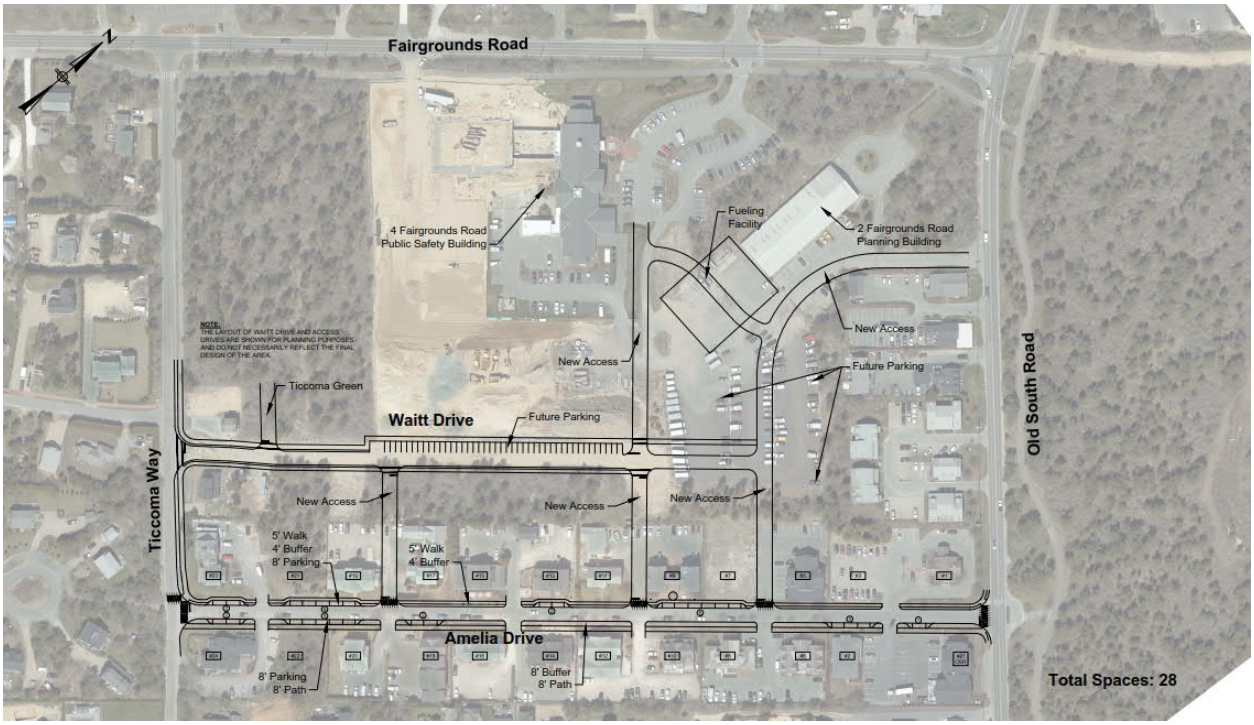


Figure 11: Preferred Alternative – Including Waitt Drive

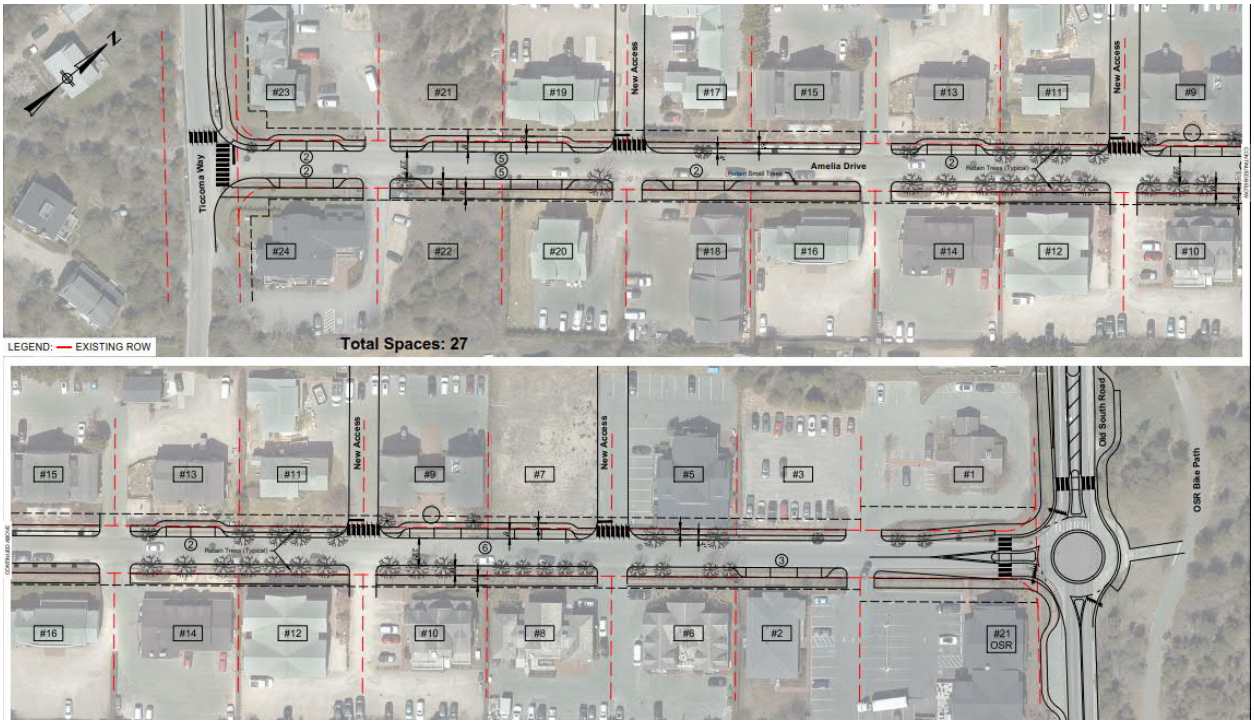


Figure 12: Preferred Alternative with Mini-Roundabout

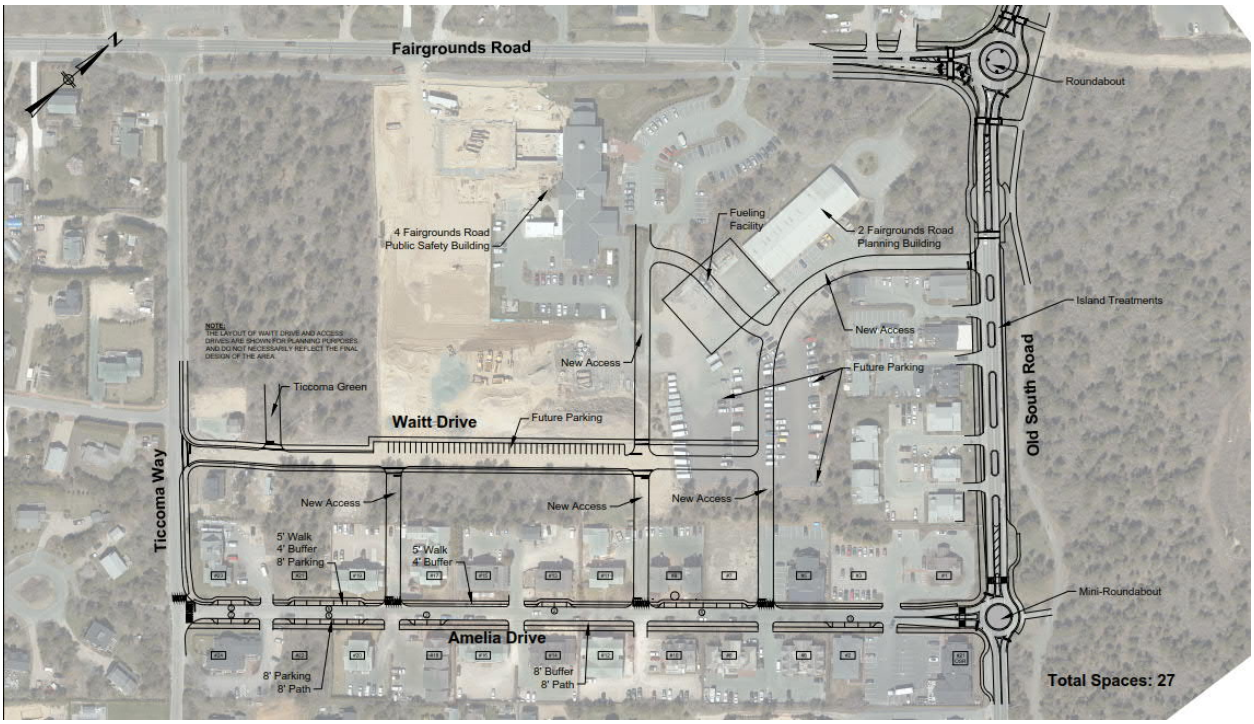


Figure 13: Preferred Alterative with Mini-Roundabout – Including Waitt Drive

PRELIMINARY COST ESTIMATE

A preliminary construction cost estimate was developed for the proposed Amelia Drive reconfiguration. This estimate does not include the following items:

- Complete reconstruction of Amelia Drive
- Construction of the mini-roundabout
- Construction of the Waitt Drive connecting roads
- Relocation of roadside utilities
- Right-of-way or easements
- Landscaping, street lighting, and other furnishings

With these assumptions in mind, the construction cost for the project is forecast to be $3,520,000.