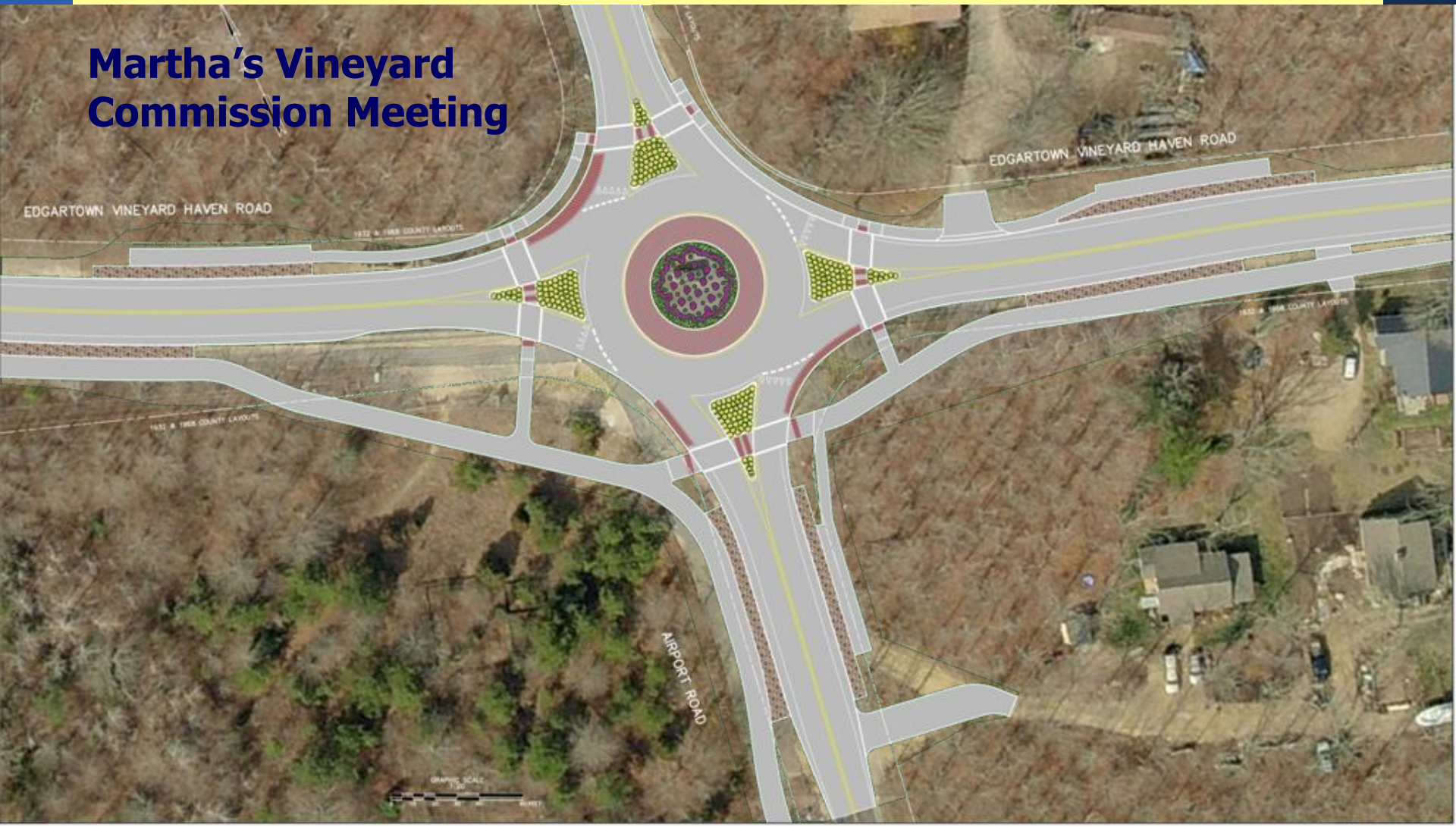
Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road



September 1, 2011

Oak Bluffs, Massachusetts

massDOT Massachusetts Department of Transportation Highway Division

GPI

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

MVC Questions/Concerns

- **Safety**
  - Roundabout vs. other
  - Reliability
- **Congestion**
  - Current
  - With Roundabout
  - Impacts in VH & Edgartown
- **Traffic Signal**
- **Funding**
  - What happens if not constructed
  - Other Projects
- **Open Space & Scenic Values**
  - Trees
  - Materials
  - Signage
- **Bus Stops**
  - Current Usage
  - Proposed
  - MassDOT/FHWA Requirements
  - No Build Consequence

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Safety

What is the relative safety compared to other kinds of intersections?

BENEFITS OF MODERN ROUNDABOUTS

Visit the Insurance Institute for Highway Safety (IIHS), check out Research and Stats then locate roundabouts for more information on safety factors. Some of the most important benefits of the modern roundabout are:

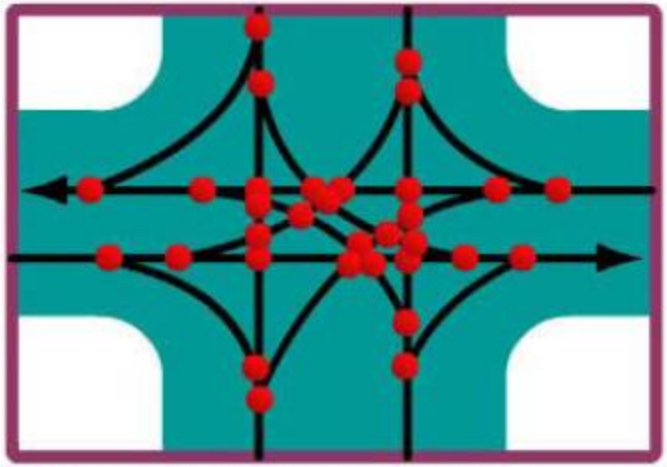
Reduces injury accidents by 75 percent and fatal accidents by 90 percent.

Increases efficient traffic flow up to 50 percent.

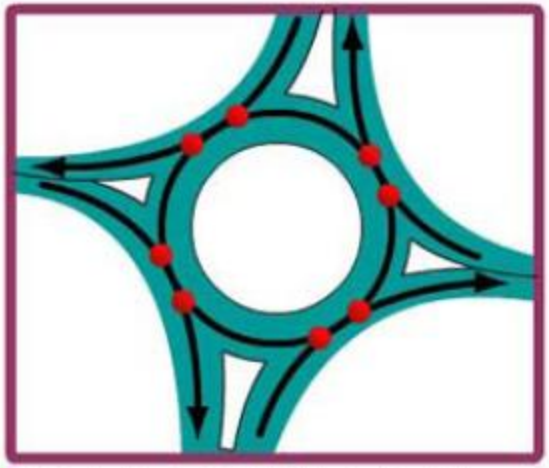
Helps the environment by reducing carbon emissions by double digits.

Decreases fuel consumption by as much as 30 percent.

Costs less than traffic signals and does not require expensive equipment or maintenance.



Red dots indicate 32 Vehicle to Vehicle conflict points in a standard four way intersection.



Red dots indicate 8 Vehicle to Vehicle conflict points in a Modern Roundabout.

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Safety

What data is available and how reliable is it?

- Insurance Institute for Highway Safety – www.iihs.org
- Roundabouts USA – www.roundaboutsusa.org
- Arizona DOT – www.azdot.gov
- New York DOT – www.nydot.gov
- Transportation Research Board – www.trb.org
- TRB's National Cooperative Highway Research Program (NCHRP) *Report 572: Roundabouts in the United States*
- TRB's National Cooperative Highway Research Program (NCHRP) *Report 672: Roundabouts an Informational Guide: Second Edition*
- Institute of Transportation Engineers – www.ite.org
- Federal Highway Administration – www.fhwa.org

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Congestion

What is the current congestion?

How will this change with a roundabout?

FUNCTIONAL DESIGN REPORT

Edgartown-Vineyard Haven Road at Barnes Road and Airport Road, Oak Bluffs, Massachusetts

Table 6
2010 Capacity Analysis Summary for Average Month Conditions
Existing Operations vs. Proposed Operations

	Existing Operations				Roundabout Operations			
Intersection/Peak Hour/Lane	V/C[a]	Del.[b]	LOS[c]	Q[d]	V/C	Del.	LOS	Q
Weekday AM:								
Vineyard Haven EB	0.88	41.3	E	--	0.41	6.6	A	72
Vineyard Haven WB	0.77	29.4	D	--	0.38	6.8	A	60
Airport Rd NB	0.59	20.8	C	--	0.29	9.3	A	46
Barnes Road SB	0.41	16.1	C	--	0.21	7.7	A	30
Overall Intersection	--	**29.9**	**D**	--	--	**7.4**	**A**	--
Weekday PM:								
Vineyard Haven EB	1.00	66.5	F	--	0.43	6.7	A	76
Vineyard Haven WB	0.79	34.2	D	--	0.37	6.9	A	59
Airport Rd NB	0.70	27.9	D	--	0.33	9.4	A	54
Barnes Road SB	0.53	20.2	C	--	0.25	8.0	A	37
Overall Intersection	--	**41.8**	**E**	--	--	**7.6**	**A**	--

Table 7
2030 Capacity Analysis Summary for Average Month Conditions
Existing Operations vs. Proposed Operations

	Existing Operations				Roundabout Operations			
Intersection/Peak Hour/Lane	V/C[a]	Del.[b]	LOS[c]	Q[d]	V/C	Del.	LOS	Q
Weekday AM:								
Vineyard Haven EB	1.49	254.4	F	--	0.59	7.4	A	131
Vineyard Haven WB	1.26	160.1	F	--	0.55	8.2	A	118
Airport Rd NB	0.91	54.7	F	--	0.44	10.4	B	83
Barnes Road SB	0.66	28.1	D	--	0.33	9.1	A	58
Overall Intersection	--	**152.7**	**F**	--	--	**8.5**	**A**	--
Weekday PM:								
Vineyard Haven EB	1.65	327.0	F	--	0.60	7.5	A	138
Vineyard Haven WB	1.25	159.8	F	--	0.55	8.6	A	120
Airport Rd NB	1.06	92.9	F	--	0.51	11.3	B	111
Barnes Road SB	0.81	41.7	E	--	0.39	9.3	A	69
Overall Intersection	--	**184.2**	**F**	--	--	**9.0**	**A**	--

[a]Volume-to-capacity ratio. [b]Average control delay in seconds per vehicle. [c]Level of service.
[d]95th Percentile Queue Length (ft).

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Congestion

What is the current congestion?

How will this change with a roundabout?

FUNCTIONAL DESIGN REPORT

Edgartown-Vineyard Haven Road at Barnes Road and Airport Road, Oak Bluffs, Massachusetts

Table 8
2010 Capacity Analysis Summary for Summer Month Conditions
Existing Operations vs. Proposed Operations

Intersection/Peak Hour/Lane	Existing Operations V/C[a]	Del.[b]	LOS[c]	Q[d]	Roundabout Operations V/C	Del.	LOS	Q
Weekday AM:								
Vineyard Haven EB	1.17	127.8	F	--	0.51	7.8	A	100
Vineyard Haven WB	1.06	91.0	F	--	0.46	7.7	A	81
Airport Rd NB	0.87	48.5	E	--	0.41	9.9	A	74
Barnes Road SB	0.68	30.2	D	--	0.31	9.7	A	51
Overall Intersection	--	**82.9**	**F**	--	--	**8.6**	**A**	--
Weekday PM:								
Vineyard Haven EB	1.37	209.8	F	--	0.51	8.1	A	101
Vineyard Haven WB	1.12	113.5	F	--	0.48	8.9	A	94
Airport Rd NB	1.19	140.3	F	--	0.49	9.6	A	98
Barnes Road SB	1.10	105.6	F	--	0.49	9.2	A	101
Overall Intersection	--	**146.0**	**F**	--	--	**8.9**	**A**	--

Table 9
2030 Capacity Analysis Summary Summer Month Conditions
Existing Operations vs. Proposed Operations

Intersection/Peak Hour/Lane	Existing Operations V/C[a]	Del.[b]	LOS[c]	Q[d]	Roundabout Operations V/C	Del.	LOS	Q
Weekday AM:								
Vineyard Haven EB	1.77	378.4	F	--	0.76	12.3	B	259
Vineyard Haven WB	1.60	303.9	F	--	0.70	11.3	B	205
Airport Rd NB	1.27	168.1	F	--	0.66	14.6	B	189
Barnes Road SB	0.95	66.6	F	--	0.52	13.3	B	123
Overall Intersection	--	**257.1**	**F**	--	--	**12.7**	**B**	--
Weekday PM:								
Vineyard Haven EB	1.85	415.7	F	--	0.77	12.5	B	272
Vineyard Haven WB	1.50	265.4	F	--	0.79	16.8	B	282
Airport Rd NB	1.61	310.1	F	--	0.78	16.0	B	279
Barnes Road SB	1.48	252.9	F	--	0.84	20.1	C	330
Overall Intersection	--	**316.8**	**F**	--	--	**16.1**	**B**	--

[a]Volume-to-capacity ratio. [b]Average control delay in seconds per vehicle. [c]Level of service.
[d]95th Percentile Queue Length (ft).

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Congestion

What is the current congestion?
How will this change with a roundabout?

Under the worst case scenario (2030 Summer PM Peak Hour) the delays are significantly reduced …:

ROUNDABOUT	4-WAY STOP	REDUCTION
SB – 20 sec	4.2 min	3.7 min
WB – 17 sec	4.4 min	4.1 min
NB – 16 sec	5.2 min	4.9 min
EB – 13 sec	6.9 min	6.7 min
OVERALL 16 sec	5.3 min	5.0 min

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Congestion

Will relieving congestion at the Blinker lead to additional traffic at the ends?

If the overall volume on the ED-VH Road remains the same?

4-WAY STOP vs. ROUNDABOUT NETWORK TRAFFIC OPERATIONS COMPARISON

2010 Summer AM Volumes

Intersection	EB Dep	EB Arrival	WB Arrival	WB Dep
Edgartown-Vineyard Haven Rd at Airport Rd & Barnes Rd	437		428	
Edgartown-Vineyard Haven Rd at County Road		383		408
Difference (loss of vehicles between intersections)	(54.00)		(20.00)	

4-WAY STOP-SIMTRAFFIC

	State Road				Barnes Road				Beach Road		
	State Rd EB	State Rd WB	Edg-VH NB	Look St SB	Edg-VH EB	Edg-VH WB	Airport NB	Barnes SB	Edg-VH EB	Upper Main NB	Beach Rd SB
LOS (From SYNCHRO)	A	A	F	F	F	F	F	F	C	A	A
DEL	5.10	16.20	1237.60	272.80	132.40	45.30	39.20	35.80	43.90	22.30	2.30
Hourly Exit Rate	598.00	524.00	183.00	83.00	442.00	405.00	371.00	378.00	282.00	750.00	326.00
95th Queue (ft)	11.00	298.00	4076.00	275.00	898.00	333.00	379.00	313.00	240.00	487.00	16.00
95th Queue (veh)	1	15	204	14	45	17	19	16	12	24	1

Total Network Delay (hr)	208.60
Total # of STOPS in Network	5668.00
Network Fuel Consumption (gal)	237.60

ROUNDABOUT-SIMTRAFFIC

	State Road				Barnes Road				Beach Road		
	State Rd EB	State Rd WB	Edg-VH NB	Look St SB	Edg-VH EB	Edg-VH WB	Airport NB	Barnes SB	Edg-VH EB	NB	SB
LOS (From SYNCHRO)	A	A	F	F	B	C	B	C	C	A	A
DEL	5.10	16.30	1279.00	268.30	13.00	21.40	7.00	9.70	52.40	22.40	2.80
Hourly Exit Rate	598.00	524.00	179.00	82.00	456.00	410.00	371.00	378.00	291.00	750.00	326.00
95th Queue (ft)	19.00	299.00	4116.00	370.00	160.00	192.00	107.00	157.00	311.00	485.00	43.00
95th Queue (veh)	1	15	206	19	8	10	5	8	16	24	2

Total Network Delay (hr)	192.20
Total # of STOPS in Network	4855.00
Network Fuel Consumption (gal)	234.80

CHANGE-SIMTRAFFIC

	State Road				Barnes Road				Beach Road		
	State Rd EB	State Rd WB	Edg-VH NB	Look St SB	Edg-VH EB	Edg-VH WB	Airport NB	Barnes SB	Edg-VH EB	NB	SB
LOS (From SYNCHRO)	A	A	F	F	F to B	F to C	F to B	F to C	C	A	A
DEL	0.00	0.10	41.40	(4.50)	(119.40)	(23.90)	(32.20)	(26.10)	8.50	0.10	0.50
Hourly Exit Rate	0.00	0.00	(4.00)	(1.00)	14.00	5.00	0.00	0.00	9.00	0.00	0.00
95th Queue (ft)	8.00	1.00	40.00	95.00	(738.00)	(141.00)	(272.00)	(156.00)	71.00	(2.00)	27.00
95th Queue (veh)	0	0	2	5	(37)	(7)	(14)	(8)	4	(0)	1

Total Network Delay (hr)	(16.40)
Total # of STOPS in Network	(813.00)
Network Fuel Consumption (gal)	(2.80)

(xxx) Represents a Reduction

Based on 2005 Volumes from MVC

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Congestion

Will relieving congestion at the Blinker lead to additional traffic at the ends?

If the overall volume on the ED-VH Road remains the same?

CHANGE-SIMTRAFFIC

	State Road				Barnes Road				Beach Road		
	State Rd EB	State Rd WB	Edg-VH NB	Look St SB	Edg-VH EB	Edg-VH WB	Airport NB	Barnes SB	Edg-VH EB	NB	SB
LOS (From SYNCHRO)	A	A	F	F	F to B	F to C	F to B	F to C	C	A	A
DEL	0.00	0.10	41.40	(4.50)	(119.40)	(23.90)	(32.20)	(26.10)	8.50	0.10	0.50
Hourly Exit Rate	0.00	0.00	(4.00)	(1.00)	14.00	5.00	0.00	0.00	9.00	0.00	0.00
95th Queue (ft)	8.00	1.00	40.00	95.00	(738.00)	(141.00)	(272.00)	(156.00)	71.00	(2.00)	27.00
95th Queue (veh)	0	0	2	5	(37)	(7)	(14)	(8)	4	(0)	1

Negligible Change to traffic in VH & Edgartown

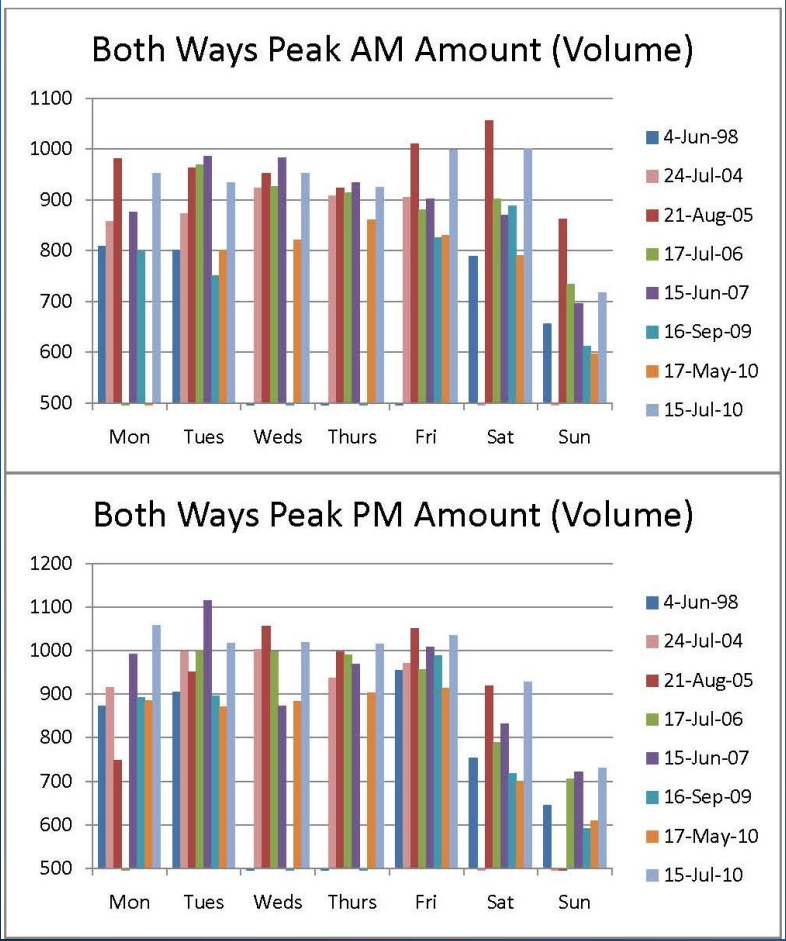
- **One (1) additional vehicle approximately every 4-5 minutes EB – 4+ miles away**
- **One (1) additional vehicle approximately every 12 minutes WB – 2+ miles away**

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Congestion

Will relieving congestion at the Blinker lead to additional traffic at the ends?

If the overall volume increases?



- **Volumes have continued to increase after 4-Way STOP conversion.**
- **Excess capacity with roundabout to accommodate additional traffic.**
- **If traffic "comes back" it is being diverted from less desirable (residential) streets – *which is a positive regional impact***

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Comparison with Traffic Light – Summary of Differences

- Based on the MUTCD Section 4B.04 Alternatives to Traffic Control – "Since vehicular delay and the frequency of some types of crashes are sometimes greater under traffic signal control than under STOP sign control, consideration should be given to providing alternatives to traffic control signals even if one or more of the signal warrants has been satisfied."
- Furthermore, Section 4C.01 Studies and Factors for Justifying Traffic Control Signals states "The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal." "A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection."
- Based on **National Cooperative Highway Research Program** (**NCHRP**) reports roundabouts reduce collisions by approximately 60%-67% when compared to a signalized intersection.
- Therefore, it does not make sense to eliminate the "safest" improvement option in lieu of signals, which have been shown to have an increased crash rate.
- See comparison performed by Wisconsin DOT (attached)

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Comparison of Traffic Signals vs. Roundabout

		TRAFFIC SIGNALS	ROUNDABOUT
Safety	Crash Frequency	Higher than a roundabout	Lower than a traffic signal
	Crash Severity	Higher due to higher speeds and higher speed differential	Lower due to lower speeds and lower speed differential. Elimination of high-speed T-bone (angle) crashes.
	Number of conflict points between vehicles	32	Reduced to 8
	Number of driver decisions.	Higher than a roundabout since drivers need to be aware of vehicles to the left, right and straight ahead.	Reduced since drivers only need to be aware of vehicles to their left at entry.
	Severity of driver errors	Higher due to higher speeds and larger speed differentials.	Reduced since overall speeds are lower and the relative differences in speeds are also lower.
	Traffic Calming	Not effective as a traffic calming measure.	Entering and circulating geometry constrains the speed to 18 – 30 mph. Geometrics ensure lower speeds.
Traffic Operations	Trucks (turning movements)	May encroach on adjacent lanes while turning	May encroach on adjacent lanes while turning. May require the use of the truck apron on the inside of the roundabout when making a left turn.
	Capacity	Constrained by green time in cycle length	Greater capacity than a traffic signal due to the high volume of vehicles traveling on WIS 172.
	Operational Benefits	More delay to all vehicles than a roundabout.	Less delay.
	Traffic Signing	Typical Intersection Signing	Same signing as signalized intersection except YIELD signs are used to control the traffic entering the roundabout.
	Traffic Speed	Not limited by geometrics. Speed on side roads, which previously had stop signs, will increase.	Geometric features ensure slow entering and circulating speeds. Speed is restrained to 18- 30 mph by the geometrics.
	User Familiarity	Drivers are very familiar with using intersections with separate left turn and right turn lanes.	Would be the 16th, 17th and 18th roundabouts in Brown County. Currently there are 12 multi-lane roundabouts in Wisconsin.

Comparison of Traffic Signals vs. Roundabout

		TRAFFIC SIGNALS	ROUNDABOUT
Right-of-Way Impacts	Overall	Typically requires additional area on the approaches to the intersection.	Typically require more area at the junction of the roadways but not as much area on the approaches
	WIS 54	No additional right-of-way required.	Right-of-way required in the northwest and southeast quadrants of the intersection.
	County GE	Right-of-way required along both sides of County GE	Right-of-way required along the west side of County GE
	Airport/Radisson Hotel Entrance	No additional right-of-way required.	Right-of-way required on the south side of WIS 172.
Community Impacts	Community Enhancements	Community enhancements are available on the perimeter of the intersection.	In addition to the perimeter the central island may be developed as a "gateway" to the community.
	Environmental Benefits	Increase in fuel consumption and emissions due to stopped and riding vehicles during red light phases.	Overall reduction in fuel consumption and vehicle emissions since delay at the intersection is reduced.
Cost	Maintenance	Signals are susceptible to care and trucks hitting them, power outages and malfunctions. Routine signal head repair, and replacement, loop repair, and maintenance required.	Pavement markings and landscaping. No impact on intersection due to power outages.
	WIS 54	$500,000	$650,000
	County GE	$1,500,000	$740,000
	Airport/Radisson Hotel Entrance	$260,000	$640,000

The source of the information in the table above which is non-project specific (i.e. generalizations between signals and roundabouts) can be found in "Roundabouts: An Information Guide:" published by the US Department of Transportation, Federal Highway Administration (FHWA Publication No. FHWA-RD-00-67).

massDOT Massachusetts Department of Transportation Highway Division

GPI

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Funding

What would happen if funds are not spent?

- The funds would first revert back to the Regional Planning Organization in which the project is located and a substitute project that is ready for advertisement in the same fiscal year could be advanced. Since there are no projects available on the island, the monies would be lost to the area and be redistributed to other Planning Organizations in the Commonwealth.

Are there any alternative projects in Dukes County that could be funded in time?

- Based on discussions with the MVC Staff there are no other projects ready for the 2012, 2013 or 2014 TIP years that could be substituted for this project. While there may be ideas for additional projects, it takes approximately three years for a project to be ready to advertise since funds have to be found for engineering, the design has to be completed, right-of-way needs to be secured and any environmental issues need to be addressed.

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Open Space and Scenic Value

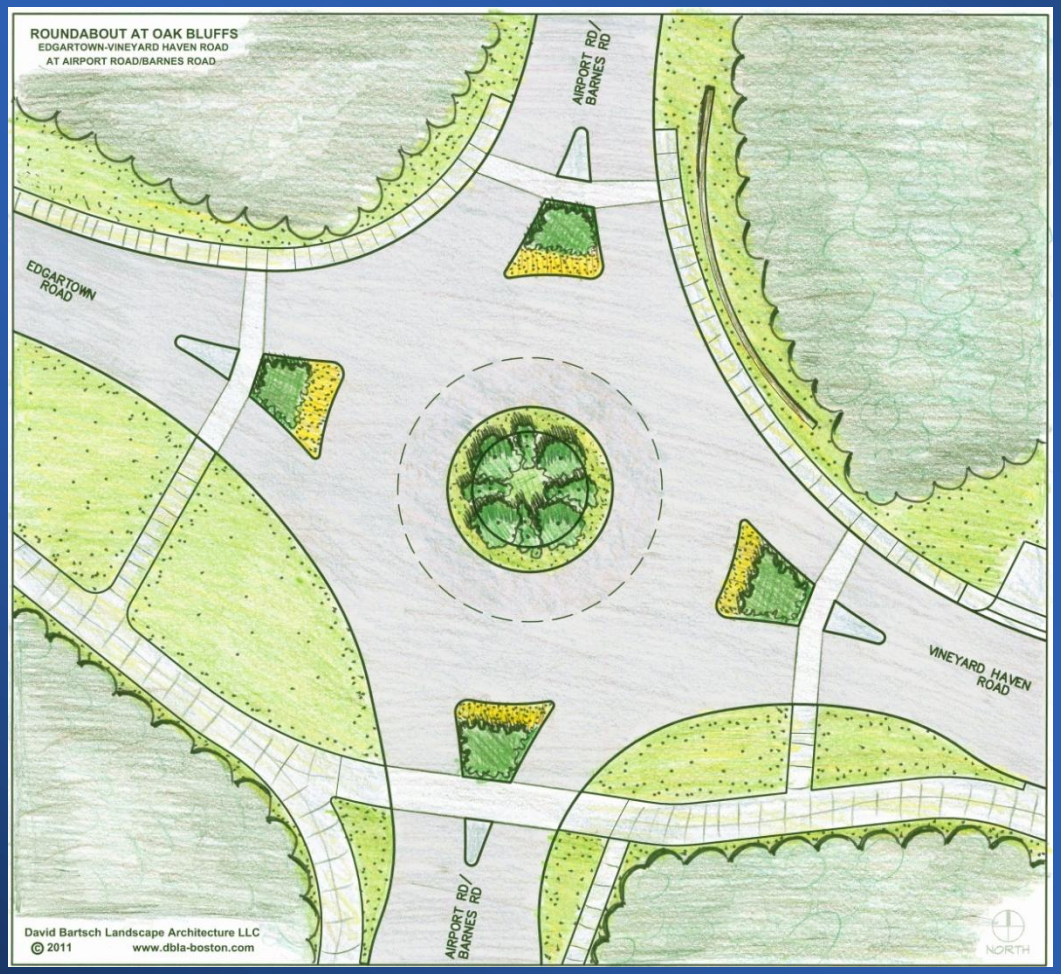
How many trees will be removed? How many of these are for the bus stops?

- We are still in the process of doing the final grading which will determine the impacts to trees. In addition, in some areas, we may be able to use tree pits or small walls to preserve existing trees. We will also be planting additional trees and landscaping as part of the project.
- In order to construct the roadway portion of the roundabout will require removal of 2-3 trees.
- There are approximately 18-20 trees required to relocate the bike path away from the roadway on the southwest and southeast corners.
- Along Airport Road, there are a series of several trees on the westerly side between the bike path and the roadway (10-12) trees varying from about 7”-10”. Most of these will have to be removed because of the grading and to accommodate any type of bus stop (paved or unpaved) and associated bikepath.
- Along the easterly side of Airport Road, again the grading will be difficult and contribute to the tree removal. With any paved or unpaved bus stop and associated sidewalk we would need to remove 11-13 trees varying from about 7”-12”.

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Open Space and Scenic Value

How many trees will be removed? How many of these are for the bus stops?



Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Open Space and Scenic Value

What will curbs, sidewalks, paths be? Why are they needed?

- There will be granite curbs adjacent to the sidewalk where the sidewalk directly abuts the roadway. Where we can achieve the minimal 5' separation between the sidewalk and roadway, a cape cod berm will be utilized.
- Curbing is required where the sidewalk is adjacent to the roadway to provide vertical separation between pedestrians and vehicles. In addition, curbing and berm is also critical to provide a controlled drainage system.
- The sidewalks and bike path will be bituminous concrete with cement concrete wheelchair ramps.
- Sidewalks are needed to provide ADA access and connections to the bus stops and to allow for potential future sidewalk construction.

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Open Space and Scenic Value

What lighting is required?

- Street lighting will be provided on the four corners of the intersection.

What will signage be?

- We understand the concern about over-signing projects and will make every attempt to keep signing to a minimum. However, the design has to be consistent with MUTCD and FHWA guidelines for signage. In addition, typical “Island” Origin Destination signs will be provided and their design will be coordinated with MVC and Town Officials.

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Bus Pull-Offs

What is current usage?

- This is really a question for the RTA. In general, there are no signed bus stops at the intersection and buses routinely stop along all four approaches and departures depending on demand.

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Bus Pull-Offs

What is the latest proposal (number, location, surface materials)?

- In order to maintain the current service a minimum of 6 stops is required. These are located along Edgartown Vineyard Haven Road, east and west of the intersection as well as along Airport Road south of the intersection. Stops will be provided on the approaches and departures.

- The surface treatment has not yet been finalized. Potential treatments include; bituminous concrete, “brick” stamped concrete or crushed stone/gravel. These will all meet MassDOT and FHWA requirements provided they are maintained to ADA compliant standards for smoothness and stability.

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Bus Pull-Offs

What are MassDOT/FHWA requirements?

- The entire sidewalk adjacent to the bus stop must be ADA accessible

- Bus stops must be a minimum of 60 ft in length (stopped) plus transition areas and 10 ft wide for a 40' bus. We are currently showing a 6' curb cut out and providing the additional 4' in the 4' shoulder areas.

What would happen if the pull-offs were not built as part of this proposal?

- Typically there would be a 5 yr period where the newly constructed road surface could not be altered – unless for emergency repairs.

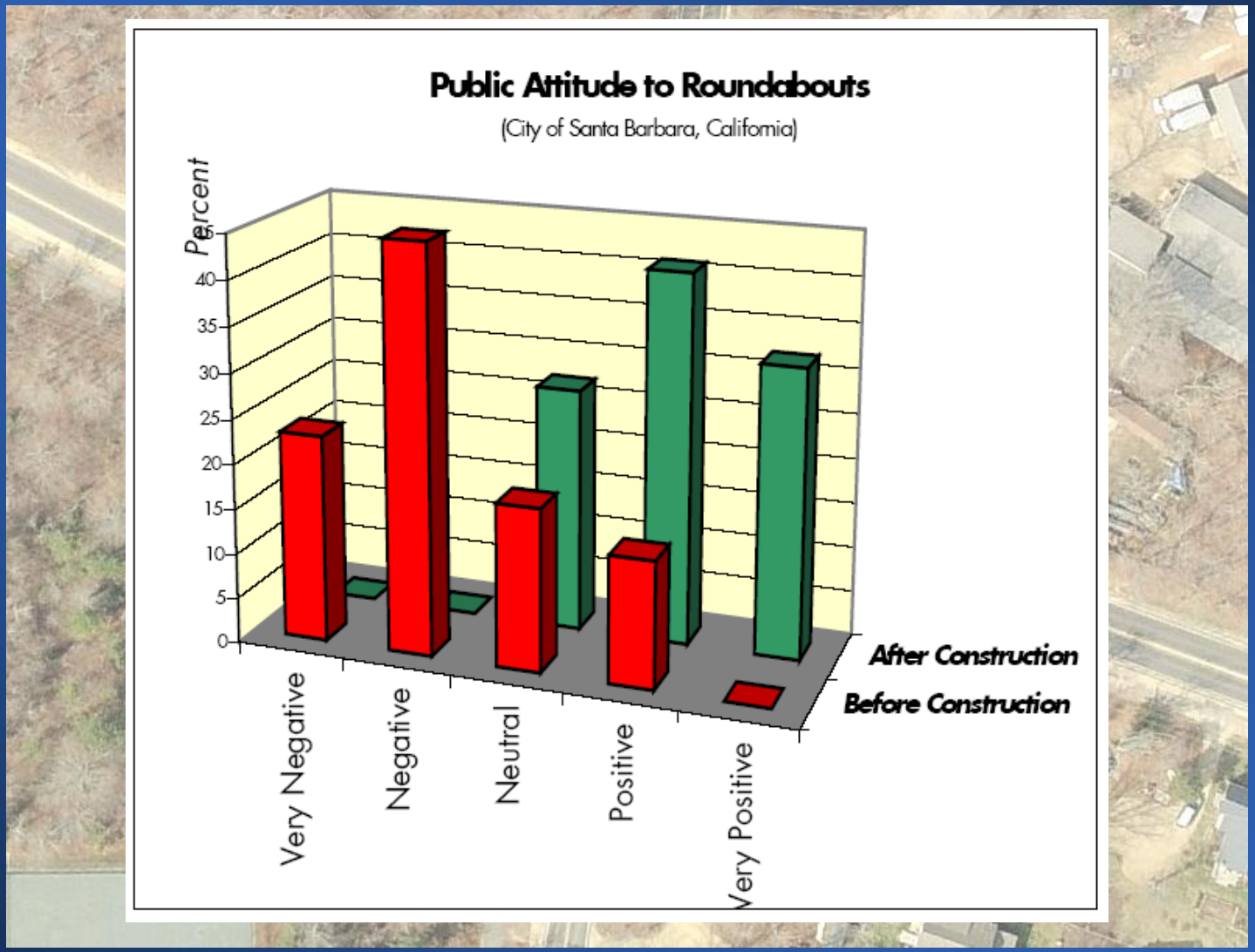
Could the buses continue to stop on the shoulder?

- The existing bus stops are not ADA compliant. There are no ADA compliant landing areas provided, nor are there ADA compliant paths connecting the stops. Since we are reconstructing the intersection, we are required to provide ADA access to and between all the bus stops. Therefore, buses could continue to stop on the shoulders, but we would still be required to provide ADA compliant landing areas and sidewalk connections between the stop locations.

Would this reduce the number of sidewalks required? What would the cost difference be?

- The cost associated with the bus stops has not been broken out in detail, and would vary depending on the surface treatment. It is estimated that it could be between $50,000-$75,000 depending on the materials.

Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road



Reconstruction of Edgartown-Vineyard Haven Road at Airport Road and Barnes Road

Public opinion in favor of or opposed to new roundabouts

PUBLIC OPINION ON ROUNDABOUT	BEFORE CONSTRUCTION	AFTER CONSTRUCTION
Strongly Favor	17%	26%
Somewhat Favor	19%	24%
Total in favor	**36%**	**50%**
Somewhat Oppose	19%	9%
Strongly Oppose	35%	26%
Total opposed	**54%**	**36%**
Don't Know	9%	14%

Two thirds of drivers over 65 years of age supported the roundabouts.


OAK BLUFFS
EDGARTOWN-VINEYARD HAVEN ROAD
AT AIRPORT ROAD & BARNES ROAD
STATE
MASS.
FED. AID PROJ. NO.
SHEET NO. 1
TOTAL SHEETS 1
PROJECT FILE NO. 604813
COLOR PLAN
BARNES ROAD
1932 & 1968 COUNTY LAYOUTS
EDGARTOWN VINEYARD HAVEN ROAD
EDGARTOWN VINEYARD HAVEN ROAD
1932 & 1968 COUNTY LAYOUTS
1932 & 1968 COUNTY LAYOUTS
1932 & 1968 COUNTY LAYOUTS
AIRPORT ROAD
GRAPHIC SCALE
1:20
0 10 20 30 40 60 FEET


OAK BLUFFS
EDGARTOWN-VINEYARD HAVEN ROAD
AT AIRPORT ROAD & BARNES ROAD
COLOR PLAN
BARNES ROAD
EDGARTOWN VINEYARD HAVEN ROAD
EDGARTOWN VINEYARD HAVEN ROAD
AIRPORT ROAD


OAK BLUFFS
EDGARTOWN-VINEYARD HAVEN ROAD
AT AIRPORT ROAD & BARNES ROAD
STATE
MASS.
FED. AID PROJ. NO.
SHEET NO. 1
TOTAL SHEETS 1
PROJECT FILE NO. 604813
COLOR PLAN
BARNES ROAD
1932 & 1968 COUNTY LAYOUTS
EDGARTOWN VINEYARD HAVEN ROAD
EDGARTOWN VINEYARD HAVEN ROAD
1932 & 1968 COUNTY LAYOUTS
1932 & 1968 COUNTY LAYOUTS
1932 & 1968 COUNTY LAYOUTS
AIRPORT ROAD
GRAPHIC SCALE
1:20
0 10 20 30 40 60 FEET