

ALTERNATIVES COMPARISON

JO ANN AVENUE INTERSECTION

Criteria		Alternative 1 Intersection Closure / Cul-de-Sac	Alternative 2 Right-in / Right-out
Safety		Removes an additional access point to Middletown Road and four conflict points.	Eliminates a left turn into Jo Ann Ave and two conflict points.
Traffic Flow Efficiency *		LOS B	LOS B
Right-of-Way Impacts	Potential Displacements	0	0
	Required ROW Area	8,035 SF (0.18 AC)	6,090 SF (0.14 AC)
	Temporary Construction Easement Area	4,025 SF	4,135 SF
Environmental Impacts	Wetland Area	0 SF	0 SF
	Stream Length	0 LF	0 LF
	Farmland Soils of Importance	0 SF	0 SF
	Hazardous Waste	N/A	N/A
	Threatened & Endangered Species	N/A	N/A
	Section 4f Resource	N/A	N/A
	Above Ground Historic Resources	N/A	N/A
	Archaeological Resources	N/A	N/A
Utility Impacts	Aerial	1,210 LF	1,341 LF
	Water	1 Fire Hydrant	1 Fire Hydrant
	Gas	0 LF	60 LF
	Sewer	0 LF	30 LF
E&S / Stormwater	New Impervious Area	+7,545 SF	+5,294 SF
Constructability		Relatively easy to construct.	Slightly easier to construct. Less roadway infrastructure.
Cost		\$1,288,800	\$1,278,500

Abbreviations

LOS = level of service
AC = acres
SF = square feet
LF = lineal feet
ROW = right-of-way
E&S = erosion and sedimentation control

SOUTHPOINT DRIVE INTERSECTION

Criteria		Alternative 1 Unsignalized Intersection	Alternative 2 Roundabout
Safety		Potential for severe crashes; however do not cause queuing on Middletown Road.	Crashes less severe; however causes queuing and delays on Middletown Road where none currently exist.
Traffic Flow Efficiency *		LOS A	LOS D
Right-of-Way Impacts	Potential Displacements	0	0
	Required ROW Area	13,750 SF (0.32 AC)	13,150 SF (0.30 AC)
	Temporary Construction Easement Area	0	350 SF
Environmental Impacts	Wetland Area	0 SF	0 SF
	Stream Length	0 LF	0 LF
	Farmland Soils of Importance	4,590 SF	5, 045 SF
	Hazardous Waste	N/A	N/A
	Threatened & Endangered Species	N/A	N/A
	Section 4f Resource	N/A	N/A
	Above Ground Historic Resources	N/A	N/A
	Archaeological Resources	N/A	N/A
Utility Impacts	Aerial	102 LF	160 LF
	Water	0 LF	0 LF
	Gas	0 LF	325 LF
	Sewer	0 LF	220 LF
E&S / Stormwater	New Impervious Area	+6,890	+2,795
Constructability		Easier to construct. No advance staging of traffic control.	Additional traffic control staging to construct roundabout. More difficult materials, longer schedule.
Cost		\$467,200	\$1,387,300

Notes:

- The two alternatives are similar with respect to operations, impacts, and costs
- Alternative 1 eliminates an access point on Middletown Road
- The Locust Lane Intersection can safely and efficiently handle the rerouted traffic

Recommendation is for the Intersection Closure and Cul-De-Sac (Alternative 1)

*Traffic flow efficiency was determined using projected year 2050 traffic volumes that account for the growth of the local area as well as growth from planned and potential development along the corridor.

Notes:

- Alternative 2 creates new queuing (traffic backups) and delay issues on Middletown Road during peak periods where no queuing currently existis, which is a safety concern
- Alternative 1 avoids disrupting the coordinated traffic signal timing between Locust Lane and Stoverdale Road
- Analyses indicates that traffic signal warrant conditions are not met for current traffic volumes. Intersection signalization could be considered in future years should development occur, increasing traffic volumes at this location.

Recommendation is for an Unsignalized Intersection (Alternative 1)

ALTERNATIVES COMPARISON

WOOD ROAD INTERSECTION

Criteria		Alternative 1 Signalized Intersection	Alternative 2 Roundabout	Alternative 3 Teardrop
Safety		Moderate crash rates, potential for severe collisions.	Lower crash rates, generally less severe collisions.	Unfamiliar to general public. Can be confusing. Possible crashes for left turn onto Wood Road.
Traffic Flow Efficiency *		LOS B	LOS F	LOS D
Right-of-Way Impacts	Potential Displacements	1 Residential	1 Residential	1 Residential
	Required ROW Area	57,230 SF (1.32 AC)	66,175 SF (1.52 AC)	60,755 SF (1.40 AC)
	Temporary Construction Easement Area	9,030 SF	7,655 SF	8,325 SF
Environmental Impacts	Wetland Area	0 SF	0 SF	0 SF
	Stream Length	0 LF	0 LF	0 LF
	Farmland Soils of Importance	35,060 SF	36,465 SF	29,880 SF
	Hazardous Waste	N/A	N/A	N/A
	Threatened & Endangered Species	N/A	N/A	N/A
	Section 4f Resource	John Strickler Farm	John Strickler Farm	John Strickler Farm
	Above Ground Historic Resources	John Strickler Farm (National Register Eligible)	John Strickler Farm (National Register Eligible)	John Strickler Farm (National Register Eligible)
	Archaeological Resources	N/A	N/A	N/A
Utility Impacts	Aerial	735 LF	1,080 LF	1,080 LF
	Water	400 LF	470 LF	630 LF
	Gas	0 LF	0 LF	0 LF
	Sewer	0 LF	0 LF	0 LF
E&S / Stormwater	New Impervious Area	+15,200 SF	+16,230 SF	+14,610 SF
Constructability		Easier to construct. Some advanced staging of traffic control.	Additional traffic control staging to construct roundabout. More difficult materials, longer schedule.	Additional traffic control staging to construct teardrop. More difficult materials, longer schedule.
Cost		\$1,534,300	\$2,100,800	\$2,017,700

Notes:

- Alternative 1 is the most effective at managing future traffic volumes based on modeling projections
- Alternative 2 was found to be overwhelmed by anticipated growth, leading to congestion and inefficiency in the future
- Alternative 3 could confuse unfamiliar drivers, increasing the risk of crashes in a corridor heavily used by visitors to regional destinations
- Alternatives 2 and 3 have a larger footprint which is reflected in more impact to adjacent properties and historic resources
- Alternative 1 offers a more intuitive and comfortable experience for non-motorized users

Recommendation is for a Signalized Intersection (Alternative 1)

*Traffic flow efficiency was determined using projected year 2050 traffic volumes that account for the growth of the local area as well as growth from planned and potential development along the corridor.

GRAMERCY PLACE (NORTH) INTERSECTION

Criteria		Alternative 1 Unsignalized Intersection	Alternative 2 Roundabout
Safety		Potential for severe crashes; however do not cause queuing on Middletown Road.	Crashes less severe; however causes queuing and delays on Middletown Road where none currently exist.
Traffic Flow Efficiency *		LOS A	LOS C
Right-of-Way Impacts	Potential Displacements	0	0
	Required ROW Area	5,370 SF (0.12 AC)	19,985 SF (0.46 AC)
	Temporary Construction Easement Area	3,465 SF	3,655 SF
Environmental Impacts	Wetland Area	0 SF	0 SF
	Stream Length	0 LF	0 LF
	Farmland Soils of Importance	1,650 SF	10,080 SF
	Hazardous Waste	N/A	N/A
	Threatened & Endangered Species	N/A	N/A
	Section 4f Resource	Nissley Farm	Nissley Farm
	Above Ground Historic Resources	Nissley Farm (National Register Eligible)	Nissley Farm (National Register Eligible)
	Archaeological Resources	N/A	N/A
Utility Impacts	Aerial	0 LF	0 LF
	Water	0 LF	0 LF
	Gas	0 LF	0 LF
	Sewer	0 LF	0 LF
E&S / Stormwater	New Impervious Area	+1,145 SF	-690 SF
Constructability		Easier to construct. No advance staging of traffic control.	Additional traffic control staging to construct roundabout. More difficult materials, longer schedule.
Cost		\$399,300	\$1,398,600

Notes:

- The intersection has a low crash history, indicating that major safety improvements are not necessary
- Alternative 2 introduces new delays and queuing on Middletown Road, which currently operates efficiently
- Alternative 1 has lower costs, environmental disruption, and right-of-way impacts
- Analyses indicate that traffic signal warrant conditions are not met for current traffic volumes. Intersection signalization could be considered in future years should development occur, increasing traffic volumes at this location.

Recommendation is for an Unsignalized Intersection (Alternative 1)