

**Midway Road/CR 712  
from Glades Cut Off Road to Selvitz Road  
Design Traffic Technical Memorandum  
Final**

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Florida Department of Transportation – District 4

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**TABLE OF CONTENTS**

INTRODUCTION..... 1

EXISTING CONDITIONS..... 3

DATA COLLECTION AND VOLUME DEVELOPMENT ..... 6

    Data Collection..... 6

    Volume Development ..... 6

EXISTING OPERATIONAL ANALYSIS ..... 9

    Existing (2015) Conditions AM Peak Hour Operational Analysis ..... 9

    Existing (2015) Conditions PM Peak Hour Operational Analysis.....12

FUTURE GROWTH TREND ANALYSIS .....14

    FDOT Count Based Growth Rates .....14

    TCRPM Based Growth Rates .....14

    Combination of FDOT Regression Analysis and GTCRPM Growth Rates.....15

    Selected Growth Rates.....15

TURNING MOVEMENT AND AADT DATA FORECASTS .....17

FUTURE NO-BUILD CONDITIONS OPERATIONAL ANALYSIS .....24

    Planned and Programmed Improvement Projects .....24

    Future (2020) Uncapped Growth No-Build AM Peak Hour Operational Analysis .....24

    Future (2020) Uncapped Growth No-Build PM Peak Hour Operational Analysis.....27

    Future (2020) Limited Growth No-Build Conditions AM Peak Hour Operational Analysis..29

    Future (2020) Limited Growth No-Build Conditions PM Peak Hour Operational Analysis ..30

    Future (2040) Uncapped Growth No-Build Conditions AM Peak Hour Operational Analysis .....31

    Future (2040) Uncapped Growth No-Build Conditions PM Peak Hour Operational Analysis ..... 33

    Future (2040) Limited Growth Conditions No-Build AM Peak Hour Operational Analysis .35

    Future (2040) Limited Growth No-Build Conditions PM Peak Hour Operational Analysis ..36

FUTURE BUILD CONDITIONS CAPACITY ANALYSIS .....37

    Future (2020) Build Uncapped Growth Alternatives .....37

Future (2020) Build Uncapped Growth AM Peak Hour Operational Analysis .....38

Future (2020) Uncapped Growth Build PM Peak Hour Operational Analysis.....41

Future (2020) Limited Growth Build Alternative .....43

Future (2040) Uncapped Growth Build Alternative.....43

Future (2040) Uncapped Growth Build AM Peak Hour Operational Analysis .....44

Future (2040) Uncapped Growth Build PM Peak Hour Operational Analysis.....47

Future (2040) Limited Growth Build Alternative .....49

Future (2040) Limited Growth Build AM Peak Hour Operational Analysis .....50

Future (2040) Limited Growth Build PM Peak Hour Operational Analysis .....51

Jenkins Road Extension .....52

QUEUE ANALYSIS.....53

CONCLUSIONS.....56

**LIST OF APPENDICES**

- APPENDIX A: Data Collection
- APPENDIX B: Existing Conditions Synchro Analysis Worksheets
- APPENDIX C: Growth Analysis
- APPENDIX D: TMTTool Worksheets
- APPENDIX E: 2020 No-Build Conditions Synchro Analysis Worksheets
- APPENDIX F: 2040 No-Build Conditions Synchro Analysis Worksheets
- APPENDIX G: 2020 Build Alternative Conditions Synchro Analysis Worksheets
- APPENDIX H: 2040 Build Alternative Conditions Synchro Analysis Worksheets

## LIST OF FIGURES

Figure 1: Study Area .....	1
Figure 2: Study Area Lane Configuration and Intersection Control.....	5
Figure 3: Existing 2015 Annual Average Daily Traffic .....	7
Figure 4: Existing 2015 Peak Hour Volumes .....	8
Figure 5: 2020 and 2040 Uncapped Growth Annual Average Daily Traffic .....	18
Figure 6: 2020 and 2040 Limited Growth Annual Average Daily Traffic.....	19
Figure 7: 2020 Uncapped Growth Peak Hour Volumes.....	20
Figure 8: 2040 Uncapped Growth Peak Hour Volumes.....	21
Figure 9: 2020 Limited Growth Peak Hour Volumes .....	22
Figure 10: 2040 Limited Growth Peak Hour Volumes .....	23
Figure 11: 2020 Build Uncapped Growth Alternative Improvements.....	38
Figure 12: 2040 Uncapped Growth Build Alternative Improvements .....	44
Figure 13: 2040 Limited Growth Build Alternative Improvements .....	49

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## LIST OF TABLES

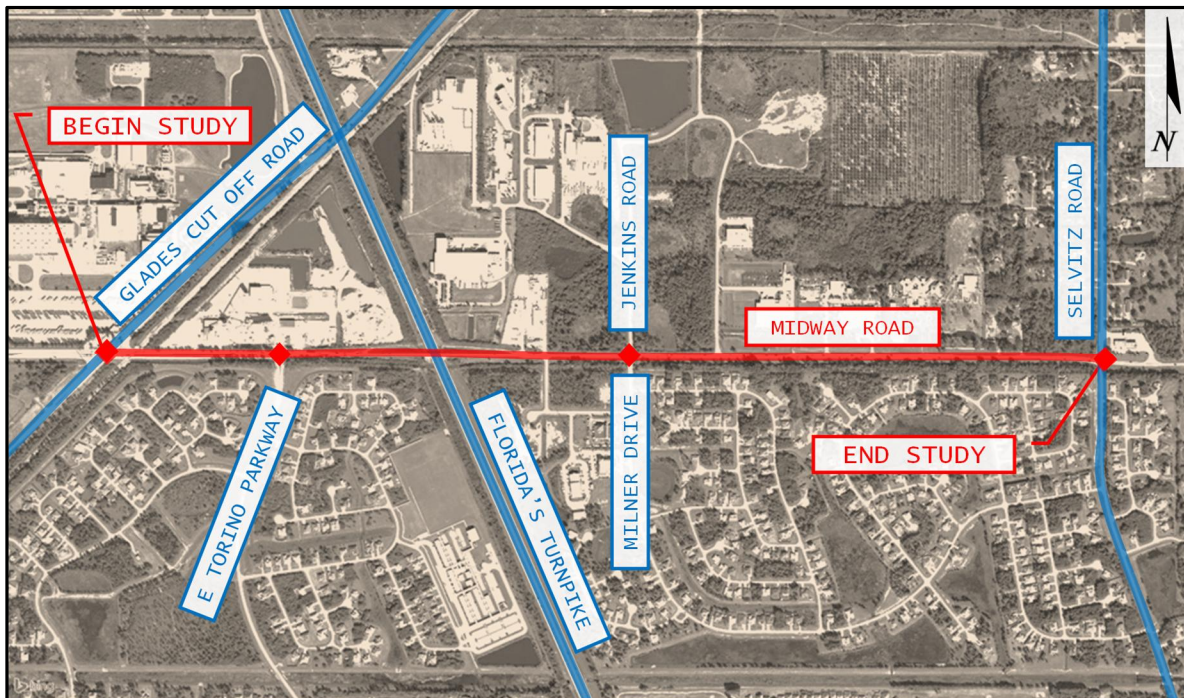
Table 1: Existing (2015) AM Peak Hour Operations Summary.....	11
Table 2: Existing (2015) PM Peak Hour Operations Summary .....	13
Table 3: Growth Rate Comparison.....	16
Table 4: Future (2020) Uncapped Growth No-Build AM Peak Hour Operations Summary .....	26
Table 5: Future (2020) Uncapped Growth No-Build PM Peak Hour Operations Summary .....	28
Table 6: Future (2020) Limited Growth No-Build AM Peak Hour Operations Summary .....	29
Table 7: Future (2020) No-Build Limited Growth PM Peak Hour Operations Summary.....	30
Table 8: Future (2040) Uncapped Growth No-Build AM Peak Hour Operations Summary.....	32
Table 9: Future (2040) Uncapped Growth No-Build PM Peak Hour Operations Summary .....	34
Table 10: Future (2040) Limited Growth No-Build AM Peak Hour Operations Summary .....	35
Table 11: Future (2040) No-Build Limited Growth PM Peak Hour Operations Summary .....	36
Table 12: Future (2040) Build Segment Capacity Analysis.....	37
Table 13: Future (2020) Uncapped Growth Build AM Peak Hour Operations Summary .....	40
Table 14: Future (2020) Uncapped Growth Build PM Peak Hour Operations Summary.....	42
Table 15: Future (2040) Uncapped Growth Build AM Peak Hour Operations Summary .....	46
Table 16: Future (2040) Uncapped Growth Build PM Peak Hour Operations Summary.....	48
Table 17: Future (2040) Limited Growth Build AM Peak Hour Operations Summary .....	50
Table 18: Future (2040) Limited Growth Build PM Peak Hour Operations Summary .....	51
Table 19: Future (2040) Build Segment Capacity Analysis.....	52
Table 20: 95th Percentile Uncapped Growth Build Queuing Analysis.....	54
Table 21: 95th Percentile Limited Growth Build Queuing Analysis .....	55

## INTRODUCTION

A Project Development and Environment (PD&E) study was performed to develop a preferred alternative for Midway Road/County Road (CR) 712. The project study area (see Figure 1) spans from the intersection of Midway Road at Glades Cut Off Road to the intersection of Midway Road at Selvitz Road. The total length of the study area along Midway Road is approximately 1.60 miles and includes one (1) bridge structure over Florida's Turnpike. The study area includes the following intersections:

- a) Midway Road at Glades Cut Off Road (signalized)
- b) Midway Road at NW East Torino Parkway (signalized)
- c) Midway Road at NW Milner Drive-S Jenkins Road (unsignalized)
- d) Midway Road at Selvitz Road (signalized)

**Figure 1** depicts the study area along Midway Road from Glades Cut Off road to Selvitz Road.



**Figure 1: Study Area**

Midway Road is being studied to evaluate widening the roadway segment from a two (2)-lane segment to a four (4)-lane segment including additional intersection improvements. Per the scope of services, considerations for all alternatives include “...special treatment and/or additional lanes at major intersections, and widening of the crossroads up to 1,000 feet in each direction.”

This memorandum presents the existing conditions evaluation, data collection, volume development, safety analysis, growth trend analysis, forecasted traffic data, and existing and future operational analyses. The future operational analysis was performed for the anticipated opening year of 2020 and design year of 2040.

## EXISTING CONDITIONS

The study area is located within unincorporated St. Lucie County. Additionally, a portion of the canal adjacent to the south of Midway Road is within the municipal limits of the City of Port St. Lucie. Midway Road is a four (4)-lane east-west divided urban principal arterial from Glades Cut Off Road to approximately 425 feet west of NW East Torino Parkway. The existing typical section from Glades Cut Off Road includes two (2) 12-foot wide westbound lanes, a grassy median varying between four (4) and 28-feet wide, two (2) 12-foot eastbound lanes, and a six (6)-foot sidewalk on the north side. Approximately 425 feet west of NW East Torino Parkway, the outside eastbound through lane transitions to a right-turn only drop lane as Midway Road is a two-lane roadway east of NW East Torino Parkway. From NW East Torino Parkway to Selvitz Road, Midway Road is a two (2)-lane undivided roadway. The existing typical section from NW East Torino Parkway to Selvitz Road includes one (1) 11-foot westbound lane and one (1) 11-foot eastbound lane. The posted speed limit within the study area is 45 miles per hour (mph) in both directions.

Four (4) intersections were studied:

- **Midway Road at Glades Cut Off Road:** The Glades Cut Off Road intersection is located on the western limits of the study area and has four (4) approaches. Glades Cut Off Road runs in the northeast-southwest direction. The eastbound approach has two (2) left-turn lanes, one (1) through lane, and one (1) shared through/channelized right-turn lane. The westbound approach has one (1) left-turn lane, one (1) through lane, and one (1) shared through/channelized right-turn lane. The northeastbound and southwestbound approaches each have one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane. The stop bar for the northeastbound left-turn lane is approximately 90 feet upstream from the stop bar for the northeastbound through lane due to the skewed intersection geometry. The intersection is under signal control.
- **Midway Road at NW East Torino Parkway:** The NW East Torino Parkway intersection is located approximately 1,460 feet east of Glades Cut Off Road. The intersection has four (4) approaches. NW East Torino Parkway is oriented in the north-south direction with its northern terminus at Midway Road. The southbound approach (north leg) of the



intersection provides access to the Cemex concrete plant. The eastbound approach has one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane. The westbound approach has one (1) left-turn lane, one (1) through lane, and one (1) shared through/right-turn lane. The northbound and southbound approaches each have one (1) left-turn lane and one (1) shared through/right-turn lane. The intersection is under signal control.

- **Midway Road at NW Milner Drive-S Jenkins Road:** The NW Milner Drive-S Jenkins Road intersection is located approximately 2,970 feet east of NW East Torino Parkway. The intersection has four (4) approaches. NW Milner Drive is oriented in the north-south direction with its northern terminus at Midway Road. S Jenkins Drive is oriented in the north-south direction with its southern terminus at Midway Road. The eastbound approach has one (1) left-turn lane and one (1) shared through/right-turn lane. The westbound approach has one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane. The northbound approach has one (1) left-turn lane and one (1) through/right-turn lane. The southbound approach has one (1) shared left-turn/through/right-turn lane. The NW Miler Drive and S Jenkins Road approaches to the intersection are under stop control and the Midway Road approaches are free-flow.
- **Midway Road at Selvitz Road:** The Selvitz Road intersection is located approximately 3,980 feet east of NW Milner Drive-S Jenkins Road. The intersection has four (4) approaches. The eastbound and westbound directions each have one (1) left-turn lane and one (1) shared through/right-turn lane. The northbound and southbound approaches each have one (1) shared left-turn/through/right-turn lane.

Figure 2 depicts the lane configuration and intersection control throughout the entire study area.

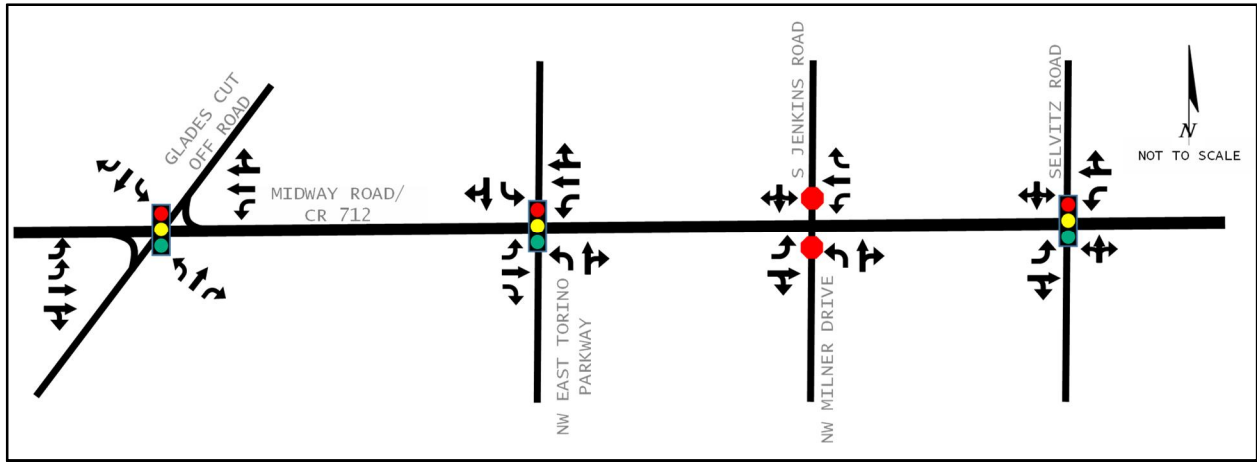


Figure 2: Study Area Lane Configuration and Intersection Control

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## DATA COLLECTION AND VOLUME DEVELOPMENT

### Data Collection

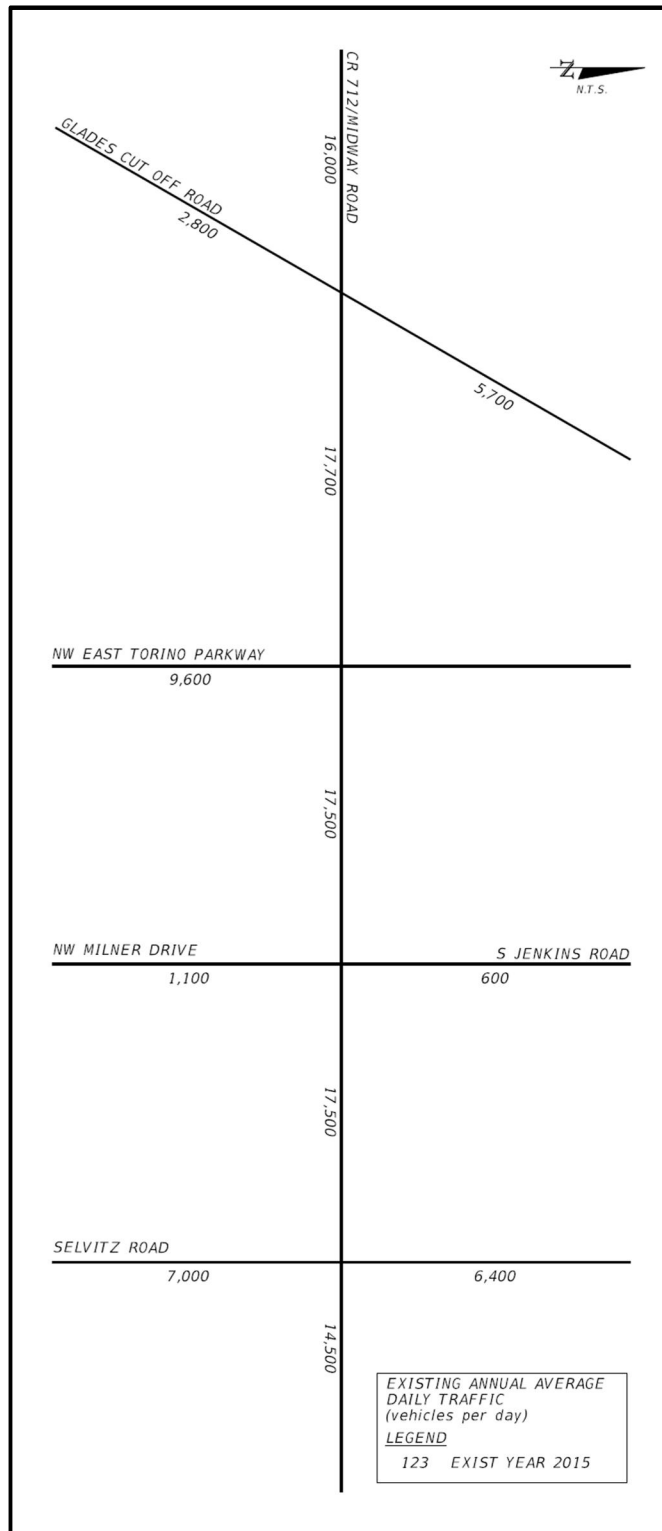
In order to develop the future traffic forecasts for the Midway Road corridor, traffic data was collected by FDOT throughout the study area. The following data collection efforts were completed by FDOT:

- Three (3)-day, six (6)-hour (7:00-10:00 AM and 4:00-7:00 PM) intersection turning movement volumes at four (4) locations within the study area:
  - Glades Cut Off Road
  - NW East Torino Parkway
  - NW Milner Drive-S Jenkins Road
  - Selvitz Road
- Seventy-two (72)-hour approach traffic volumes
- Seventy-two (72)-hour vehicle classification counts

The aforementioned data collection can be found in **Appendix A**.

### Volume Development

Existing year 2015 AADT are shown in **Figure 3**. The intersection turning movement data were adjusted to peak season volumes using an FDOT peak season conversion factor of 0.98. **Figure 4** illustrates the adjusted existing AM and PM peak hour turning movement counts.



**Figure 3: Existing 2015 Annual Average Daily Traffic**

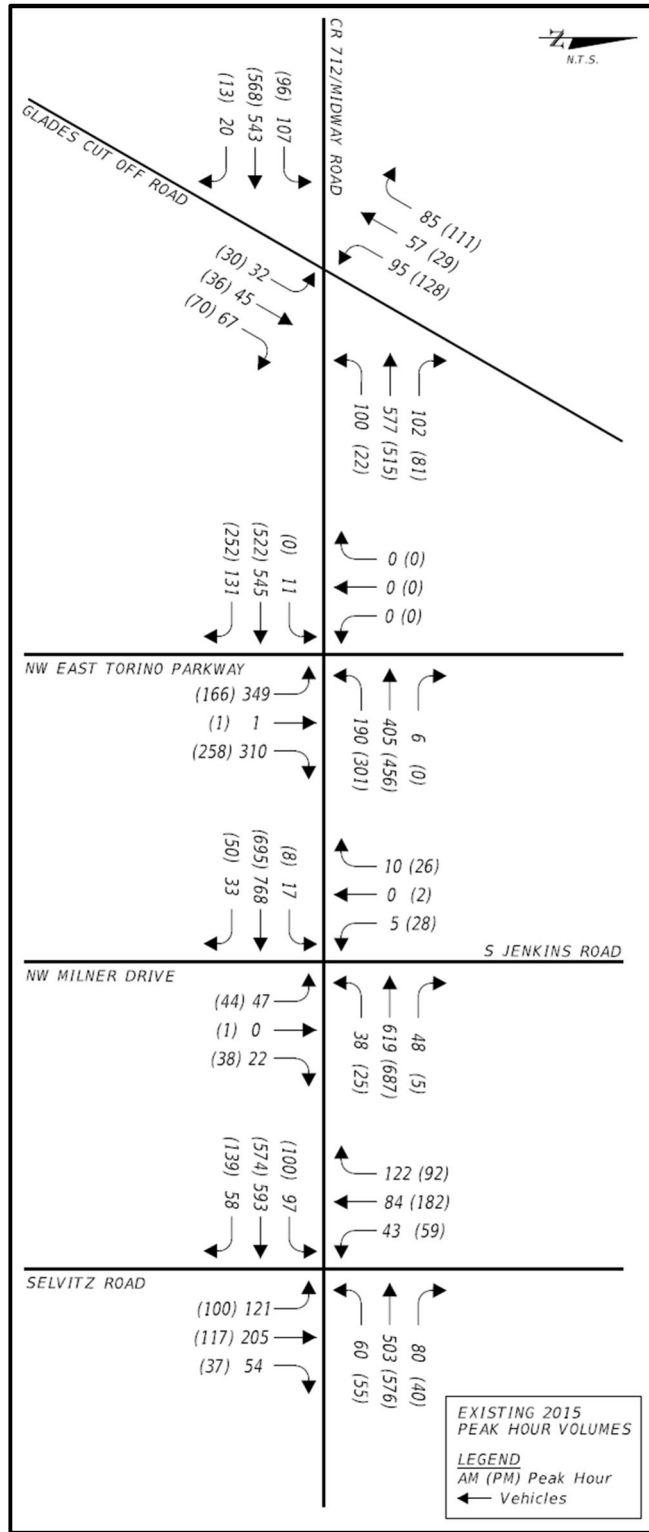


Figure 4: Existing 2015 Peak Hour Volumes

## EXISTING OPERATIONAL ANALYSIS

The operational analysis was performed at all intersections within the study area for the existing 2015, future 2020, and future 2040 traffic conditions. The study intersections were analyzed using Trafficware’s *Synchro 9.1* software, which utilizes methodologies outlined in the *Highway Capacity Manual*, 2010 Edition (HCM 2010). The intersection analyses were conducted for AM and PM peak hours. Intersection level of service (LOS) was used as the performance measure for the intersections. In general, vehicular LOS reflects quality of service provided by a roadway facility and it depends on several factors including travel time, delay, speed, freedom to maneuver, traffic interruptions, and comfort. HCM 2010 provides the following definition:

*“Intersection level of service is based on average delay per vehicle. Control delay includes initial deceleration delay, queue move up time to first in line at the intersection, stopped delay as first car in queue, and final acceleration delay. The factors such as signal progression, random arrival of vehicles, oversaturation queues, and type of signal control are contributory to control delay.”*

The existing signal timings were obtained from the St. Lucie County Traffic Division and are provided in **Appendix A**.

### Existing (2015) Conditions AM Peak Hour Operational Analysis

**Table 1** presents AM peak hour delay and LOS for the study intersections. The intersection of Midway Road at Glades Cut Off Road currently operates at LOS C with an average delay 22.5 seconds per vehicle. All approaches currently operate at LOS C or better. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The intersection of Midway Road at NW East Torino Parkway currently operates at LOS C with an average delay of 22.2 seconds per vehicle. The eastbound, westbound, and northbound approaches currently operate at LOS C or better. Delay and LOS for the southbound approach and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, all approaches to the intersection of Midway Road at NW Milner Drive-S Jenkins Road currently operate at LOS C or better. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road currently operates at LOS C with an average delay of 30.8 seconds per vehicle. All approaches currently operate at LOS D or better.

The detailed existing intersection capacity analyses are included in **Appendix B**.

**Table 1: Existing (2015) AM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service					
				Movement	Approach	Intersection			
Midway Road at Glades Cut Off Road	Signalized	EB	L	23.6 / C	22.4 / C	22.5 / C			
			T	22.2 / C					
			R	N/A <sup>(2)</sup>					
		WB	L	25.2 / C	21.7 / C				
			T	21.0 / C					
			R	N/A <sup>(2)</sup>					
		NB	L	30.4 / C	19.8 / B				
			T	25.6 / C					
			R	10.9 / B					
		SB	L	30.0 / C	26.3 / C				
			T	23.1 / C					
			R	24.4 / C					
Midway Road at NW East Torino Parkway	Signalized	EB	L	11.7 / B	19.4 / B	22.2 / C			
			T	20.8 / C					
			R	14.0 / B					
		WB	L	15.9 / B	12.4 / B				
			T	10.9 / B					
			R	10.8 / B					
		NB	L	33.7 / C	34.1 / C				
			T/R	34.5 / C					
		SB	L	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>				
			T/R						
		Midway Road at NW Milner Drive- S Jenkins Road	Two-way Stop	EB	L		9.1 / A	(5)	(5)
					T/R		N/A <sup>(4)</sup>		
WB	L			10.1 / B	(5)				
	T/R			N/A <sup>(4)</sup>					
NB	L			28.7 / D	23.5 / C				
	T/R			12.4 / B					
SB	L/T/R			15.6 / C	15.6 / C				
Midway Road at Selvitz Road	Signalized			EB	L	17.9 / B	31.6 / C	30.8 / C	
		T/R	33.6 / C						
		WB	L	18.9 / B	27.9 / C				
			T/R	28.8 / C					
		NB	L/T/R	36.8 / D	36.8 / D				
		SB	L/T/R	26.7 / C	26.7 / C				

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
Movement - L = left-turn; T = through; R = right-turn

- Note:
- (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.
  - (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.
  - (3) Movement/approach has no volume. Delay and LOS are not defined.
  - (4) Movement is uncontrolled. Delay and LOS are not defined.
  - (5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection



### **Existing (2015) Conditions PM Peak Hour Operational Analysis**

**Table 2** presents existing PM peak hour delay and LOS for the study intersections. The intersection of Midway Road at Glades Cut Off Road currently operates at LOS C with an average delay 21.7 seconds per vehicle. All approaches currently operate at LOS C or better. Delay and LOS for the eastbound and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The intersection of Midway Road at NW East Torino Parkway currently operates at LOS B with an average delay of 18.7 seconds per vehicle. The eastbound, westbound, and northbound approaches currently operate at LOS C or better. Delay and LOS for the eastbound left-turn movement, the southbound approach, and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, all approaches to the intersection of Midway Road at NW Milner Drive-S Jenkins Road currently operate at LOS C or better. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road currently operates at LOS C with an average delay of 29.2 seconds per vehicle. All approaches currently operate at LOS C.

The detailed existing intersection capacity analyses are included in **Appendix B**.

**Table 2: Existing (2015) PM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service					
				Movement	Approach	Intersection			
Midway Road at Glades Cut Off Road	Signalized	EB	L	22.3 / C	21.1 / C	21.7 / C			
			T	20.9 / C					
			R	N/A <sup>(2)</sup>					
		WB	L	23.4 / C	21.4 / C				
			T	21.3 / C					
			R	N/A <sup>(2)</sup>					
		NB	L	28.9 / C	18.2 / B				
			T	23.5 / C					
			R	10.9 / B					
		SB	L	29.0 / C	25.3 / C				
			T	20.2 / C					
			R	22.4 / C					
Midway Road at NW East Torino Parkway	Signalized	EB	L	N/A <sup>(4)</sup>	18.0 / B	18.7 / B			
			T	19.3 / B					
			R	15.4 / B					
		WB	L	16.8 / B	10.4 / B				
			T	6.2 / A					
			R						
		NB	L	31.3 / C	34.7 / C				
			T/R	36.9 / D					
		SB	L	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>				
			T/R						
		Midway Road at NW Milner Drive- S Jenkins Road	Two-way Stop	EB	L		9.1 / A	(5)	(5)
					T/R		N/A <sup>(4)</sup>		
WB	L			9.4 / A	(5)				
	T/R			N/A <sup>(4)</sup>					
NB	L			24.1 / C	18.4 / C				
	T/R			12.0 / B					
SB	L/T/R			18.8 / C	18.8 / C				
Midway Road at Selvitz Road	Signalized			EB	L	15.7 / B	31.2 / C	29.2 / C	
		T/R	33.3 / C						
		WB	L	18.0 / B	24.3 / C				
			T/R	24.9 / C					
		NB	L/T/R	31.9 / C	31.9 / C				
		SB	L/T/R	31.9 / C	31.9 / C				

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
Movement - L = left-turn; T = through; R = right-turn

- Note:
- (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.
  - (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.
  - (3) Movement/approach has no volume. Delay and LOS are not defined.
  - (4) Movement is uncontrolled. Delay and LOS are not defined.
  - (5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection

## FUTURE GROWTH TREND ANALYSIS

The objective of the growth trend analysis is to establish growth rates for forecasting 2020 and 2040 traffic volumes. Growth rates were evaluated utilizing three (3) forecasting methodologies:

- a) Regression analysis of the most recent five (5) years and 10 years of the most recent historical AADTs from FDOT count sites
- b) Regression analysis of at least five (5) years of the most recent historical AADTs from FDOT count sites and the St. Lucie County 2040 model volumes from the Treasure Coast Regional Planning Model (TCRPM)
- c) Growth between the base year 2010 and the 2040 TCRPM roadway volumes

### FDOT Count Based Growth Rates

A regression analysis was conducted using historical count data for the five (5) and 10 most recent years for which data were available at the following count locations:

- 94-5140: Midway Road east of SR 9/I-95
- 94-7028: Midway Road west of Selvitz Road
- 94-8538: Midway Road from Glades Road to Florida’s Turnpike
- 94-8539: Midway Road from Selvitz Road to West Virginia Drive
- 94-0279: Glades Cut off Road south of Midway Road
- 94-7011: Glades Cut Off Road west of Selvitz Road
- 94-7064: East Torino Parkway south of Midway Road
- 94-8520: Selvitz Road, from Peachtree Boulevard to Midway Road

The historical growth rates provided in **Table 3** were calculated using the “Traffic Trends Analysis Tool” spreadsheet. A linear trendline was fit to the data. The historical trendline growth analysis worksheets are included in **Appendix C**.

### TCRPM Based Growth Rates

The 2040 TCRPM was used to estimate growth rates for traffic segments as well as for the traffic analysis zone (TAZ) adjacent to where Jenkins Road lies as Jenkins Road is not included within the model. The TCRPM growth rates were calculated by interpolating the 2010 TCRPM and 2040 TCRPM volumes to 2015. The TCRPM interpolated 2015 volumes were then validated against the existing counts. Adjustments to the 2015 TCRPM volumes were applied as necessary to bring

the model data in-line with existing counts. The 2015 adjustments were considered a baseline for future year analyses and were therefore also applied to the 2040 TCRPM volumes. The validated 2015 TCRPM volumes and the 2040 adjusted TCRPM volumes were then utilized to calculate a linear growth rate for future growth. **Table 3** provides the TCRPM growth rates for both the traffic segment analysis and the TAZ. The TCRPM results are also included in **Appendix C**. The no-build and build model runs assume the widening of Midway Road from a two (2)-lane section to a four (4)-lane section from west of NW East Torino Parkway to east of Selvitz Road to match the four (4)-lane section currently under construction east of Selvitz Road. It was determined that the four (4) lane section would provide sufficient capacity to accommodate future traffic through the 2040 design year; therefore, a six (6) lane section was not modeled.

### **Combination of FDOT Regression Analysis and GTCRPM Growth Rates**

Volumes obtained from the 2040 TCRPM were included in the regression analysis along with the most recent five (5) years of count data available for each location that were used in the count based growth analysis. The “Traffic Trends Analysis Tool” spreadsheet was used to fit a linear trendline to the data. The combined historical and TCRPM trendline analysis worksheets are included in **Appendix C**. Growth rates obtained from the combined analysis are provided in **Table 3**.

### **Selected Growth Rates**

Engineering judgement was utilized to determine the recommended growth rate by evaluating the historical growth rates, historical and model growth rates, and the model growth rates. The selected growth rates are provided in **Table 3**.

**Table 3: Growth Rate Comparison**

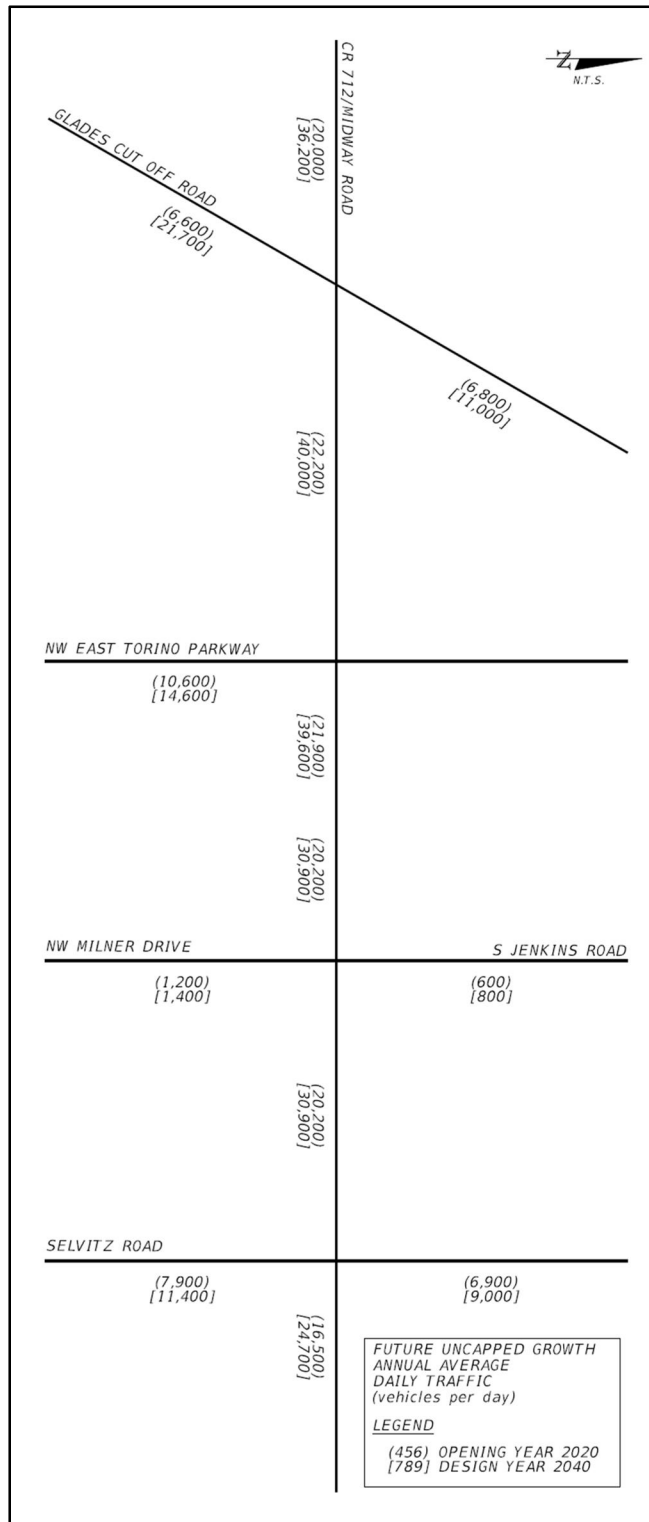
Location Description	5 Year Historical Growth Rate	10 Year Historical Growth Rate	5 Year Historical + TCRPM Growth Rate	TCRPM Growth Rate	Recommended Growth Rate
Glades Cut Off Rd north of Midway Rd	10.9%	3.2%	6.3%	3.7%	3.7%
Midway Rd east of Glades Cut off Rd	6.9%	4.4%	5.0%	3.5%	5.0%
Glades Cut Off Rd south of Midway Rd	3.5%	1.6%	90.0%	27.0%	27.0%
Midway Rd west of Glades Cut off Rd	3.7%	0.3%	5.0%	4.5%	5.0%
Midway Rd east of E Torino Pkwy	6.9%	4.4%	5.0%	2.7%	5.0%
E Torino Pkwy south of Midway Rd	-0.2%	-0.4%	2.0%	2.1%	2.1%
Midway Rd west of E Torino Pkwy	6.9%	4.4%	5.0%	3.5%	5.0%
Midway Rd east of Jenkins Rd	4.7%	1.9%	3.1%	2.8%	3.1%
Midway Rd west of Jenkins Rd	6.9%	4.4%	5.0%	2.8%	3.1%
Selvitz Rd north of Midway Rd	-	-	-	1.6%	1.6%
Midway Rd east of Selvitz Rd	4.4%	3.6%	2.8%	2.8%	2.8%
Selvitz Rd south of Midway Rd	-1.6%	-1.6%	1.7%	2.5%	2.5%
Midway Rd west of Selvitz Rd	4.7%	1.9%	3.1%	2.6%	3.1%

As shown in **Table 3** the recommended growth rate for all roadway segments is 5.0% or lower except for Glades Cut Off Road south of Midway Road which had a recommended growth rate of 27.0% based on TCRPM model growth. The model growth along Glades Cut Off Road south of Midway Road was a result of increases in population and employment in the “western annex” that were reflected in the 2040 TCRPM scenario. Based on conversations with St. Lucie County and St. Lucie TPO staff, the population and employment increases are at least partially due to Developments of Regional Impact (DRI’s) in the area that may or may not be built by the design year 2040 for Midway Road. Therefore, a second scenario was analyzed which limited the growth along Glades Cut Off Road to the south at 5.0%, consistent with the growth rates for Midway Road east and west of the intersection, and Glades Road Cut Off Road to the north of the intersection.

## TURNING MOVEMENT AND AADT DATA FORECASTS

FDOT's TMTOOL spreadsheet was used to forecast turning movement volumes for 2020 and 2040 No-Build and Build conditions. The TMTOOL spreadsheet utilizes background growth rates, base AADT volumes, and existing turning movement counts to calculate the future turning movement volumes. The TMTOOL spreadsheet applies the growth rate to base year volumes in order to forecast future conditions. Additionally, turning volume verification macros are included within the TMTOOL spreadsheet to check if any turning movement is forecast to have zero or negative growth, and if necessary override the forecasted volume with a minimal amount of growth.

The TMTOOL output worksheets are included in **Appendix D**. **Figure 5** shows the uncapped growth 2020 and 2040 AADT and **Figure 6** shows the limited growth 2020 and 2040 AADT. **Figure 7** shows opening year 2020 uncapped growth turning movement volumes, Error! Reference source not found. **Figure 8** shows design year 2040 uncapped turning movement volumes, **Figure 9** shows opening year 2020 limited growth turning movement volumes, and **Figure 10** shows design year 2040 limited growth turning movement volumes.



**Figure 5: 2020 and 2040 Uncapped Growth Annual Average Daily Traffic**

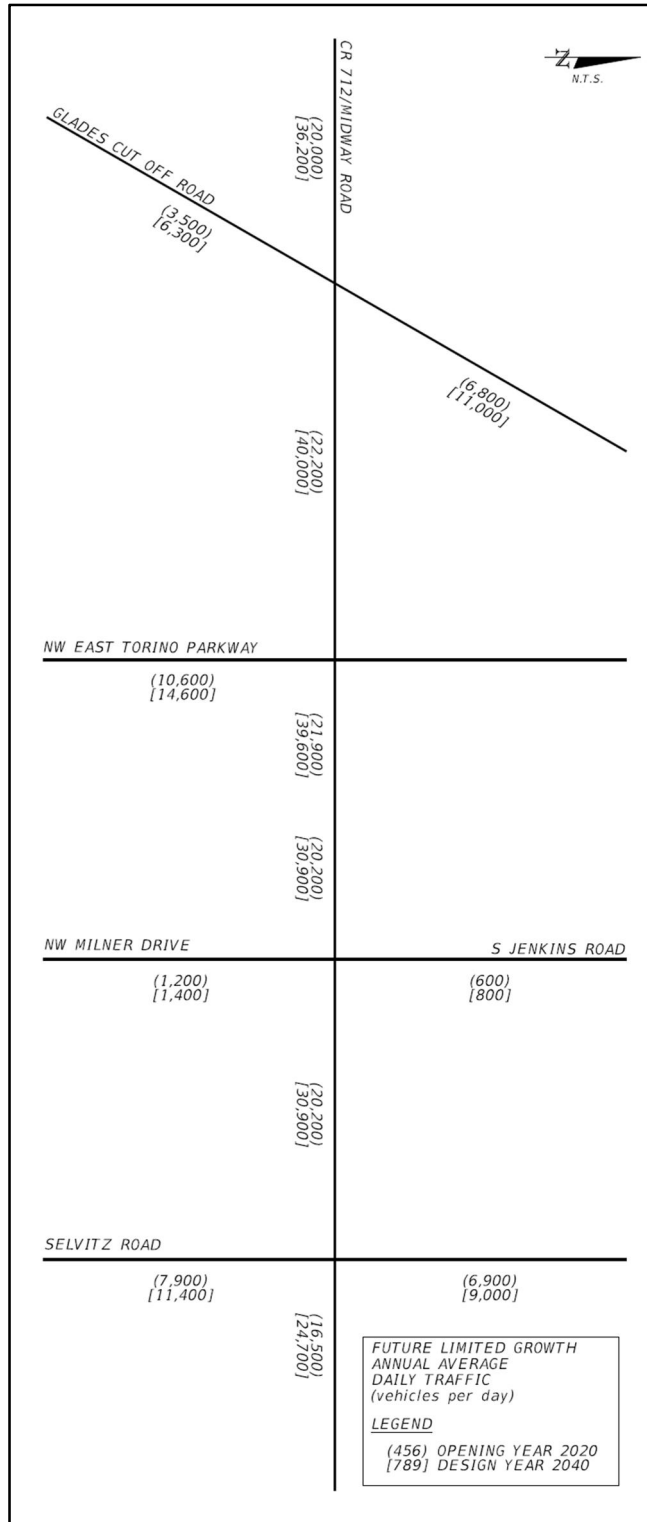


Figure 6: 2020 and 2040 Limited Growth Annual Average Daily Traffic



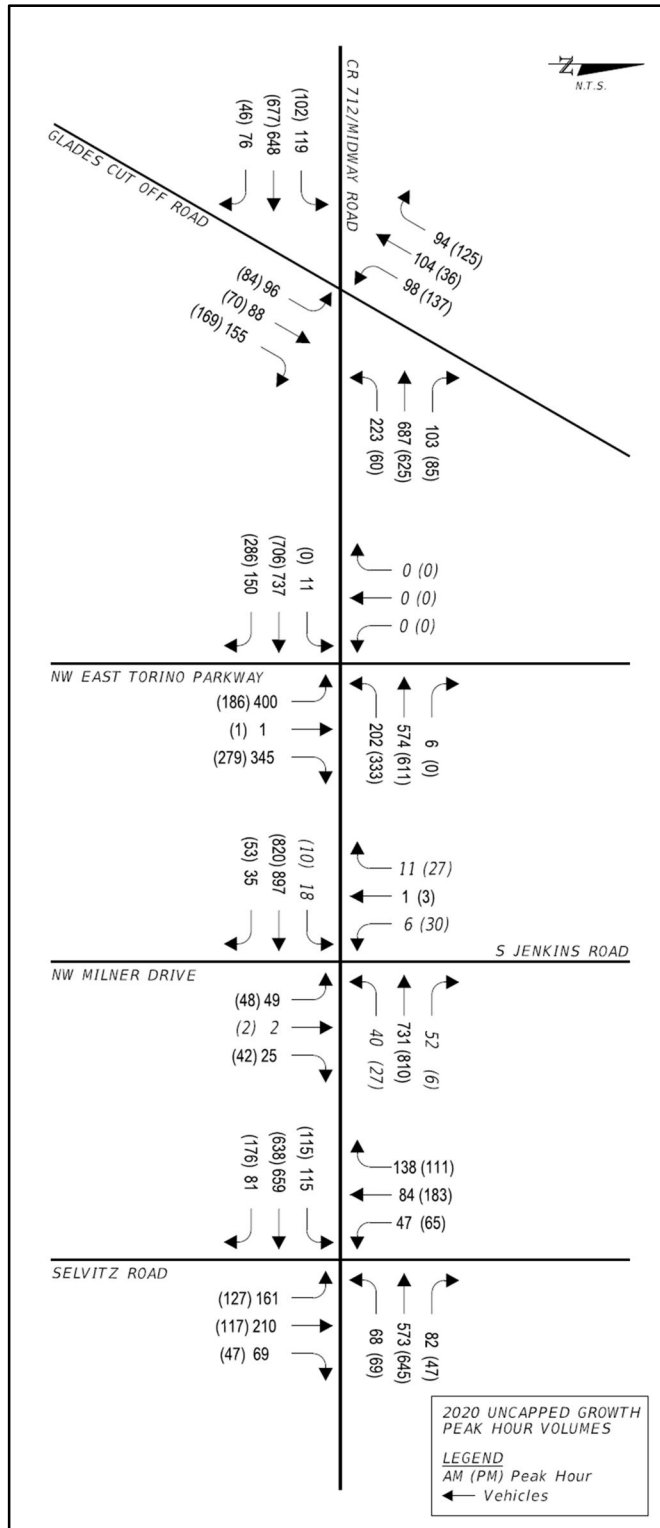
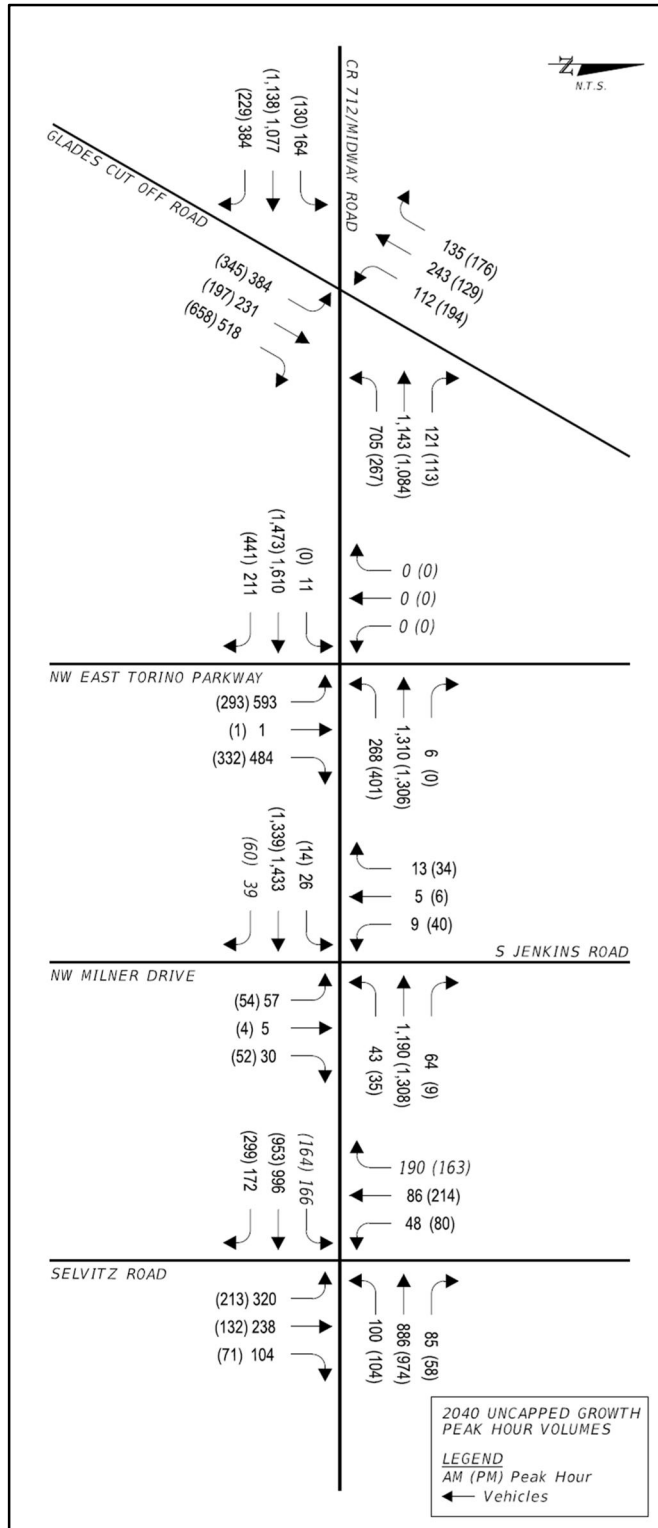
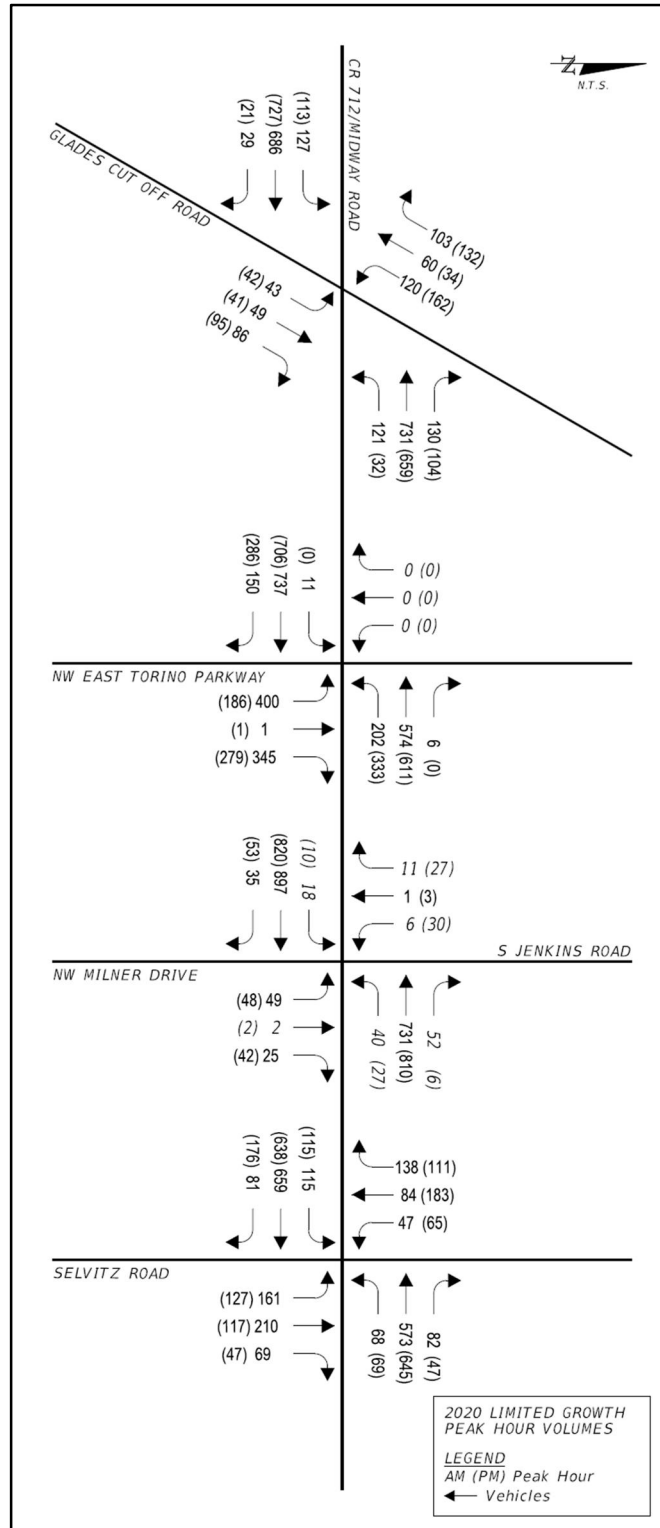


Figure 7: 2020 Uncapped Growth Peak Hour Volumes



**Figure 8: 2040 Uncapped Growth Peak Hour Volumes**



**Figure 9: 2020 Limited Growth Peak Hour Volumes**

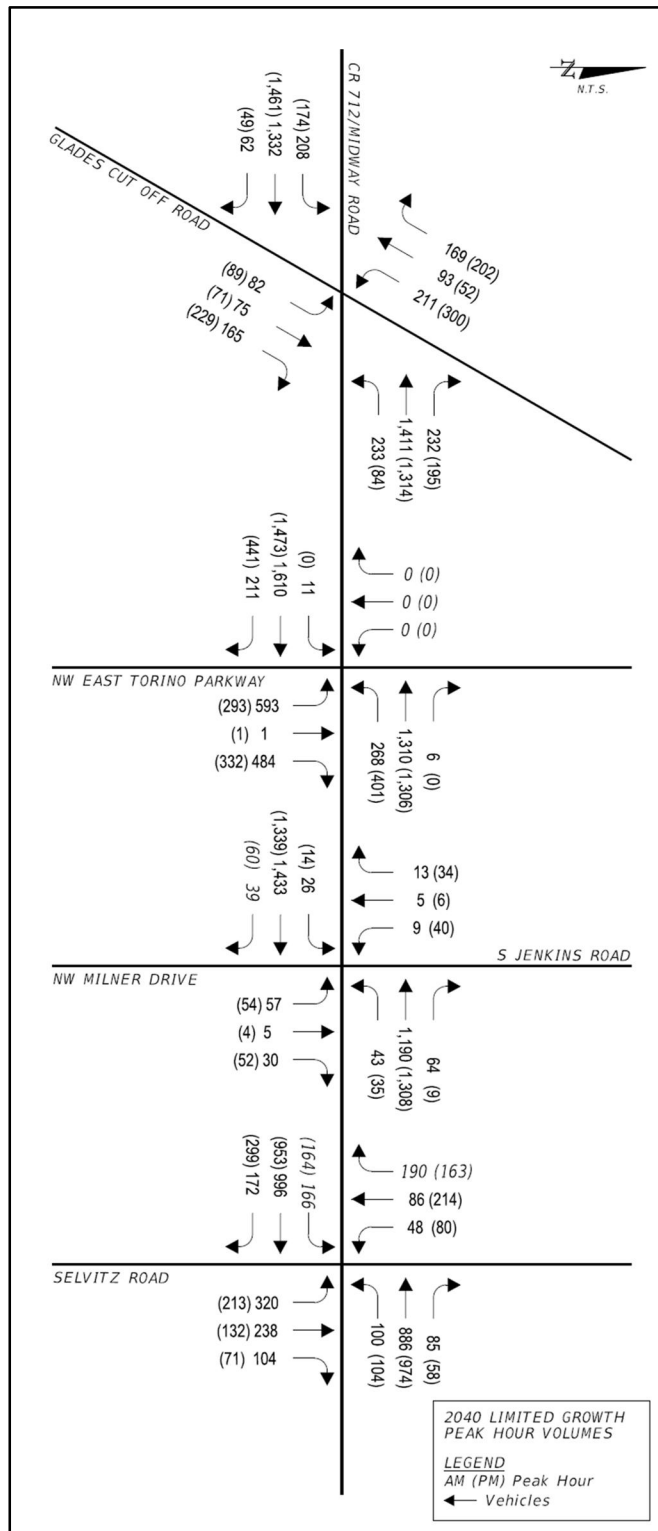


Figure 10: 2040 Limited Growth Peak Hour Volumes

## **FUTURE NO-BUILD CONDITIONS OPERATIONAL ANALYSIS**

The future no-build operational analysis evaluates the impacts of growth in the area if no improvements beyond what is currently planned or programmed occur in the corridor. This section presents intersection analyses for 2020 and 2040 no-build traffic conditions for the uncapped growth and limited growth scenarios. Traffic signal timings were not optimized for no-build traffic conditions. The no-build alternative serves as a benchmark for evaluating other alternatives.

### **Planned and Programmed Improvement Projects**

The St. Lucie Transportation Planning Organization (TPO) Transportation Improvement Program (TIP) and St. Lucie County Engineering Projects were reviewed to determine if there were any planned or programmed improvements within the study corridor. The St. Lucie TPO TIP lists this PD&E associated with adding two (2) lanes to the study corridor (Project Number 2314403) as a Priority Project. The St. Lucie County Engineering Projects list includes the widening of Midway Road from Selvitz Road to SR-615/S 25 Street as having started in December 2014 with a two (2)-year timeline.

### **Future (2020) Uncapped Growth No-Build AM Peak Hour Operational Analysis**

**Table 4** presents the future 2020 uncapped growth no-build AM delay and LOS for the study intersections. The intersection of Midway Road at Glades Cut Off Road is anticipated to operate at LOS C with an average delay of 31.7 seconds per vehicle. The northbound approach and northbound right-turn movement are anticipated to operate at LOS E or worse. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The intersection of Midway Road at NW East Torino Parkway is anticipated to operate at LOS C with an average delay of 23.7 seconds per vehicle. The eastbound, westbound, and northbound approaches are anticipated to operate at LOS D or better. Delay and LOS for the southbound approach and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, all approaches

to the intersection of Midway Road at NW Milner Drive-S Jenkins Road are anticipated to operate at LOS C or better. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road is anticipated to operate at LOS B with an average delay of 17.0 seconds per vehicle. All movements and approaches are anticipated to operate at LOS C or better

The detailed future 2020 uncapped growth no-build intersection capacity analyses are included in **Appendix E.**

**Table 4: Future (2020) Uncapped Growth No-Build AM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service					
				Movement	Approach	Intersection			
Midway Road at Glades Cut Off Road	Signalized	EB	L	27.0 / C	24.3 / C	31.7 / C			
			T	23.8 / C					
			R	N/A <sup>(2)</sup>					
		WB	L	39.3 / D	25.2 / C				
			T	20.6 / C					
			R	N/A <sup>(2)</sup>					
		NB	L	34.7 / C	64.2 / E				
			T	31.5 / C					
			R	100.9 / F					
		SB	L	34.9 / C	34.1 / C				
			T	32.8 / C					
			R	34.6 / C					
Midway Road at NW East Torino Parkway	Signalized	EB	L	13.1 / B	20.8 / C	23.7 / C			
			T	20.9 / C					
			R	20.9 / C					
		WB	L	16.5 / B	13.9 / B				
			T	12.9 / B					
			R	12.9 / B					
		NB	L	37.7 / D	37.7 / D				
			T/R	37.6 / D					
		SB	L	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>				
			T/R						
		Midway Road at NW Milner Drive- S Jenkins Road	Two-way Stop	EB	L		9.9 / A	(5)	(5)
					T/R		N/A <sup>(4)</sup>		
WB	L			10.9 / B	(5)				
	T/R			N/A <sup>(4)</sup>					
NB	L			18.0 / C	15.5 / C				
	T/R			10.9 / B					
SB	L/T/R			12.3 / B	12.3 / B				
Midway Road at Selvitz Road	Signalized			EB	L	9.9 / A	13.9 / B	17.0 / B	
		T	14.8 / B						
		R	12.3 / B						
		WB	L	10.5 / B	15.4 / B				
			T	15.9 / B					
			R	15.9 / B					
		NB	L	25.3 / C	22.7 / C				
			T	21.2 / C					
			R	21.3 / C					
		SB	L	24.1 / C	21.5 / C				
			T	20.1 / C					
			R	21.5 / C					

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
 Movement - L = left-turn; T = through; R = right-turn  
 Note: (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.  
 (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.  
 (3) Movement/approach has no volume. Delay and LOS are not defined.  
 (4) Movement is uncontrolled. Delay and LOS are not defined.  
 (5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection

**Future (2020) Uncapped Growth No-Build PM Peak Hour Operational Analysis**

**Table 5** presents the future 2020 uncapped growth no-build PM operations results for the study intersections. The intersection of Midway Road at Glades Cut Off Road is anticipated to operate at LOS C with an average delay of 27.9 seconds per vehicle. All approaches are anticipated to operate at LOS D or better. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The intersection of Midway Road at NW East Torino Parkway is anticipated to operate at LOS C with an average delay of 22.0 seconds per vehicle. All approaches are anticipated to operate at LOS D or better. The northbound right-turn approach is anticipated to operate at LOS F. Delay and LOS for the southbound approach and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, all approaches to the intersection of Midway Road at NW Milner Drive-S Jenkins Road are anticipated to operate at LOS C or better. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road are anticipated to operate at LOS B with an average delay of 16.2 seconds per vehicle. All movements and approaches are anticipated to operate at LOS C or better

The detailed future 2020 uncapped growth no-build intersection capacity analyses are included in **Appendix E**.



**Table 5: Future (2020) Uncapped Growth No-Build PM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service					
				Movement	Approach	Intersection			
Midway Road at Glades Cut Off Road	Signalized	EB	L	24.3 / C	21.8 / C	27.9 / C			
			T	21.4 / C					
			R	N/A <sup>(2)</sup>					
		WB	L	26.9 / C	22.1 / C				
			T	21.6 / C					
			R	N/A <sup>(2)</sup>					
		NB	L	29.9 / C	51.7 / D				
			T	26.7 / C					
			R	73.0 / F					
		SB	L	32.7 / C	31.2 / C				
			T	24.4 / C					
			R	31.4 / C					
Midway Road at NW East Torino Parkway	Signalized	EB	L	N/A <sup>(4)</sup>	21.8 / C	22.0 / C			
			T	21.7 / C					
			R	21.8 / C					
		WB	L	24.1 / C	13.2 / B				
			T	7.3 / A					
			R	(3)					
		NB	L	36.1 / D	40.3 / D				
			T/R	43.1 / D					
		SB	L	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>				
			T/R						
		Midway Road at NW Milner Drive- S Jenkins Road	Two-way Stop	EB	L		9.7 / A	(5)	(5)
					T/R		N/A <sup>(4)</sup>		
WB	L			10.0 / B	(5)				
	T/R			N/A <sup>(4)</sup>					
NB	L			15.9 / C	13.2 / B				
	T/R			10.3 / B					
SB	L/T/R			13.5 / B	13.5 / B				
Midway Road at Selvitz Road	Signalized			EB	L	9.3 / A	13.0 / B	16.2 / B	
		T	13.7 / B						
		R	12.6 / B						
		WB	L	9.7 / A	14.7 / B				
			T	15.2 / B					
			R	15.1 / B					
		NB	L	25.8 / C	23.0 / C				
			T	21.0 / C					
			R	21.0 / C					
		SB	L	23.4 / C	22.5 / C				
			T	22.2 / C					
			R	22.4 / C					

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
Movement - L = left-turn; T = through; R = right-turn

- Note:
- (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.
  - (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.
  - (3) Movement/approach has no volume. Delay and LOS are not defined.
  - (4) Movement is uncontrolled. Delay and LOS are not defined.
  - (5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection.

**Future (2020) Limited Growth No-Build Conditions AM Peak Hour Operational Analysis**

**Table 6** presents the future 2020 limited growth no-build AM delay and LOS for the Midway Road at Glades Cut Off Road intersection. The intersection is anticipated to operate at LOS C with an average delay of 24.4 seconds per vehicle. All approaches and movements are anticipated to operate at LOS D or better. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The Midway Road at NW East Torino Parkway, Midway Road at NW Milner Drive-S Jenkins Road, and Midway Road at Selvitz Road intersections were not modified from the 2020 uncapped growth no-build scenario and therefore operate with the same delay and LOS as reported in the uncapped growth scenario.

The detailed future 2020 limited growth no-build intersection capacity analysis is included in **Appendix E**.

**Table 6: Future (2020) Limited Growth No-Build AM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	26.7 / C	23.6 / C	24.4 / C
			T	23.1 / C		
			R	N/A <sup>(2)</sup>		
		WB	L	28.8 / C	22.6 / C	
			T	21.6 / C		
			R	N/A <sup>(2)</sup>		
		NB	L	33.3 / C	23.7 / C	
			T	29.4 / C		
			R	15.6 / B		
		SB	L	36.3 / D	32.1 / C	
			T	26.9 / C		
			R	30.3 / C		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
 Movement - L = left-turn; T = through; R = right-turn  
 Note: (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.  
 (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.

**Future (2020) Limited Growth No-Build Conditions PM Peak Hour Operational Analysis**

**Table 7** presents the future 2020 limited growth no-build PM operations results for the Midway Road at Glades Cut Off Road intersection. The intersection is anticipated to operate at LOS C with an average delay of 23.6 seconds per vehicle. All approaches and movements are anticipated to operate at LOS C or better. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The Midway Road at NW East Torino Parkway, Midway Road at NW Milner Drive-S Jenkins Road, and Midway Road at Selvitz Road intersections were not modified from the 2020 uncapped growth no-build scenario and therefore operate with the same delay and LOS as reported in the uncapped growth scenario.

The detailed future 2020 limited growth no-build intersection capacity analysis is included in **Appendix E**.

**Table 7: Future (2020) No-Build Limited Growth PM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	25.3 / C	22.3 / C	23.6 / C
			T	21.8 / C		
			R	N/A <sup>(2)</sup>		
		WB	L	27.1 / C	22.7 / C	
			T	22.5 / C		
			R	N/A <sup>(2)</sup>		
		NB	L	31.6 / C	22.4 / C	
			T	27.3 / C		
			R	16.2 / B		
		SB	L	32.9 / C	29.5 / C	
			T	23.1 / C		
			R	26.9 / C		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
 Movement - L = left-turn; T = through; R = right-turn  
 Note: (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.  
 (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.

**Future (2040) Uncapped Growth No-Build Conditions AM Peak Hour Operational Analysis**

**Table 8** presents the future 2040 uncapped growth no-build AM delay and LOS for the study intersections. The intersection of Midway Road at Glades Cut Off Road is anticipated to operate at LOS F with an average delay exceeding 300 seconds per vehicle. The westbound, northbound, and southbound approaches are anticipated to operate at LOS F. The westbound left-turn movement, all northbound movements, and southbound through and right-turn movements are anticipated to operate at LOS F. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The intersection of Midway Road at NW East Torino Parkway is anticipated to operate at LOS F with an average delay exceeding 100 seconds per vehicle. The eastbound and northbound approaches are anticipated to operate at LOS F. The eastbound through movement, eastbound right-turn movement, westbound left-turn movement, and all northbound movements are anticipated to operate at LOS E or worse. Delay and LOS for the southbound approach and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, the northbound and southbound approaches to the intersection of Midway Road at NW Milner Drive-S Jenkins Road are anticipated to operate at LOS D or better. The northbound left-turn movement is anticipated to operate at LOS E. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road is anticipated to operate at LOS C with an average delay of 24.3 seconds per vehicle. All movements and approaches are anticipated to operate at LOS D or better.

The detailed future 2040 uncapped growth no-build intersection capacity analyses are included in **Appendix F**.

**Table 8: Future (2040) Uncapped Growth No-Build AM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service					
				Movement	Approach	Intersection			
Midway Road at Glades Cut Off Road	Signalized	EB	L	48.1 / D	33.3 / C	315.4 / F			
			T	31.1 / C					
			R	N/A <sup>(2)</sup>					
		WB	L	851.6 / F	340.2 / F				
			T	24.7 / C					
			R	N/A <sup>(2)</sup>					
		NB	L	465.4 / F	602.2 / F				
			T	140.8 / F					
			R	909.1 / F					
		SB	L	60.2 / E	272.8 / F				
			T	422.9 / F					
			R	178.5 / F					
Midway Road at NW East Torino Parkway	Signalized	EB	L	28.2 / C	255.7 / F	138.1 / F			
			T	244.4 / F					
			R	269.2 / F					
		WB	L	67.2 / E	37.3 / D				
			T	31.3 / C					
			R	31.1 / C					
		NB	L	102.9 / F	86.5 / F				
			T/R	66.3 / E					
		SB	L	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>				
			T/R						
		Midway Road at NW Milner Drive- S Jenkins Road	Two-way Stop	EB	L		13.0 / B	(5)	(5)
					T/R		N/A <sup>(4)</sup>		
WB	L			15.6 / C	(5)				
	T/R			N/A <sup>(4)</sup>					
NB	L			39.7 / E	30.8 / D				
	T/R			16.4 / C					
SB	L/T/R			22.8 / C	22.8 / C				
Midway Road at Selvitz Road	Signalized			EB	L	15.8 / B	21.6 / C	24.3 / C	
		T	23.3 / C						
		R	17.5 / B						
		WB	L	17.2 / B	23.7 / C				
			T	24.4 / C					
			R	24.3 / C					
		NB	L	35.4 / D	30.1 / C				
			T	25.0 / C					
			R	25.2 / C					
		SB	L	29.6 / C	25.7 / C				
			T	23.4 / C					
			R	25.8 / C					

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
Movement - L = left-turn; T = through; R = right-turn

- Note:
- (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.
  - (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.
  - (3) Movement/approach has no volume. Delay and LOS are not defined.
  - (4) Movement is uncontrolled. Delay and LOS are not defined.
  - (5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection.

**Future (2040) Uncapped Growth No-Build Conditions PM Peak Hour Operational Analysis**

**Table 9** presents the future 2040 uncapped growth no-build PM delay and LOS for the study intersections. The intersection of Midway Road at Glades Cut Off Road is anticipated to operate at LOS F with an average delay exceeding 300 seconds per vehicle. The northbound and southbound approaches are anticipated to operate at LOS F. The westbound left-turn movement, all northbound movements, and all southbound movements are anticipated to operate at LOS E or worse. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The intersection of Midway Road at NW East Torino Parkway is anticipated to operate at LOS F with an average delay exceeding 100 seconds per vehicle. The eastbound and northbound approaches are anticipated to operate at LOS E or worse. The eastbound through, eastbound right-turn, westbound left-turn, and northbound through and right-turn movements are anticipated to operate at LOS E or worse. Delay and LOS for the southbound approach and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, the northbound and southbound approaches to the intersection of Midway Road at NW Milner Drive-S Jenkins Road are anticipated to operate at LOS C. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road is anticipated to operate at LOS C with an average delay of 22.1 seconds per vehicle. The eastbound, westbound, and northbound approaches are anticipated to operate at LOS F. All movements and approaches are anticipated to operate at LOS C or better.

The detailed future 2040 uncapped growth no-build intersection capacity analyses are included in **Appendix F**.

**Table 9: Future (2040) Uncapped Growth No-Build PM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service					
				Movement	Approach	Intersection			
Midway Road at Glades Cut Off Road	Signalized	EB	L	44.1 / D	30.6 / C	345.1 / F			
			T	29.1 / C					
			R	N/A <sup>(2)</sup>					
		WB	L	158.1 / F	50.6 / D				
			T	24.1 / C					
			R	N/A <sup>(2)</sup>					
		NB	L	297.5 / F	1,097.3 / F				
			T	195.8 / F					
			R	1,786.2 / F					
		SB	L	70.6 / E	133.3 / F				
			T	76.7 / E					
			R	244.0 / F					
Midway Road at NW East Torino Parkway	Signalized	EB	L	N/A <sup>(4)</sup>	261.6 / F	137.4 / F			
			T	236.1 / F					
			R	285.7 / F					
		WB	L	75.7 / E	28.3 / C				
			T	13.7 / B					
			R	N/A <sup>(3)</sup>					
		NB	L	51.0 / D	55.5 / E				
			T/R	59.4 / E					
		SB	L	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>				
			T/R						
		Midway Road at NW Milner Drive- S Jenkins Road	Two-way Stop	EB	L		12.5 / B	(5)	(5)
					T/R		N/A <sup>(4)</sup>		
WB	L			13.5 / B	(5)				
	T/R			N/A <sup>(4)</sup>					
NB	L			29.8 / D	21.5 / C				
	T/R			13.5 / B					
SB	L/T/R			24.2 / C	24.2 / C				
Midway Road at Selvitz Road	Signalized			EB	L	14.2 / B	18.7 / B	22.1 / C	
		T	19.8 / B						
		R	17.6 / B						
		WB	L	14.6 / B	21.4 / C				
			T	22.1 / C					
			R	22.0 / C					
		NB	L	34.6 / C	29.8 / C				
			T	24.8 / C					
			R	25.0 / C					
		SB	L	28.9 / C	27.2 / C				
			T	26.7 / C					
			R	27.0 / C					

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
Movement - L = left-turn; T = through; R = right-turn

- Note:
- (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.
  - (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.
  - (3) Movement/approach has no volume. Delay and LOS are not defined.
  - (4) Movement is uncontrolled. Delay and LOS are not defined.
  - (5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection.

**Future (2040) Limited Growth Conditions No-Build AM Peak Hour Operational Analysis**

**Table 10** presents the future 2040 limited growth no-build AM delay and LOS for the Midway Road at Glades Cut Off Road intersection. The intersection is anticipated to operate at LOS E with an average delay of 66.0 seconds per vehicle. The northbound and southbound approaches are anticipated to operate at LOS F. The westbound left-turn, northbound right-turn, southbound left-turn, and southbound right-turn movements are anticipated to operate at LOS F. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The Midway Road at NW East Torino Parkway, Midway Road at NW Milner Drive-S Jenkins Road, and Midway Road at Selvitz Road intersections were not modified from the 2040 no-build uncapped growth scenario and therefore operate with the same delay and LOS as reported in the uncapped growth scenario.

The detailed future 2040 limited growth no-build intersection capacity analysis is included in **Appendix F**.

**Table 10: Future (2040) Limited Growth No-Build AM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	58.8 / E	35.6 / D	66.0 / E
			T	32.0 / C		
			R	N/A <sup>(2)</sup>		
		WB	L	195.2 / F	52.7 / D	
			T	29.1 / C		
			R	N/A <sup>(2)</sup>		
		NB	L	63.3 / E	208.1 / F	
			T	60.8 / E		
			R	347.6 / F		
		SB	L	153.0 / F	114.1 / F	
			T	48.3 / D		
			R	101.7 / F		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
 Movement - L = left-turn; T = through; R = right-turn  
 Note: (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.  
 (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.



**Future (2040) Limited Growth No-Build Conditions PM Peak Hour Operational Analysis**

**Table 11** presents the future 2040 limited growth no-build PM operations results for the Midway Road at Glades Cut Off Road intersection. The intersection is anticipated to operate at LOS F with an average delay of 82.5 seconds per vehicle. The northbound and southbound approaches are anticipated to operate at LOS F. The northbound right-turn, southbound left-turn, and southbound right-turn movements are anticipated to operate at LOS F. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The Midway Road at NW East Torino Parkway, Midway Road at NW Milner Drive-S Jenkins Road, and Midway Road at Selvitz Road intersections were not modified from the 2040 no-build uncapped growth scenario and therefore operate with the same delay and LOS as reported in the uncapped growth scenario.

The detailed future 2040 limited growth no-build intersection capacity analysis is included in **Appendix F**.

**Table 11: Future (2040) No-Build Limited Growth PM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	52.0 / D	32.6 / C	82.5 / F
			T	30.2 / C		
			R	N/A <sup>(2)</sup>		
		WB	L	56.0 / E	26.9 / C	
			T	25.0 / C		
			R	N/A <sup>(2)</sup>		
		NB	L	61.6 / E	318.2 / F	
			T	54.0 / D		
			R	499.8 / F		
		SB	L	289.9 / F	204.5 / F	
			T	44.8 / D		
			R	118.7 / F		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
 Movement - L = left-turn; T = through; R = right-turn  
 Note: (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.  
 (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.

## FUTURE BUILD CONDITIONS CAPACITY ANALYSIS

All build scenarios propose widening Midway Road from a two (2)-lane section to a four (4)-lane section from west of NW East Torino Parkway to east of Selvitz Road to match the four (4)-lane section currently under construction east of Selvitz Road. A segment capacity analyses was performed to determine if the ultimate four (4) lane section would provide sufficient capacity to accommodate future traffic through the 2040 design year or if additional capacity improvements would be necessary. As summarized in **Table 12** below, a four (4) lane section provides sufficient capacity to accommodate forecasted 2040 traffic.

**Table 12: Future (2040) Build Segment Capacity Analysis**

Segment		2040 AADT	FDOT LOS E Capacity	Capacity Available
From	To			
Glades Cut Off Road	E Torino Parkway	33,600	41,790 <sup>(1)</sup>	8,190
E Torino Parkway	Jenkins Road	29,300	39,800 <sup>(2)</sup>	12,490
Jenkins Road	Selvitz Road	28,900	41,790 <sup>(1)</sup>	12,890

Note: (1) FDOT LOS E Capacity based on 2012 Generalized Service Volume Table 1 of the 2013 Quality/Level of Service Handbook for a four lane class I segment with exclusive right-turn lanes.

(2) FDOT LOS E Capacity based on 2012 Generalized Service Volume Table 1 of the 2013 Quality/Level of Service Handbook for a four lane class I segment without exclusive right-turn lanes.

In addition to the additional two (2) through lanes along Midway Road, the build scenario considers additional intersection improvements to allow the study intersections to operate at a minimum LOS E consistent with the St. Lucie County Comprehensive Plan. Traffic signal timings were optimized for build traffic conditions. A summary of proposed intersection improvements are presented below.

### Future (2020) Build Uncapped Growth Alternatives

The 2020 build uncapped growth alternative proposes the following improvements:

- Midway Road at Glades Cut Off Road
  - Add a northbound right-turn overlap
- Midway Road at NW East Torino Parkway
  - Convert eastbound right-turn lane to a shared through/right-turn lane

- Midway Road at NW Milner Drive/S Jenkins Road
  - Add one (1) eastbound through lane
  - Add one (1) westbound through lane

Figure 11 depicts the proposed 2020 build uncapped growth improvements.

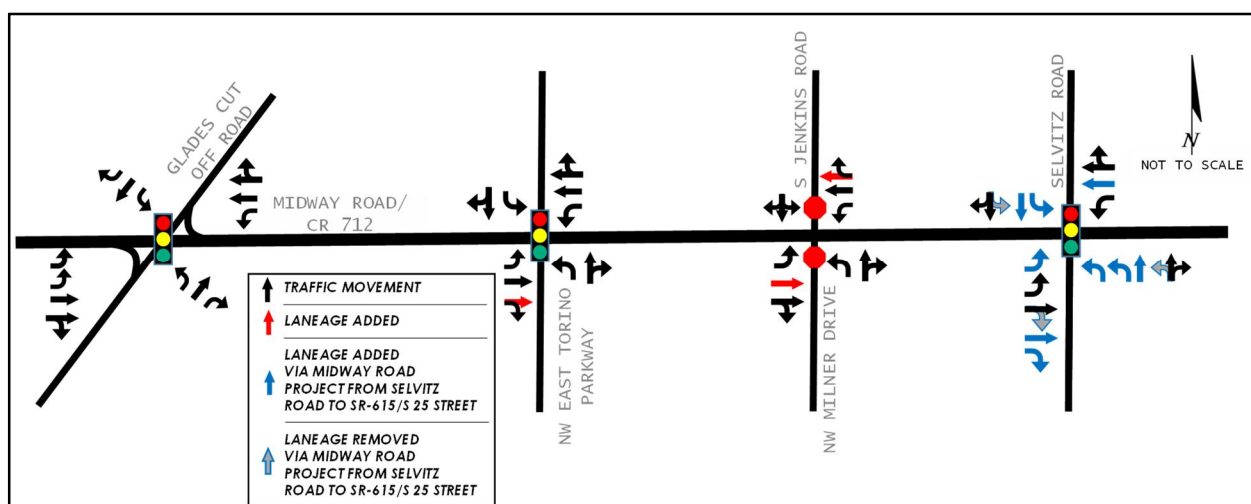


Figure 11: 2020 Build Uncapped Growth Alternative Improvements

### Future (2020) Build Uncapped Growth AM Peak Hour Operational Analysis

Table 13 presents the future 2020 build uncapped growth AM peak hour delay and LOS for the intersections. The intersection of Midway Road at Glades Cut Off Road is anticipated to operate at LOS C with an average delay of 25.4 seconds per vehicle. All approaches are anticipated to operate at LOS C. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The intersection of Midway Road at NW East Torino Parkway is anticipated to operate at LOS C with an average delay of 23.7 seconds per vehicle. The eastbound, westbound, and northbound approaches are anticipated to operate at LOS D or better. Delay and LOS for the southbound approach and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, all approaches

to the intersection of Midway Road at NW Milner Drive-S Jenkins Road are anticipated to operate at LOS C or better. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road is anticipated to operate at LOS B with an average delay of 17.0 seconds per vehicle. All approaches are anticipated to operate at LOS C.

The detailed future 2020 build uncapped growth intersection capacity analyses are included in **Appendix G**.

**Table 13: Future (2020) Uncapped Growth Build AM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	27.0 / C	24.3 / C	25.4 / C
			T	23.8 / C		
			R	N/A <sup>(2)</sup>		
		WB	L	39.3 / D	25.2 / C	
			T	20.6 / C		
			R	N/A <sup>(2)</sup>		
		NB	L	34.7 / C	21.1 / C	
			T	31.5 / C		
			R	6.7 / A		
		SB	L	34.9 / C	34.1 / C	
			T	32.8 / C		
			R	34.6 / C		
Midway Road at NW East Torino Parkway	Signalized	EB	L	13.1 / B	20.8 / C	23.7 / C
			T	20.9 / C		
			R	20.9 / C		
		WB	L	16.3 / B	13.9 / B	
			T	12.9 / B		
			R	12.9 / B		
		NB	L	37.7 / D	37.7 / D	
			T/R	37.6 / D		
		SB	L/T/R	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>	
Midway Road at NW Milner Drive- S Jenkins Road	Two-way Stop	EB	L	9.9 / A	(5)	(5)
			T/R	N/A <sup>(4)</sup>		
		WB	L	10.9 / B	(5)	
			T/R	N/A <sup>(4)</sup>		
		NB	L	18.0 / C	15.5 / C	
			T/R	10.9 / B		
		SB	L/T/R	12.3 / B	12.3 / B	
		Midway Road at Selvitz Road	Signalized	EB	L	
T	14.8 / B					
R	12.3 / B					
WB	L			10.5 / B	15.4 / B	
	T			15.9 / B		
	R			15.9 / B		
NB	L			25.3 / C	22.7 / C	
	T			21.2 / C		
	R			21.3 / C		
SB	L			24.1 / C	21.5 / C	
	T			20.1 / C		
	R			21.5 / C		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
Movement - L = left-turn; T = through; R = right-turn

- Note:
- (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.
  - (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.
  - (3) Movement/approach has no volume. Delay and LOS are not defined.
  - (4) Movement is uncontrolled. Delay and LOS are not defined.
  - (5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection.

### **Future (2020) Uncapped Growth Build PM Peak Hour Operational Analysis**

**Table 14** presents the future 2020 uncapped growth build PM delay and LOS for the intersections under the Build scenario. The intersection of Midway Road at Glades Cut Off Road is anticipated to operate at LOS C with an average delay of 22.6 seconds per vehicle. All approaches are anticipated to operate at LOS C or better. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The intersection of Midway Road at NW East Torino Parkway is anticipated to operate at LOS C with an average delay of 22.0 seconds per vehicle. The eastbound, westbound, and northbound approaches are anticipated to operate at LOS D or better. Delay and LOS for the southbound approach and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, all approaches to the intersection of Midway Road at NW Milner Drive-S Jenkins Road are anticipated to operate at LOS B or better. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road is anticipated to operate at LOS B with an average delay of 16.2 seconds per vehicle. All approaches are anticipated to operate at LOS C or better.

The detailed future 2020 uncapped growth build intersection capacity analyses are included in **Appendix G**.

**Table 14: Future (2020) Uncapped Growth Build PM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	24.3 / C	21.8 / C	22.6 / C
			T	21.4 / C		
			R	N/A <sup>(2)</sup>		
		WB	L	26.9 / C	22.1 / C	
			T	21.6 / C		
			R	N/A <sup>(2)</sup>		
		NB	L	29.9 / C	17.4 / B	
			T	26.7 / C		
			R	7.3 / A		
		SB	L	32.7 / C	31.2 / C	
			T	24.4 / C		
			R	31.4 / C		
Midway Road at NW East Torino Parkway	Signalized	EB	L	N/A <sup>(4)</sup>	21.8 / C	22.0 / C
			T	21.7 / C		
			R	21.8 / C		
		WB	L	24.1 / C	13.2 / B	
			T/R	7.3 / A		
		NB	L	36.1 / D	40.3 / D	
			T/R	43.1 / D		
		SB	L/T/R	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>	
		Midway Road at NW Milner Drive- S Jenkins Road	Two-way Stop	EB	L	
T/R	N/A <sup>(4)</sup>					
WB	L			10.0 / B	(5)	
	T/R			N/A <sup>(4)</sup>		
NB	L			15.9 / C	13.2 / B	
	T/R			10.3 / B		
SB	L/T/R			13.5 / B	13.5 / B	
Midway Road at Selvitz Road	Signalized			EB	L	9.3 / A
		T	13.7 / B			
		R	12.6 / B			
		WB	L	9.7 / A	14.7 / B	
			T	15.2 / B		
			R	15.1 / B		
		NB	L	25.8 / C	23.0 / C	
			T	20.9 / C		
			R	21.0 / C		
		SB	L	23.4 / C	22.5 / C	
			T	22.2 / C		
			R	27.4 / C		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
Movement - L = left-turn; T = through; R = right-turn

- Note:
- (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.
  - (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.
  - (3) Movement/approach has no volume. Delay and LOS are not defined.
  - (4) Movement is uncontrolled. Delay and LOS are not defined.
  - (5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection.

### **Future (2020) Limited Growth Build Alternative**

The 2020 build limited growth alternative proposes the following improvements:

- Midway Road at NW East Torino Parkway
  - Convert eastbound right-turn lane to a shared through/right-turn lane
- Midway Road at NW Milner Drive/S Jenkins Road
  - Add one (1) eastbound through lane
  - Add one (1) westbound through lane

The Midway Road at Glades Cut Off Road intersection is anticipated to operate at LOS C in the no-build scenario; therefore, no improvements were recommended. The Midway Road at NW East Torino Parkway, Midway Road at NW Milner Drive-S Jenkins Road, and Midway Road at Selvitz Road intersections were not modified from the 2020 build uncapped growth scenario and therefore operate with the same delay and LOS as reported in the uncapped growth scenario.

### **Future (2040) Uncapped Growth Build Alternative**

The 2040 uncapped growth build alternative proposes the following improvements:

- Midway Road at Glades Cut Off Road
  - Convert eastbound shared through/right-turn lane to a through lane
  - Add one (1) eastbound right-turn lane
  - Add one (1) northbound left-turn lane
  - Add one (1) northbound right-turn lane
  - Add northbound right-turn overlap
  - Add one (1) southbound through lane
- Midway Road at NW East Torino Parkway
  - Add one (1) eastbound through lane
  - Convert northbound shared through/right-turn lane to a shared through/left-turn lane
  - Add one (1) northbound right-turn lane
  - Convert westbound shared through/right-turn lane to a through lane
  - Add one (1) westbound right-turn lane
- Midway Road at NW Milner Drive-S Jenkins Road
  - Add one (1) eastbound through lane
  - Add one (1) westbound through lane



Figure 12 depicts the proposed 2040 uncapped growth build-out improvements.

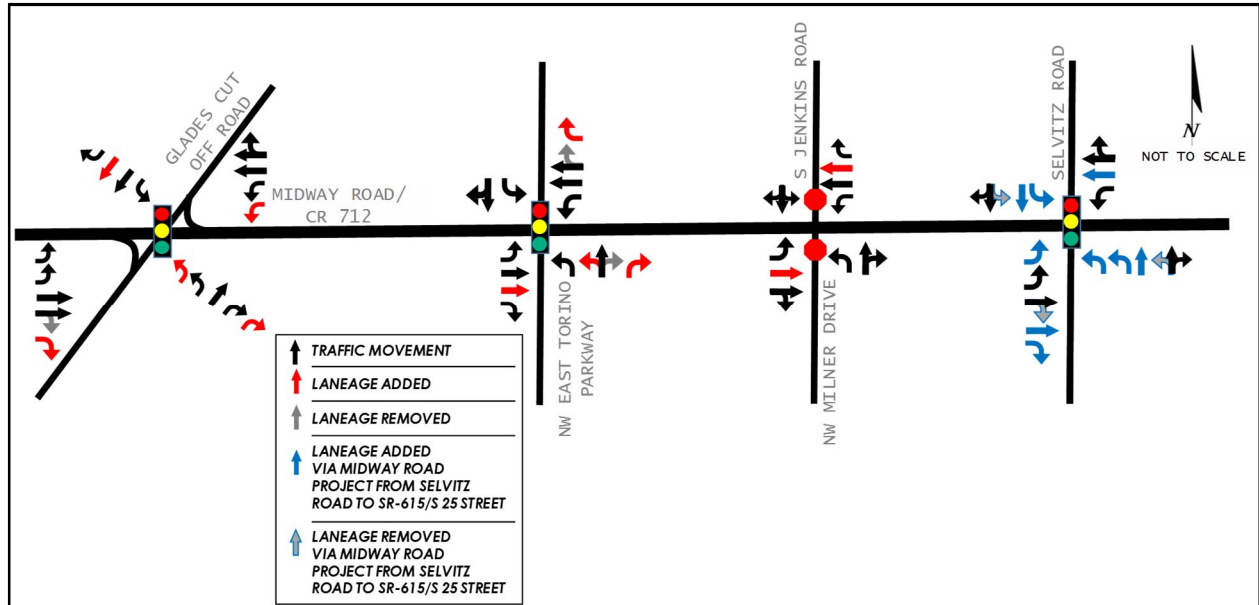


Figure 12: 2040 Uncapped Growth Build Alternative Improvements

### Future (2040) Uncapped Growth Build AM Peak Hour Operational Analysis

Table 15 presents the future 2040 uncapped growth build AM delay and LOS for the intersections. The intersection of Midway Road at Glades Cut Off Road is anticipated to operate at LOS E with an average delay of 58.9 seconds per vehicle. The eastbound, northbound, and southbound approaches are anticipated to operate at LOS E. The eastbound left-turn and through movements, westbound left-turn movement, northbound left-turn and through movements, and southbound left-turn and through movements are anticipated to operate LOS E or worse. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The intersection of Midway Road at NW East Torino Parkway is anticipated to operate at LOS D with an average delay of 44.7 seconds per vehicle. The eastbound and westbound approaches are anticipated to operate at LOS D or better. The northbound approach is anticipated to operate at LOS E. Delay and LOS for the southbound approach and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, all approaches to the intersection of Midway Road at NW Milner Drive-S Jenkins Road are anticipated to operate at LOS D or better. The northbound left-turn movement is the only movement anticipated to operate at LOS E or worse. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road is anticipated to operate at LOS C with an average delay of 25.8 seconds per vehicle. All movements and approaches are anticipated to operate at LOS D or better.

The detailed future 2040 uncapped growth build intersection capacity analyses are included in **Appendix H**.

**Table 15: Future (2040) Uncapped Growth Build AM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	64.4 / E	64.6 / E	58.9 / E
			T	64.6 / E		
			R	N/A <sup>(2)</sup>		
		WB	L	79.7 / E	46.6 / D	
			T	26.2 / C		
			R	N/A <sup>(2)</sup>		
		NB	L	89.4 / F	67.1 / E	
			T	106.0 / F		
			R	33.4 / C		
		SB	L	89.1 / F	72.2 / E	
			T	74.2 / E		
			R	54.5 / D		
Midway Road at NW East Torino Parkway	Signalized	EB	L	19.2 / B	52.0 / D	44.7 / D
			T	56.0 / E		
			R	23.1 / C		
		WB	L	79.7 / E	28.2 / C	
			T	17.8 / B		
			R	10.1 / B		
		NB	L/T	59.4 / E	56.4 / E	
			R	52.8 / D		
		SB	L/T/R	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>	
		Midway Road at NW Milner Drive- S Jenkins Road	Two-way Stop	EB	L	
T/R	N/A <sup>(4)</sup>					
WB	L			15.6 / C	(5)	
	T/R			N/A <sup>(4)</sup>		
NB	L			39.4 / E	30.6 / D	
	T/R			16.2 / C		
SB	L/T/R			22.3 / C	22.3 / C	
Midway Road at Selvitz Road	Signalized			EB	L	15.6 / B
		T	27.9 / C			
		R	17.3 / C			
		WB	L	16.9 / B	23.3 / C	
			T	24.0 / C		
			R	23.9 / C		
		NB	L	28.7 / C	30.7 / C	
			T	32.4 / C		
			R	32.7 / C		
		SB	L	33.1 / C	42.6 / D	
			T	35.7 / D		
			R	48.8 / D		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound

Movement - L = left-turn; T = through; R = right-turn

Note: (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.

(2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.

(3) Movement/approach has no volume. Delay and LOS are not defined.

(4) Movement is uncontrolled. Delay and LOS are not defined.

(5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection.

**Future (2040) Uncapped Growth Build PM Peak Hour Operational Analysis**

**Table 16** presents the future 2040 uncapped growth build PM delay and LOS for the intersections. The intersection of Midway Road at Glades Cut Off Road is anticipated to operate at LOS D with an average delay of 45.5 seconds per vehicle. The northbound right-turn movement, southbound approach, and southbound left-turn movement are anticipated to operate at LOS E or worse. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-.

The intersection of Midway Road at NW East Torino Parkway is anticipated to operate at LOS C with an average delay of 28.1 seconds per vehicle. The eastbound, westbound, and northbound approaches are anticipated to operate at LOS D or better. The westbound left-turn movement is anticipated to operate LOS E. Delay and LOS for the southbound approach and southbound movements are not defined, as no approach volumes exist.

An overall intersection LOS is not provided as the intersection is two-way stop controlled and HCM 2010 does not define an intersection LOS for two-way stop control; however, all approaches to the intersection of Midway Road at NW Milner Drive-S Jenkins Road are anticipated to operate at LOS C or better. LOS for the eastbound through and right-turn movements and westbound through and right-turn movements are not defined, as those movements are uncontrolled.

The intersection of Midway Road at Selvitz Road is anticipated to operate at LOS C with an average delay of 24.4 seconds per vehicle. All movements and approaches are anticipated to operate at LOS D or better.

The detailed future 2040 uncapped growth build intersection capacity analyses are included in **Appendix H**.

**Table 16: Future (2040) Uncapped Growth Build PM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	51.7 / D	39.7 / D	45.5 / D
			T	38.3 / D		
			R	N/A <sup>(2)</sup>		
		WB	L	55.6 / D	35.1 / D	
			T	30.0 / C		
			R	N/A <sup>(2)</sup>		
		NB	L	53.5 / D	55.0 / D	
			T	52.7 / D		
			R	56.6 / E		
		SB	L	105.7 / F	66.1 / E	
			T	43.4 / D		
			R	39.1 / D		
Midway Road at NW East Torino Parkway	Signalized	EB	L	N/A <sup>(3)</sup>	32.9 / C	28.1 / C
			T	35.8 / D		
			R	23.2 / C		
		WB	L	61.8 / E	19.6 / B	
			T/R	6.6 / A		
		NB	L/T	44.7 / D	36.8 / D	
			R	29.8 / C		
		SB	L/T/R	N/A <sup>(3)</sup>	N/A <sup>(3)</sup>	
Midway Road at NW Milner Drive-S Jenkins Road	Two-way Stop	EB	L	12.4 / B	(5)	(5)
			T/R	N/A <sup>(4)</sup>		
		WB	L	13.5 / B	(5)	
			T/R	N/A <sup>(4)</sup>		
		NB	L	29.8 / D	21.5 / C	
			T/R	13.5 / B		
		SB	L/T/R	24.1 / C	24.1 / C	
		Midway Road at Selvitz Road	Signalized	EB	L	
T	21.2 / C					
R	18.7 / B					
WB	L			15.6 / B	23.5 / C	
	T			24.3 / C		
	R			24.2 / C		
NB	L			27.9 / C	29.6 / C	
	T			31.2 / C		
	R			31.5 / C		
SB	L			28.2 / C	36.0 / D	
	T			37.1 / D		
	R			38.1 / D		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
 Movement - L = left-turn; T = through; R = right-turn  
 Note: (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.  
 (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.  
 (3) Movement/approach has no volume. Delay and LOS are not defined.  
 (4) Movement has the right-of-way and is uncontrolled. Delay and LOS are not defined.  
 (5) LOS is not defined for free-flow approaches or overall intersection for a two-way stop controlled intersection

### Future (2040) Limited Growth Build Alternative

The 2040 limited growth build alternative proposes the following improvements:

- Midway Road at Glades Cut Off Road
  - Add one (1) southbound left-turn lane
- Midway Road at NW East Torino Parkway
  - Add one (1) eastbound through lane
  - Convert northbound shared through/right-turn lane to a shared through/left-turn lane
  - Add one (1) northbound right-turn lane
  - Convert westbound shared through/right-turn lane to a through lane
  - Add one (1) westbound right-turn lane
- Midway Road at NW Milner Drive-S Jenkins Road
  - Add one (1) eastbound through lane
  - Add one (1) westbound through lane

Figure 13 depicts the proposed 2040 limited growth build improvements.

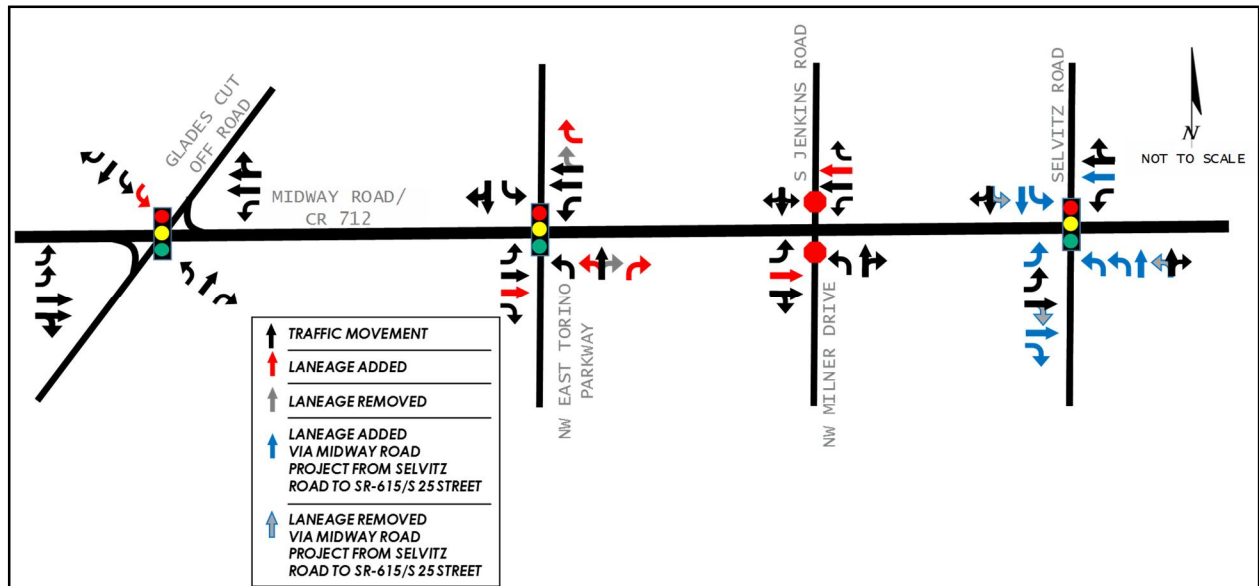


Figure 13: 2040 Limited Growth Build Alternative Improvements

**Future (2040) Limited Growth Build AM Peak Hour Operational Analysis**

**Table 17** presents the future 2040 limited growth build AM delay and LOS for the Midway Road at Glades Cut Off Road intersection. The intersection is anticipated to operate at LOS D with an average delay of 45.2 seconds per vehicle. All approaches are anticipated to operate at LOS D. The eastbound left-turn, westbound left-turn, northbound left-turn, and southbound left-turn movements are anticipated to operate at LOS E. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The Midway Road at NW East Torino Parkway, Midway Road at NW Milner Drive-S Jenkins Road, and Midway Road at Selvitz Road intersections were not modified from the 2040 build uncapped growth scenario and therefore operate with the same delay and LOS as reported in the uncapped growth scenario.

The detailed future 2040 limited growth build intersection capacity analysis is included in **Appendix H**.

**Table 17: Future (2040) Limited Growth Build AM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	60.7 / E	51.6 / D	45.2 / D
			T	50.2 / D		
			R	N/A <sup>(2)</sup>		
		WB	L	73.7 / E	36.3 / D	
			T	30.1 / C		
			R	N/A <sup>(2)</sup>		
		NB	L	66.7 / E	48.7 / D	
			T	53.4 / D		
			R	37.6 / D		
		SB	L	59.5 / E	53.0 / D	
			T	51.3 / D		
			R	45.9 / D		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
 Movement - L = left-turn; T = through; R = right-turn  
 Note: (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.  
 (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.

**Future (2040) Limited Growth Build PM Peak Hour Operational Analysis**

**Table 18** presents the future 2040 build limited growth PM delay and LOS for the intersections. The intersection of Midway Road at Glades Cut Off Road is anticipated to operate at LOS D with an average delay of 46.5 seconds per vehicle. All approaches are anticipated to operate at LOS D. The westbound left-turn, northbound left-turn, and southbound left-turn movements are anticipated to operate at LOS E. Delay and LOS for the eastbound right-turn and westbound right-turn movements are not defined, as these right-turn movements are channelized and operate under yield-control.

The Midway Road at NW East Torino Parkway, Midway Road at NW Milner Drive-S Jenkins Road, and Midway Road at Selvitz Road intersections were not modified from the 2040 uncapped growth build scenario and therefore operate with the same delay and LOS as reported in the uncapped growth scenario.

The detailed future 2040 limited growth build intersection capacity analysis is included in **Appendix H**.

**Table 18: Future (2040) Limited Growth Build PM Peak Hour Operations Summary**

Intersection	Control Type	Approach	Movement	Delay <sup>(1)</sup> and Level of Service		
				Movement	Approach	Intersection
Midway Road at Glades Cut Off Road	Signalized	EB	L	54.8 / D	51.6 / D	46.5 / D
			T	51.2 / D		
			R	N/A <sup>(2)</sup>		
		WB	L	63.6 / E	36.9 / D	
			T	35.2 / D		
			R	N/A <sup>(2)</sup>		
		NB	L	64.0 / E	49.5 / D	
			T	44.6 / D		
			R	45.3 / D		
		SB	L	67.5 / E	53.5 / D	
			T	39.6 / D		
			R	36.3 / D		

Legend: Approach - EB = eastbound; WB = westbound; NB = northbound; SB = southbound  
 Movement - L = left-turn; T = through; R = right-turn  
 Note: (1) Delay measured in seconds per vehicle using HCM 2010 methodologies.  
 (2) Channelized movement operates under yield-control conditions. Delay and LOS are not defined.



**Jenkins Road Extension**

Although not a committed project, St. Lucie County has expressed an interest in extending Jenkins Road from its existing terminus south of SR 70 to Midway Road. Therefore, a segment capacity analyses was performed to determine if the change in traffic patterns associated with the Jenkins Road extension would result in additional assignment of traffic to Midway Road, possibly requiring additional capacity beyond the proposed four (4) lane capacity. The change in traffic patterns was projected utilizing the TCRPM. The unedited 2040 roadway network was edited to extend Jenkins Road south to Midway Road. Next an “Assignment” only run was performed utilizing the same trip generation output from the unedited 2040 model run. As summarized in **Table 19** below, although the 2040 AADT is anticipated to increase on two (2) of the three (3) study segments of Midway Road due to the extension of Jenkins Road, a four (4) lane section is still sufficient to accommodate forecasted 2040 traffic. The TCRPM results are also included in **Appendix C**.

**Table 19: Future (2040) Build Segment Capacity Analysis**

Segment		2040 AADT without Jenkins Road	2040 AADT with Jenkins Road	FDOT LOS E Capacity <sup>(1)</sup>
From	To			
Glades Cut Off Road	E Torino Parkway	33,600	28,500	41,790
E Torino Parkway	Jenkins Road	29,300	34,400	39,800
Jenkins Road	Selvitz Road	28,900	31,500	41,790

Note: (1) FDOT LOS E Capacity based on Generalized Service Volume Table 1 of the 2013 Quality/Level of Service Handbook for a four lane class I segment with exclusive right-turn lanes.

## QUEUE ANALYSIS

**Table 20** provides the 95<sup>th</sup> percentile queuing analysis for the 2020 and 2040 uncapped growth alternatives. **Table 21** provides the 95<sup>th</sup> percentile queuing analysis for the 2040 limited growth alternatives. The 95<sup>th</sup> percentile queue in feet was calculated by multiplying the number of vehicles in the 95<sup>th</sup> percentile queue from the Synchro 9.1 HCM 2010 reports by 25 feet per vehicle. The 95th percentile queues for the 2020 uncapped growth build and 2040 uncapped growth build scenarios are included in the HCM 2010 worksheets in **Appendix G** and **Appendix H**, respectively. The 95th percentile queues for the 2040 limited growth build scenarios are included in the HCM 2010 worksheets in **Appendix H**.

**Table 20: 95th Percentile Uncapped Growth Build Queuing Analysis**

Intersection	Approach	Movement	Storage Length per lane (in feet)	95th Percentile Uncapped Growth Queue (in feet)	
				2020 Build	2040 Build
Midway Road at Glades Cut Off Road	EB	L	520	50	150
		T	N/A <sup>(1)</sup>	275	850
		R		0	0
	WB	L	245	250	600
		T	N/A <sup>(1)</sup>	275	625
		R		0	0
	NB	L	280	100	375
		T	N/A <sup>(1)</sup>	100	475
		R	300	75	475
	SB	L	390	125	375
		T	N/A <sup>(1)</sup>	100	250
		R	230	125	225
Midway Road at NW East Torino Parkway	EB	L	290	25	25
		T	N/A <sup>(1)</sup>	450	1,075
		R	310	425	425
	WB	L	230	250	600
		T	N/A <sup>(1)</sup>	225	475
		R	130	225	25
	NB	L - L/T	220	L - 450	L/T - 350
		T/R - R	N/A <sup>(1)</sup>	T/R - 400	R - 575
	SB	L/T/R	N/A <sup>(1)</sup>	0	0
Midway Road at NW Milner Drive- S Jenkins Road	EB	L	195	25	25
		T/R	N/A <sup>(1)</sup>	0	0
	WB	L	195	25	25
		T/R	N/A <sup>(1)</sup>	0	0
	NB	L	100	25	50
		T/R	N/A <sup>(1)</sup>	25	25
	SB	L/T/R	N/A <sup>(1)</sup>	25	50
Midway Road at Selvitz Road <sup>(2)</sup>	EB	L	230	25	75
		T	N/A <sup>(1)</sup>	225	425
		R		100	250
	WB	L	145	50	75
		T	N/A <sup>(1)</sup>	225	425
		R		225	450
	NB	L	N/A <sup>(1)</sup>	75	175
		T/R		125	200
	SB	L	N/A <sup>(1)</sup>	50	100
		T/R		125	250

Note: (1) Storage length not defined as lane is a through lane, shared through/right-turn lane, or drop lane and storage is measured to adjacent signalized intersection.

(2) Storage provided is measured from plans for the current Midway Road widening project from Selvitz Road to SR-615/S 25<sup>th</sup> Street.

**Table 21: 95th Percentile Limited Growth Build Queuing Analysis**

Intersection	Approach	Movement	Storage Length per lane (in feet)	95th Percentile Limited Growth Queue (in feet)
				2040 Build
Midway Road at Glades Cut Off Road	EB	L	520	200
		T	N/A <sup>(2)</sup>	950
		R		0
	WB	L	245	400
		T	N/A <sup>(2)</sup>	800
		R		0
	NB	L	280	150
		T	N/A <sup>(2)</sup>	125
		R		300
	SB	L	390	250
		T	N/A <sup>(2)</sup>	150
		R		250
Midway Road at NW East Torino Parkway <sup>(1)</sup>	EB	L	290	25
		T	N/A <sup>(2)</sup>	1,075
		R		425
	WB	L	230	600
		T	N/A <sup>(2)</sup>	475
		R		25
	NB	L/T	220	350
		R	N/A <sup>(2)</sup>	575
	SB	L/T/R	N/A <sup>(2)</sup>	0
Midway Road at NW Milner Drive- S Jenkins Road <sup>(1)</sup>	EB	L	195	25
		T/R	N/A <sup>(2)</sup>	0
	WB	L	195	25
		T/R	N/A <sup>(2)</sup>	0
	NB	L	100	50
		T/R	N/A <sup>(2)</sup>	25
	SB	L/T/R	N/A <sup>(2)</sup>	50
Midway Road at Selvitz Road <sup>(1)(3)</sup>	EB	L	230	75
		T	N/A <sup>(2)</sup>	425
		R		250
	WB	L	145	75
		T	N/A <sup>(2)</sup>	425
		R		450
	NB	L	N/A <sup>(2)</sup>	175
		T/R		200
	SB	L	N/A <sup>(2)</sup>	100
		T/R		250

Note: (1) Intersections were not modified from the 2040 Build Full Growth alternative.  
 (2) Storage length not defined as lane is a through lane, shared through/right-turn lane, or drop lane and storage is measured to adjacent signalized intersection.  
 (3) Storage provided is measured from plans for the current Midway Road widening project from Selvitz Road to SR-615/S 25<sup>th</sup> Street.

## CONCLUSIONS

A PD&E study was performed to develop a preferred alternative for a 1.60-mile segment of Midway Road from Glades Cut Off Road to Selvitz Road. Midway Road was studied to evaluate widening the roadway segment from a two (2)-lane segment to a four (4)-lane segment. The analysis reveals that a four (4)-lane segment will provide sufficient capacity to accommodate future traffic through the design year (2040) provided improvements are implemented at the study intersections.

The recommended 2020 uncapped growth build intersection improvements are as follows:

- Midway Road at Glades Cut Off Road
  - Add a northbound right-turn overlap
- Midway Road at NW East Torino Parkway
  - Convert eastbound right-turn lane to a shared through/right-turn lane
- Midway Road at NW Milner Drive/S Jenkins Road
  - Add one (1) eastbound through lane
  - Add one (1) westbound through lane

The recommended 2040 uncapped growth build intersection improvements are as follows:

- Midway Road at Glades Cut Off Road
  - Convert eastbound shared through/right-turn lane to a through lane
  - Add one (1) eastbound right-turn lane
  - Add one (1) northbound left-turn lane
  - Add one (1) northbound right-turn lane
  - Add northbound right-turn overlap
  - Add one (1) southbound through lane
- Midway Road at NW East Torino Parkway
  - Add one (1) eastbound right-turn lane
  - Convert northbound shared through/right-turn lane to a shared through/left-turn lane
  - Add one (1) northbound right-turn lane
  - Convert westbound shared through/right-turn lane to a through lane
  - Add one (1) westbound right-turn lane
- Midway Road at NW Milner Drive/S Jenkins Road
  - Add one (1) eastbound through lane
  - Add one (1) westbound through lane

The recommended 2020 limited growth build intersection improvements are as follows:

- Midway Road at NW East Torino Parkway
  - Convert eastbound right-turn lane to a shared through/right-turn lane
- Midway Road at NW Milner Drive/S Jenkins Road
  - Add one (1) eastbound through lane
  - Add one (1) westbound through lane

The recommended 2040 limited growth build intersection improvements are as follows:

- Midway Road at Glades Cut Off Road
  - Add one (1) southbound left-turn lane
- Midway Road at NW East Torino Parkway
  - Add one (1) eastbound through lane
  - Convert northbound shared through/right-turn lane to a shared through/left-turn lane
  - Add one (1) northbound right-turn lane
  - Convert westbound shared through/right-turn lane to a through lane
  - Add one (1) westbound right-turn lane
- Midway Road at NW Milner Drive-S Jenkins Road
  - Add one (1) eastbound through lane
  - Add one (1) westbound through lane