

I-75 BRIDGE OPENINGS TRAFFIC STUDY

NW 154th Street and NW 170th Street

Prepared for: Town of Miami Lakes
October 23, 2018



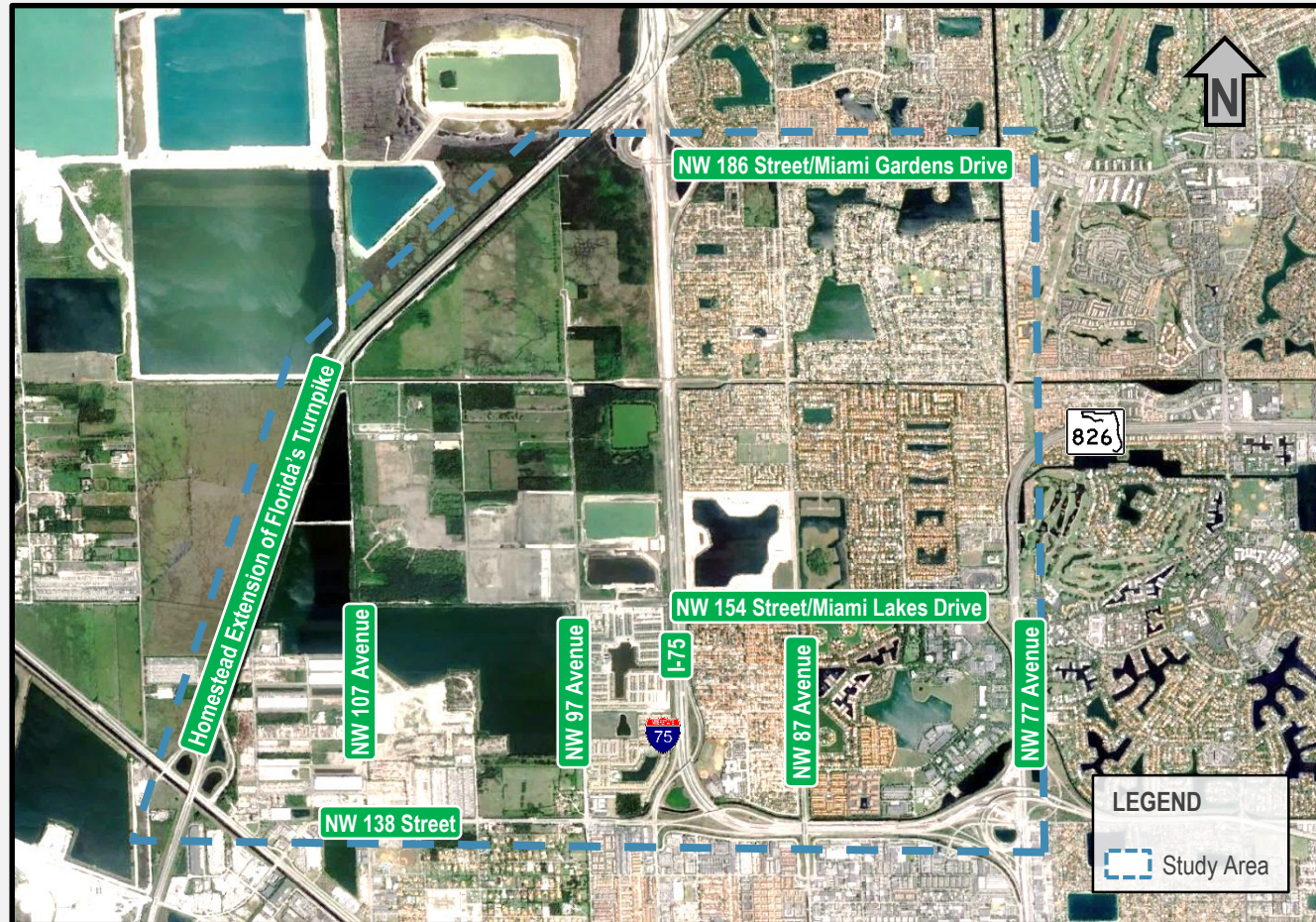
STUDY PURPOSE

- **The purpose of the study is to evaluate the traffic impacts of the opening the bridges over I-75 located on NW 154th Street and NW 170th Street, with and without the presence of the American Dream Mall (ADM) under seven various design alternatives.**

STUDY METHODOLOGY

- **In order to assess the traffic impacts of opening the bridges over I-75 with and without the presence of the American Dream Mall (ADM) under seven various design alternatives, the study analyzed the following:**
- Existing Conditions
- Planned Roadway Improvements
- Committed Developments
- Trip Generation and Assignment
- Future Traffic Volumes and Level of Service
- Network Measure of Effectiveness

STUDY AREA



PLANNED ROADWAY IMPROVEMENTS

- Future roadway improvements inside and outside of the study area were included in the analysis as part of the SERPM model, provided by the Miami-Dade County Department of Transportation and Public Works. Major roadway improvements within the study area include:
 - NW 159th Street underpass
 - NW 146th Street underpass
 - NW 77th Avenue realignment at NW 154th Street/Miami Lakes Drive
 - NW 82nd Avenue at Oak Drive Intersection improvements
 - Park-n-ride at NW 77th Avenue at NW 154th Street/Miami Lakes (MDT)
 - Texas U-Turn on SR 826/Palmetto (FDOT)
 - NW 87th Avenue extension to Okeechobee Road
 - Miami Gardens widening from 4-lanes to 6-lanes
 - SR 924 (Gratigny Parkway) West Extension
 - Palmetto Express Lanes and NW 154th Street widening and roadway improvements from NW 82nd Avenue to NW 77th Avenue

COMMITTED DEVELOPMENT

- Committed development inside and outside of the study area were included in the analysis as part of the SERPM model, provided by the Miami-Dade County Department of Transportation and Public Works. Major committed development within the study area include:
 - Future Bob Graham Senior Development
 - American Dream Mall Development
 - Bob Graham Project (along NW 170th Street)
 - Lennar development
 - New home development, east of NW 87th Avenue
 - Lucida Property

ANALYSIS ALTERNATIVES

A. No Build

- With American Dream Mall (ADM)
- Without American Dream Mall

B. Build with the American Dream Mall

C. Build without the American Dream Mall

NO BUILD ALTERNATIVE

- Major committed developments and programmed transportation improvements are included in the No Build Alternative.
- Does not include the NW 154th Street and NW 170th Street bridges over I-75.
- No Build Alternative:
 - No Build Alternative with the American Dream Mall: includes the construction of the American Dream Mall.
 - No Build Alternative without the American Dream Mall: does not include the construction of the American Dream Mall.

BUILD ALTERNATIVE

- NW 170th Street bridge and NW 154th Street bridge open (Both O)
- NW 170th Street bridge open and NW 154th Street bridge closed (170th O)
- NW 170th Street bridge closed and NW 154th Street bridge open (154th O)
- I-75 connection at NW 170th Street, with NW 170th Street bridge and NW 154th Street bridge open (I-75 at 170th Both O)
- I-75 connection at NW 154th Street, with NW 170th Street bridge and NW 154th Street bridge open (I-75 at 154th Both O)
- I-75 connection at NW 170th Street, with NW 170th Street bridge and NW 154th Street bridge closed (I-75 at 170th Both C)
- I-75 connection at NW 154th Street, with NW 170th Street bridge and NW 154th Street bridge closed (I-75 at 154th Both C)

BUILD ALTERNATIVE WITH THE AMERICAN DREAM MALL

- The following are additional roadway improvements west of I-75 that are included in the Build Alternative with the American Dream Mall:
 - Turnpike interchange connection at NW 170th Street
 - NW 170th Street extension, from NW 97th Avenue to Florida's Turnpike
 - NW 97th Avenue, from NW 170th Street to NW 154th Street
 - NW 97th Avenue, north of NW 170th Street
 - NW 102nd Avenue, south of NW 170th Street
 - NW 102nd Avenue, north of NW 170th Street
 - NW 154th Street extension to NW 107th Avenue
 - NW 107th Avenue connection to NW 170th Street

TRAFFIC FORECASTING

- **Traffic model forecasting** is the attempt of estimating the number of vehicles or people that will use a specific transportation facility in the future. Traffic forecasting uses traffic data along with other data such as population, employment, etc., to develop a traffic demand model to determine future impacts.
- The FSUTM/SERPM 6.5.4 model was utilized in the traffic forecasting.
- FSUTMS, the Florida Standard Urban Transportation Model Structure, is a computerized transportation planning model developed by the Florida Department of Transportation and Florida's Model Task Force. It is the standard demand model used through out the State of Florida.
- For the purposes of this analysis and as directed by the Miami-Dade County Department of Transportation and Public Works, traffic forecasts for the 2040 horizon year were developed utilizing 2040 zonal data and input networks from the 'American Dream Miami & The Graham Project', which was prepared by Leftwich Consultant Engineers, Inc (LCE) for Miami-Dade County in 2016.

NO AMERICAN DREAM MALL CORDON ZONE ANALYSIS

- A cordon zone can be useful in determining additional external trips drawn by observing the volumes coming into and out of the study area between alternatives.

NO American Dream Mall Constructed								
Miami Lakes Access Roads - Directional AADT into and out of the Miami Lakes City Boundary								
Design Alternative	No I-75 Connection				I-75 Connection			
	No Build	Alt. 1 Both O	Alt. 2. 170 th O	Alt. 3 154 th O	Alt. 4 I-75 at 170 th Both O	Alt. 5 I-75 at 154 th Both O	Alt. 6 I-75 at 170 th Both C	Alt. 7 I-75 at 154 th Both C
Input	130,730	129,700	130,440	131,000	128,590	124,740	128,630	126,300
Output	142,060	138,120	141,590	139,500	136,960	135,370	140,310	137,540
Percent Change								
Input	N/A	-0.79%	-0.22%	0.21%	-1.64%	-4.58%	-1.61%	-3.39%
Output	N/A	-2.77%	-0.33%	-1.80%	-3.59%	-4.71%	-1.23%	-3.18%

- Little change to the total number of external vehicles entering and exiting the study area due to the design alternatives implementation. This indicates that the design alternatives, under the No ADM condition, are not drawing additional trips external to the Miami Lakes area.

NO AMERICAN DREAM MALL PRODUCTION AND ATTRACTION CHANGES

- Trips generated within the study area were observed to see if the design alternatives provide enough additional capacity to generate any additional trips.

NO American Dream Mall Constructed								
Total Trip Productions and Attractions at TAZs within the Miami Lakes City Limits								
Design Alternative	No I-75 Connection				I-75 Connection			
	No Build	Alt. 1 Both O	Alt. 2. 170 th O	Alt. 3 154 th O	Alt. 4 I-75 at 170 th Both O	Alt. 5 I-75 at 154 th Both O	Alt. 6 I-75 at 170 th Both C	Alt. 7 I-75 at 154 th Both C
Production	111,454	111,646	111,513	111,639	111,579	111,613	111,458	111,526
Attraction	111,592	111,783	111,652	111,775	111,716	111,751	111,596	111,665
Percent Change								
Production	N/A	0.2%	0.1%	0.2%	0.1%	0.1%	0.0%	0.1%
Attraction	N/A	0.2%	0.1%	0.2%	0.1%	0.1%	0.0%	0.1%

- The design alternatives have little effect on trip generation within the study area under the No ADM condition.

NO ADM TRIP ASSIGNMENT CHANGES

- Daily volumes obtained from the model outputs were compared between the No Build condition and the various design alternatives. Focused on the main east-west thoroughfares servicing communities within the study area, namely NW 154th Street and NW 170th Street.

NO American Dream Mall Constructed								
NW 154 th Street Corridor AADT Sum								
Design Alternative	No I-75 Connection				I-75 Connection			
	No Build	Alt. 1 Both O	Alt. 2. 170 th O	Alt. 3 154 th O	Alt. 4 I-75 at 170 th Both O	Alt. 5 I-75 at 154 th Both O	Alt. 6 I-75 at 170 th Both C	Alt. 7 I-75 at 154 th Both C
Total	476,000	518,000	483,000	517,000	511,000	498,000	468,000	494,000
Percent Change	N/A	8.8%	1.5%	8.6%	7.4%	4.6%	-1.7%	3.8%
NW 170 th Street Corridor AADT Sum								
Design Alternative	No Build	Alt. 1	Alt. 2.	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Total	97,000	116,000	118,000	102,000	110,000	117,000	109,000	102,000
Percent Change	N/A	19.6%	21.6%	5.2%	13.4%	20.6%	12.4%	5.2%

- Trip assignment may adjust to take advantage of the improved network connectivity and the additional capacity each unique alternative provides.

WITH AMERICAN DREAM MALL CORDON ZONE ANALYSIS

- A cordon zone performed to determine additional external trips coming into and out of the study area between alternatives.

American Dream Mall Constructed								
Miami Lakes Access Roads - Directional AADT into and out of the Miami Lakes City Boundary								
Design Alternative	No I-75 Connection				I-75 Connection			
	No Build	Alt. 1 Both O	Alt. 2. 170 th O	Alt. 3 154 th O	Alt. 4 I-75 at 170 th Both O	Alt. 5 I-75 at 154 th Both O	Alt. 6 I-75 at 170 th Both C	Alt. 7 I-75 at 154 th Both C
Input	128,040	126,760	128,240	126,740	125,540	124,350	128,110	123,770
Output	138,410	134,620	138,550	134,270	133,730	133,710	138,740	134,220
Percent Change								
Input	N/A	-3.04%	-1.90%	-3.05%	-3.97%	-4.88%	-2.00%	-5.32%
Output	N/A	-2.74%	0.10%	-2.99%	-3.38%	-3.40%	0.24%	-3.03%

- Little change to the total number of external vehicles entering and exiting the study area due to the design alternatives implementation. This indicates that the design alternatives, under the With ADM condition, are not drawing additional trips external to the Miami Lakes area.

WITH AMERICAN DREAM MALL PRODUCTION AND ATTRACTION CHANGES

- Trips generated within the study area were observed to see if the design alternatives provide enough additional capacity to generate any additional trips.

American Dream Mall Constructed								
Total Trip Productions and Attractions at TAZs within the Miami Lakes City Limits								
Design Alternative	No I-75 Connection				I-75 Connection			
	No Build	Alt. 1 Both O	Alt. 2. 170 th O	Alt. 3 154 th O	Alt. 4 I-75 at 170 th Both O	Alt. 5 I-75 at 154 th Both O	Alt. 6 I-75 at 170 th Both C	Alt. 7 I-75 at 154 th Both C
Production	110,454	110,622	110,554	110,560	110,619	113,380	113,252	113,265
Attraction	110,586	110,756	110,685	110,693	110,749	113,524	113,394	113,405
Percent Change								
Production	N/A	0.2%	0.1%	0.1%	0.1%	2.6%	2.5%	2.5%
Attraction	N/A	0.2%	0.1%	0.1%	0.1%	2.7%	2.5%	2.5%

- The design alternatives have little effect on trip generation within the study area under the With ADM condition.

WITH ADM TRIP ASSIGNMENT CHANGES

- Daily volumes obtained from the model outputs were compared between the No Build condition and the various design alternatives. Focused on the main east-west thoroughfares servicing communities within the study area, namely NW 154th Street and NW 170th Street.

American Dream Mall Constructed								
NW 154 th Street Corridor AADT Sum								
Design Alternative	No I-75 Connection				I-75 Connection			
	No Build	Alt. 1 Both O	Alt. 2. 170 th O	Alt. 3 154 th O	Alt. 4 I-75 at 170 th Both O	Alt. 5 I-75 at 154 th Both O	Alt. 6 I-75 at 170 th Both C	Alt. 7 I-75 at 154 th Both C
Total	471,000	527,000	481,000	521,000	521,000	515,000	477,000	499,000
Percent Change	N/A	11.9%	2.1%	10.6%	10.6%	9.3%	1.3%	5.9%
NW 170 th Street Corridor AADT Sum								
Design Alternative	No Build	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Total	100,000	131,000	131,000	105,000	123,000	130,000	121,000	107,000
Percent Change	N/A	31.0%	31.0%	5.0%	23.0%	30.0%	21.0%	7.0%

- Trip assignment may adjust to take advantage of the improved network connectivity and the additional capacity each unique alternative provides.

LEVEL OF SERVICE ANALYSIS

- Level of Service (LOS) is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as delay, speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.
- Six (6) LOS are defined for each type of facility that have HCM analysis procedures available. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each Level of Service represents a range of operating conditions and the driver's perception of those conditions. Safety is not included in the measures that establish service levels.

LEVEL OF SERVICE ANALYSIS

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service	Average Control Delay (seconds/vehicle)	General Description
A	≥ 10	Free Flow
B	>10 – 20	Stable Flow (slight delays)
C	>20 – 35	Stable flow (acceptable delays)
D	>35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 – 80	Unstable flow (intolerable delay)
F	>80	Forced flow (congested and queues fail to clear)

AM PEAK HOUR FUTURE TRAFFIC CONDITIONS SIGNALIZED INTERSECTION LOS ANALYSIS

Alternative	Existing	No Build		No I-75 Connection						I-75 Connection							
				Alt. 1 Both O		Alt. 2 170 th O		Alt. 3 154 th O		Alt. 4 I-75 at 170 th Both O		Alt. 5 I-75 at 154 th Both O		Alt. 6 I-75 at 170 th Both C		Alt. 7 I-75 at 154 th Both C	
		No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
Scenario																	
NW 138 th Street Corridor																	
NW 138 th Street at NW 107 th Avenue***	B	C	F	C	F	C	F	C	F	C	F	C	F	C	F	C	F
NW 138 th Street at NW 97 th Avenue	D	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E
NW 138 th Street at NW 87 th Avenue	D	E	E	F	E	F	F	E	D	E	E	D	E	F	F	D	E
NW 154 th Street Corridor																	
NW 154 th Street at NW 87 th Avenue***	D	E	E	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NW 154 th Street at NW 82 nd Avenue	D	D	D	E	E	E	F	E	E	D	F	E	F	E	F	E	E
NW 154 th Street at NW 79 th Avenue***	C	C	C	B	C	C	C	B	C	B	B	B	C	C	C	B	B
NW 154 th Street at NW 77 th Court***	E	C	D	D	D	D	D	D	D	C	D	D	D	C	D	C	D
NW 154 th Street at SR 826 SB Ramps	C	B	B	B	B	A	B	B	B	A	B	A	B	B	B	A	B
NW 154 th Street at SR 826 NB Ramps***	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 154 th Street at NW 107 th Avenue	N/A	N/A	C	N/A	F	N/A	C	N/A	F	N/A	F	N/A	F	N/A	C	N/A	C
NW 154 th Street at NW 102 nd Avenue	N/A	N/A	C	N/A	E	N/A	C	N/A	E	N/A	E	N/A	D	N/A	C	N/A	C
NW 154 th Street at NW 97 th Avenue	N/A	N/A	B	N/A	F	N/A	C	N/A	F	N/A	F	N/A	F	N/A	B	N/A	B
NW 170 th Street Corridor																	
NW 170 th Street at NW 87 th Avenue	E	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NW 170 th Street at NW 82 nd Avenue	D	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NW 186 th Street Corridor																	
NW 186 th Street at NW 87 th Avenue	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NW 186 th Street at NW 82 nd Avenue	D	D	E	D	E	D	E	D	D	D	E	D	E	D	E	D	E
SR 826 Underpasses																	
NW 146 th Street at NW 77 th Court	N/A	B	C	C	C	B	C	C	C	C	C	B	C	B	C	B	C
NW 146 th Street at NW 77 th Avenue	N/A	B	B	B	B	B	B	B	B	A	B	A	B	A	B	A	B
NW 159 th Street at NW 77 th Court	N/A	D	C	D	D	D	D	D	C	C	C	C	C	C	D	C	C
NW 159 th Street at NW 77 th Avenue	N/A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

*** HCM 2000 Methodology Used

MIDDAY PEAK HOUR FUTURE TRAFFIC CONDITIONS SIGNALIZED INTERSECTION LOS ANALYSIS

Alternative	Existing	No Build		No I-75 Connection						I-75 Connection							
				Alt. 1 Both O		Alt. 2 170 th O		Alt. 3 154 th O		Alt. 4 I-75 at 170 th Both O		Alt. 5 I-75 at 154 th Both O		Alt. 6 I-75 at 170 th Both C		Alt. 7 I-75 at 154 th Both C	
Scenario		No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
NW 138 th Street Corridor																	
NW 138 th Street at NW 107 th Avenue***	B	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F
NW 138 th Street at NW 97 th Avenue	B	C	C	C	C	C	C	C	C	C	D	C	C	C	C	C	C
NW 138 th Street at NW 87 th Avenue	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
NW 154 th Street Corridor																	
NW 154 th Street at NW 87 th Avenue***	B	B	B	D	E	B	B	D	E	D	E	E	F	B	B	E	F
NW 154 th Street at NW 82 nd Avenue	C	D	C	D	D	D	D	C	C	D	D	D	D	D	D	C	D
NW 154 th Street at NW 79 th Avenue***	N/A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
NW 154 th Street at NW 77 th Court***	D	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
NW 154 th Street at SR 826 SB Ramps	B	B	A	B	B	A	B	B	B	B	A	A	B	A	C	A	B
NW 154 th Street at SR 826 NB Ramps***	D	D	D	D	E	D	D	D	E	D	E	D	D	D	D	D	D
NW 154 th Street at NW 107 th Avenue	N/A	N/A	B	N/A	C	N/A	B	N/A	C	N/A	C	N/A	D	N/A	B	N/A	B
NW 154 th Street at NW 102 nd Avenue	N/A	N/A	B	N/A	B	N/A	B	N/A	B	N/A	B	N/A	B	N/A	B	N/A	B
NW 154 th Street at NW 97 th Avenue	N/A	N/A	B	N/A	E	N/A	B	N/A	E	N/A	E	N/A	E	N/A	B	N/A	B
NW 170 th Street Corridor																	
NW 170 th Street at NW 87 th Avenue	B	B	B	C	D	D	E	B	B	D	F	C	E	D	F	B	B
NW 170 th Street at NW 82 nd Avenue	B	B	B	C	C	C	C	B	B	C	C	C	C	C	C	B	B
NW 186 th Street Corridor																	
NW 186 th Street at NW 87 th Avenue	C	C	C	D	D	C	C	C	C	C	D	C	D	C	C	C	C
NW 186 th Street at NW 82 nd Avenue	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SR 826 Underpasses																	
NW 146 th Street at NW 77 th Court	N/A	C	B	B	B	C	B	C	B	C	B	B	B	C	B	B	B
NW 146 th Street at NW 77 th Avenue	N/A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
NW 159 th Street at NW 77 th Court	N/A	C	C	C	D	C	C	C	C	C	D	C	C	C	C	C	C
NW 159 th Street at NW 77 th Avenue	N/A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

*** HCM 2000 Methodology Used

PM PEAK HOUR FUTURE TRAFFIC CONDITIONS SIGNALIZED INTERSECTION LOS ANALYSIS																	
Alternative	Existing	No Build		No I-75 Connection						I-75 Connection							
				Alt. 1 Both O		Alt. 2 170 th O		Alt. 3 154 th O		Alt. 4 I-75 at 170 th Both O		Alt. 5 I-75 at 154 th Both O		Alt. 6 I-75 at 170 th Both C		Alt. 7 I-75 at 154 th Both C	
Scenario		No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
NW 138 th Street Corridor																	
NW 138 th Street at NW 107 th Avenue***	C	C	F	C	F	C	F	C	F	C	F	C	F	C	F	C	F
NW 138 th Street at NW 97 th Avenue	D	E	F	F	F	E	F	F	F	F	F	E	F	E	F	F	F
NW 138 th Street at NW 87 th Avenue	D	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NW 154 th Street Corridor																	
NW 154 th Street at NW 87 th Avenue***	C	D	D	F	F	D	D	F	F	F	F	F	F	D	E	F	F
NW 154 th Street at NW 82 nd Avenue	D	E	E	F	F	E	F	F	E	F	E	E	F	E	E	E	E
NW 154 th Street at NW 79 th Avenue***	D	C	C	B	B	B	B	B	B	B	C	B	B	B	C	B	B
NW 154 th Street at NW 77 th Court***	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	D	E
NW 154 th Street at SR 826 SB Ramps	C	C	C	C	B	B	B	C	C	B	B	C	C	B	B	C	C
NW 154 th Street at SR 826 NB Ramps***	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NW 154 th Street at NW 107 th Avenue	N/A	N/A	C	N/A	F	N/A	C	N/A	F	N/A	F	N/A	F	N/A	C	N/A	C
NW 154 th Street at NW 102 nd Avenue	N/A	N/A	B	N/A	B	N/A	B	N/A	B	N/A	B	N/A	B	N/A	B	N/A	B
NW 154 th Street at NW 97 th Avenue	N/A	N/A	D	N/A	F	N/A	E	N/A	F	N/A	F	N/A	F	N/A	D	N/A	D
NW 170 th Street Corridor																	
NW 170 th Street at NW 87 th Avenue	C	C	C	F	F	F	F	C	C	F	F	F	F	F	F	C	C
NW 170 th Street at NW 82 nd Avenue	C	E	E	E	F	E	F	E	E	F	F	F	F	F	F	E	E
NW 186 th Street Corridor																	
NW 186 th Street at NW 87 th Avenue	E	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NW 186 th Street at NW 82 nd Avenue	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
SR 826 Underpasses																	
NW 146 th Street at NW 77 th Court	N/A	D	D	C	C	C	C	C	D	C	D	C	C	C	D	C	C
NW 146 th Street at NW 77 th Avenue	N/A	D	D	B	B	B	B	B	D	B	D	B	B	B	D	B	B
NW 159 th Street at NW 77 th Court	N/A	F	F	F	F	F	F	F	F	F	F	F	F	E	F	F	F
NW 159 th Street at NW 77 th Avenue	N/A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

*** HCM 2000 Methodology Used

UNSIGNALIZED INTERSECTION PEAK HOUR FUTURE TRAFFIC CONDITIONS LOS ANALYSIS

Alternative	Existing	No Build		No I-75 Connection						I-75 Connection							
				Alt. 1 Both O		Alt. 2 I70 th O		Alt. 3 I54 th O		Alt. 4 I-75 at I70 th Both O		Alt. 5 I-75 at I54 th Both O		Alt. 6 I-75 at I70 th Both C		Alt. 7 I-75 at I54 th Both C	
Scenario		No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
AM Peak Hour																	
NW I54 th St. at NW 79 th Ct.	H	D	D	E	E	D	D	D	D	D	E	E	E	D	D	D	D
NW I54 th St. at NW 77 th Ave.	A	B	B	C	C	C	C	B	B	B	C	B	C	B	C	B	B
Midday Peak Hour																	
NW I54 th St. at NW 79 th Ct.	N/A	C	C	D	E	D	D	D	D	E	E	E	E	D	D	E	D
NW I54 th St. at NW 77 th Ave.	N/A	A	A	B	B	B	B	B	B	B	B	B	B	A	B	B	A
PM Peak Hour																	
NW I54 th St. at NW 79 th Ct.	E	D	D	E	E	D	D	D	E	E	E	F	F	D	D	E	E
NW I54 th St. at NW 77 th Ave.	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
ICU LOS reported for Un-signalized Intersections																	

ROADWAY SEGMENT LOS

LEVEL OF SERVICE CRITERIA FOR ROADWAY SEGMENTS

Level of Service										
Lanes	A	B	C		D		E		F	
	Volume (v) and V/C	Volume (v) and V/C	Volume (v)	V/C	Volume (v)	V/C	Volume (v)	V/C	Volume (v)	V/C
2	*	*	*	*	304	0.26	1161	1	-	>1
4	*	*	725	0.32	2277	0.76	3015	1	-	>1
6	*	*	1440	0.40	3582	0.79	4545	1	-	>1

AM PEAK HOUR FUTURE TRAFFIC CONDITIONS SEGMENT LOS ANALYSIS																		
Alternative		Existing	No Build		No I-75 Connection						I-75 Connection							
					Alt. 1 Both O		Alt. 2 I70 th O		Alt. 3 I54 th O		Alt. 4 I-75 at 170 th Both O		Alt. 5 I-75 at 154 th Both O		Alt. 6 I-75 at 170 th Both C		Alt. 7 I-75 at 154 th Both C	
From	To		No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
NW 138 th Street Corridor																		
NW 107 th Avenue	NW 97 th Avenue	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 154 th Street Corridor																		
NW 107 th Avenue	NW 102 nd Avenue	D	C or Better	C or Better	C or Better	D	C or Better	C or Better	C or Better	D	C or Better	D	C or Better	D	C or Better	C or Better	C or Better	C or Better
NW 102 nd Avenue	NW 97 th Avenue	D	C or Better	C or Better	C or Better	D	C or Better	C or Better	C or Better	D	C or Better	D	D	D	C or Better	C or Better	C or Better	C or Better
NW 97 th Avenue	NW 87 th Avenue	D	E	E	F	F	E	E	F	F	F	F	F	F	E	E	F	F
NW 87 th Avenue	NW 82 nd Avenue	E	D	D	E	E	D	D	D	D	D	E	E	E	D	D	D	D
NW 82 nd Avenue	NW 79 th Court	F	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D
NW 79 th Court	NW 79 th Avenue	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 79 th Avenue	NW 77 th Court	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 77 th Court	SR 826 SB Ramps	D	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
SR 826 SB Ramps	SR 826 NB Ramps	D	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
SR 826 NB Ramps	NW 77 th Avenue	D	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
NW 170 th Street Corridor																		
NW 97 th Avenue	NW 87 th Avenue	N/A	E	E	F	F	F	F	E	E	F	F	F	F	F	F	E	E
NW 87 th Avenue	NW 82 nd Avenue	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 186 th Street Corridor																		
NW 87 th Avenue	NW 82 nd Avenue	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 107 th Avenue																		
NW 138 th Street	NW 154 th Street	N/A	C or Better	D	C or Better	E	C or Better	D	C or Better	E	C or Better	E	C or Better	E	C or Better	D	C or Better	D
NW 97 th Avenue																		
NW 138 th Street	NW 154 th Street	N/A	D	E	D	D	D	E	D	D	E	E	E	D	D	E	D	E
NW 87 th Avenue																		
NW 138 th Street	NW 154 th Street	E	F	F	F	E	F	F	F	E	F	F	E	F	F	F	E	E
NW 154 th Street	NW 170 th Street	D	E	E	F	F	F	F	F	F	F	F	F	F	F	F	E	F
NW 170 th Street	NW 186 th Street	D	D	D	E	E	E	E	D	D	E	E	E	E	E	E	D	D
NW 82 nd Avenue																		
NW 154 th Street	NW 170 th Street	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
NW 170 th Street	NW 186 th Street	E	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F

MIDDAY PEAK HOUR FUTURE TRAFFIC CONDITIONS SEGMENT LOS ANALYSIS																		
Alternative		Existing	No Build		No I-75 Connection						I-75 Connection							
					Alt. 1 Both O		Alt. 2 I70 th O		Alt. 3 I54 th O		Alt. 4 I-75 at 170 th Both O		Alt. 5 I-75 at 154 th Both O		Alt. 6 I-75 at 170 th Both C		Alt. 7 I-75 at 154 th Both C	
From	To		No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
NW 138 th Street Corridor																		
NW 107 th Avenue	NW 97 th Avenue	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 154 th Street Corridor																		
NW 107 th Avenue	NW 102 nd Avenue	D	C or Better	C or Better	C or Better	C or Better	C or Better	C or Better	C or Better	C or Better	C or Better		C or Better		C or Better	C or Better	C or Better	C or Better
NW 102 nd Avenue	NW 97 th Avenue	N/A	C or Better	C or Better	C or Better		C or Better	C or Better			C or Better				C or Better	C or Better	C or Better	C or Better
NW 97 th Avenue	NW 87 th Avenue	N/A	D or Better	D or Better			D or Better	D or Better							D or Better	D or Better		
NW 87 th Avenue	NW 82 nd Avenue	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 82 nd Avenue	NW 79 th Court	F	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 79 th Court	NW 79 th Avenue	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 79 th Avenue	NW 77 th Court	E	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D
NW 77 th Court	SR 826 SB Ramps	D	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
SR 826 SB Ramps	SR 826 NB Ramps	N/A	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
SR 826 NB Ramps	NW 77 th Avenue	N/A	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
NW 170 th Street Corridor																		
NW 97 th Avenue	NW 87 th Avenue	N/A	D or Better	D or Better					D or Better	D or Better							D or Better	D or Better
NW 87 th Avenue	NW 82 nd Avenue	C or Better	C or Better	C or Better	C or Better		C or Better		C or Better	C or Better	C or Better		C or Better		C or Better		C or Better	C or Better
NW 186 th Street Corridor																		
NW 87 th Avenue	NW 82 nd Avenue	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 107 th Avenue																		
NW 138 th Street	NW 154 th Street	N/A	C or Better	D	C or Better	D	C or Better	D	C or Better	D	C or Better	D	C or Better	D	C or Better	D	C or Better	D
NW 97 th Avenue																		
NW 138 th Street	NW 154 th Street	N/A	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 87 th Avenue																		
NW 138 th Street	NW 154 th Street	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 154 th Street	NW 170 th Street	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 170 th Street	NW 186 th Street	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 82 nd Avenue																		
NW 154 th Street	NW 170 th Street	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
NW 170 th Street	NW 186 th Street	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E

PM PEAK HOUR FUTURE TRAFFIC CONDITIONS SEGMENT LOS ANALYSIS

Alternative		Existing	No Build		No I-75 Connection						I-75 Connection							
					Alt. 1 Both O		Alt. 2 170 th O		Alt. 3 154 th O		Alt. 4 I-75 at 170 th Both O		Alt. 5 I-75 at 154 th Both O		Alt. 6 I-75 at 170 th Both C		Alt. 7 I-75 at 154 th Both C	
From	To		No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
NW 138 th Street Corridor																		
NW 107 th Avenue	NW 97 th Avenue	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 154 th Street Corridor																		
NW 107 th Avenue	NW 102 nd Avenue	D	C or Better	D	C or Better	D	C or Better	C or Better	C or Better	C or Better	C or Better	D	C or Better	D	C or Better	C or Better	C or Better	C or Better
NW 102 nd Avenue	NW 97 th Avenue	D	C or Better	D	D	D	C or Better	C or Better	D	D	D	D	D	D	C or Better	C or Better	C or Better	C or Better
NW 97 th Avenue	NW 87 th Avenue	E	D or Better	D or Better	F	F	D or Better	D or Better	F	F	F	F	F	F	D or Better	D or Better	F	E
NW 87 th Avenue	NW 82 nd Avenue	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 82 nd Avenue	NW 79 th Court	F	E	E	E	E	E	D	E	D	E	D	E	D	E	D	E	D
NW 79 th Court	NW 79 th Avenue	F	D	D	E	E	D	D	D	D	E	D	E	D	D	D	E	D
NW 79 th Avenue	NW 77 th Court	E	E	E	E	E	E	D	E	D	E	E	E	D	E	D	E	D
NW 77 th Court	SR 826 SB Ramps	D	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
SR 826 SB Ramps	SR 826 NB Ramps	D	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
SR 826 NB Ramps	NW 77 th Avenue	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
NW 170 th Street Corridor																		
NW 97 th Avenue	NW 87 th Avenue	N/A	D or Better	D or Better	E	F	F	F	D or Better	D or Better	F	F	F	F	E	E	D or Better	D or Better
NW 87 th Avenue	NW 82 nd Avenue	C or Better	D	D	D	D	D	D	D	C or Better	D	D	D	D	D	D	D	C or Better
NW 186 th Street Corridor																		
NW 87 th Avenue	NW 82 nd Avenue	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 107 th Avenue																		
NW 138 th Street	NW 154 th Street	N/A	C or Better	D	C or Better	E	C or Better	D	C or Better	D	C or Better	D	C or Better	D	C or Better	D	C or Better	D
NW 97 th Avenue																		
NW 138 th Street	NW 154 th Street	N/A	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NW 87 th Avenue																		
NW 138 th Street	NW 154 th Street	E	F	F	F	F	F	D	F	D	F	D	F	D	F	D	E	D
NW 154 th Street	NW 170 th Street	D	D	D	E	E	E	D	E	D	E	D	E	D	E	D	E	D
NW 170 th Street	NW 186 th Street	D	D	D	E	E	E	D	D	D	E	D	E	D	E	D	D	D
NW 82 nd Avenue																		
NW 154 th Street	NW 170 th Street	E	F	F	F	F	F	E	F	E	F	E	F	E	F	E	F	E
NW 170 th Street	NW 186 th Street	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E

27
E

FUTURE NETWORK MEASURES OF EFFECTIVENESS

- Three overall network Measure of Effectiveness (MOEs) were evaluated for the No Build and Alternatives one (1) through seven (7), under the 'No ADM' and 'With ADM' scenarios.
 - Total Delay, in hours
 - Total Travel Time, in hours
 - Average Speed, in miles-per-hour

Network Total Delay (hr)															
No Build		No I-75 Connection						I-75 Connection							
		Alt. 1 Both O		Alt. 2 170 th O		Alt. 3 154 th O		Alt. 4 I-75 at 170 th Both O		Alt. 5 I-75 at 154 th Both O		Alt. 6 I-75 at 170 th Both C		Alt. 7 I-75 at 154 th Both C	
No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
AM Peak Hour															
923	1043	1879	2207	1314	1618	1625	1814	1693	2374	1825	2455	1227	1572	1588	1935
Midday Peak Hour															
279	388	347	545	306	456	324	500	351	591	394	575	306	452	359	481
PM Peak Hour															
1152	1891	1391	2872	1258	2132	1264	2537	1393	2886	1414	2973	1266	2141	1278	2129
Network Total Delay Difference (hr)															
AM Peak Hour															
N/A	N/A	956	1164	391	575	702	771	770	1331	902	1412	304	529	665	892
Midday Peak Hour															
N/A	N/A	68	157	27	68	45	112	72	203	115	187	27	64	80	93
PM Peak Hour															
N/A	N/A	239	981	106	241	112	646	241	995	262	1082	114	250	126	238
Totals		3565		1408		2388		3612		3960		1288		2094	

Total Travel Time (hr)															
No Build		No I-75 Connection						I-75 Connection							
		Alt. 1 Both O		Alt. 2 I70 th O		Alt. 3 I54 th O		Alt. 4 I-75 at I70 th Both O		Alt. 5 I-75 at I54 th Both O		Alt. 6 I-75 at I70 th Both C		Alt. 7 I-75 at I54 th Both C	
No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
AM Peak Hour															
1615	1738	2634	2969	2064	2391	2332	2513	2420	3150	2547	3229	1969	2343	2272	2646
Midday Peak Hour															
690	801	799	1027	752	923	749	934	812	1088	838	1049	756	916	772	906
PM Peak Hour															
1822	2566	2109	3631	1972	2868	1946	3240	2119	3645	2134	3737	1984	2885	1961	2829
Network Total Travel Time Difference (hr)															
AM Peak Hour															
N/A	N/A	1019	1231	449	653	717	775	805	1412	932	1491	354	605	657	908
Midday Peak Hour															
N/A	N/A	109	226	62	122	59	133	122	287	148	248	66	115	82	105
PM Peak Hour															
N/A	N/A	287	1065	150	302	124	674	297	1079	312	1171	162	319	139	263
Totals		3937		1738		2482		4002		4302		1621		2154	

Average Speed (mph)															
No Build		No I-75 Connection						I-75 Connection							
		Alt. 1 Both O		Alt. 2 I70 th O		Alt. 3 I54 th O		Alt. 4 I-75 at I70 th Both O		Alt. 5 I-75 at I54 th Both O		Alt. 6 I-75 at I70 th Both C		Alt. 7 I-75 at I54 th Both C	
No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM	No ADM	With ADM
AM Peak Hour															
15	14	10	9	13	11	11	10	11	9	10	8	13	12	11	9
Midday Peak Hour															
21	18	20	16	21	18	20	16	20	16	19	16	21	18	19	17
PM Peak Hour															
13	9	12	7	13	9	12	8	12	7	12	7	13	9	12	9
Network Total Average Speed Difference (hr)															
AM Peak Hour															
N/A	N/A	-5	-5	-2	-3	-4	-4	-4	-5	-5	-6	-2	-2	-4	-5
Midday Peak Hour															
N/A	N/A	-1	-2	0	0	-1	-2	-1	-2	-2	-2	0	0	-2	-1
PM Peak Hour															
N/A	N/A	-1	-2	0	0	-1	-1	-1	-2	-1	-2	0	0	-1	0
Totals		-16		-5		-13		-15		-18		-4		-13	

CONCLUSIONS AND RECOMMENDATIONS

- The Cordon Analysis showed that the design alternatives are not drawing additional external trips to the Miami Lakes area.
- The Productions and Attraction Analysis revealed that the design alternatives have little effect on trip generation within the study area.
- Design alternatives seem to provide additional route choices for local trips rather than providing enough additional capacity to induce additional trips.
- Both NW 154th Street and NW 170th Street experience increases under most design alternatives.
- NW 154th Street experiences minimal impacts under Alternatives two (2) and six (6) (No NW 154th Street Bridge opening).

CONCLUSIONS AND RECOMMENDATIONS

- The LOS degrades at the intersections along NW 170th Street under the 'No ADM' and the "With ADM" scenarios during the Midday and PM peak hours in Alternatives 1, 2, 4, 5 and 6.
- LOS does not improve at intersections along NW 186th Street in any of the design alternatives under the 'No ADM' or "With ADM" scenarios, except for the intersection of NW 186th Street at NW 82nd Avenue, during the AM peak hour in Alternative 3.

CONCLUSIONS AND RECOMMENDATIONS

- **LOS at the SR 826 at NW 154th Street interchange SB Ramps experienced the following:**
 - LOS improves in the AM peak hour in Alternatives 2, 5, 6 and 7 under the 'No ADM' scenario. LOS remains unchanged in all other alternatives.
 - During the Midday peak hour LOS improves in Alternatives 2, 4, 5 and 7 under the 'No ADM' scenario. LOS deteriorates in Alternatives one 1, 2, 3, 5, 6 and 7 under the "With ADM" scenario.
 - LOS improves in the PM peak hour in Alternative 1 under the 'With ADM' scenario, in Alternatives 2, 4 and 6 under the 'No ADM' and 'With ADM' scenarios. LOS remains unchanged in all other alternatives.
- **LOS at the SR 826 at NW 154th Street interchange NB Ramps experienced the following:**
 - LOS remains unchanged in all alternatives under the 'No ADM' and 'With ADM' scenarios.
 - During the Midday peak hour LOS deteriorates in Alternatives 1, 3 and 4 under the "With ADM" scenario.
 - In the PM peak hour LOS remains unchanged in all alternatives.

CONCLUSIONS AND RECOMMENDATIONS

- Segment Level of Service Analysis: Regardless of the alternative, the LOS was virtually unchanged along the following roadway segments, under both the 'No ADM' and 'With ADM' scenarios:
 - NW 138th Street between NW 107th Avenue and NW 97th Avenue
 - NW 154th Street between NW 77th Court and SR 826 SB Ramps
 - NW 154th Street between SR 826 SB Ramps and SR 826 NB Ramps
 - NW 154th Street between SR 826 NB Ramps and NW 77th Avenue
 - NW 186th Street between NW 87th Avenue and NW 82nd Avenue
 - NW 82nd Avenue between NW 170th Street and NW 186th Street

CONCLUSIONS AND RECOMMENDATIONS

- **NW 154th Street:**
 - Under both the "No ADM" and "With ADM" scenarios, LOS was virtually unchanged along all NW 154th Street study segments during AM and Midday peak hours for alternative 2 and 6, where NW 154th Street bridge remains closed.
 - Under both the 'No ADM' and 'With ADM' scenarios, some NW 154th Street study segments showed an improvement in LOS during the PM peak hour for Alternatives 2 and 6. LOS was virtually unchanged along the rest of the NW 154th Street study segments. However, Alternative 6 requires a new interchange at I-75 and NW 170th Street. Alternative 2 utilizes the existing infrastructure.
 - All other alternatives showed a degradation in Level of Service along NW 154th Street, under both the 'No ADM' and 'With ADM' scenarios.

CONCLUSIONS AND RECOMMENDATIONS

- **NW 170th Street:**
 - Under both the 'No ADM' and 'With ADM' scenarios, LOS was virtually unchanged on all study segments along NW 170th Street during the AM and Midday peak hours for Alternatives 3 and 7.
 - Under both the 'No ADM' and 'With ADM' scenarios, some NW 170th Street study segments showed an improvement in LOS during the PM peak hour for Alternatives 3 and 7. LOS was virtually unchanged along the rest of the NW 170th Street study segments. However, Alternative 7 requires a new interchange at I-75 and NW 154th Street. Alternative 3 utilizes the existing infrastructure.
 - All other alternatives showed a degradation in LOS along NW 170th Street under both the 'No ADM' and 'With ADM' scenarios.

CONCLUSIONS AND RECOMMENDATIONS

- **Network Measures of Effectiveness Analysis:**
 - All alternatives experience an increase in network Total Delay and network Total Travel Time during all design periods, compared to the No Build alternative under the 'No ADM' and 'With ADM' scenarios.
 - All alternatives experience a decrease in Average Speed during all design periods, compared to the No Build alternative under the 'No ADM' and 'With ADM' scenarios.
 - Alternatives 2 and 6 present the least degradation in network Total Delay, Total Travel Time, and Average Speed.
 - Alternative 6 requires a new interchange at I-75 and NW 154th Street. Alternative 2 utilizes the existing infrastructure.

CONCLUSIONS AND RECOMMENDATIONS

- **Based upon the finding of the study, Alternative two (2) is recommended: NW 170th bridge open and NW 154th bridge closed.**
 - Alternatives 2 and 6 present the least impact to the roadway network.
 - Alternative 6 is not recommended since it includes a connection to I-75 at NW 170th Street. The cost of a new interchange at this location will likely offset the benefits of the improvements. Similar overall network improvements can be obtained by implementing Alternative 2 at no additional cost.
 - Alternative 2 also presents improvements in overall intersection Level of Service at the SR 826 at NW 154th Street interchange, SB ramps, during the AM, Midday, and PM peak hours as follows:
 - LOS improvement during the AM peak hour under the 'No ADM' scenario.
 - During the Midday peak hour, the LOS improves under the 'No ADM' scenario but deteriorates under 'With ADM' scenario.
 - LOS improvement during the PM peak hour under both the 'No ADM' and the 'With ADM' scenarios.