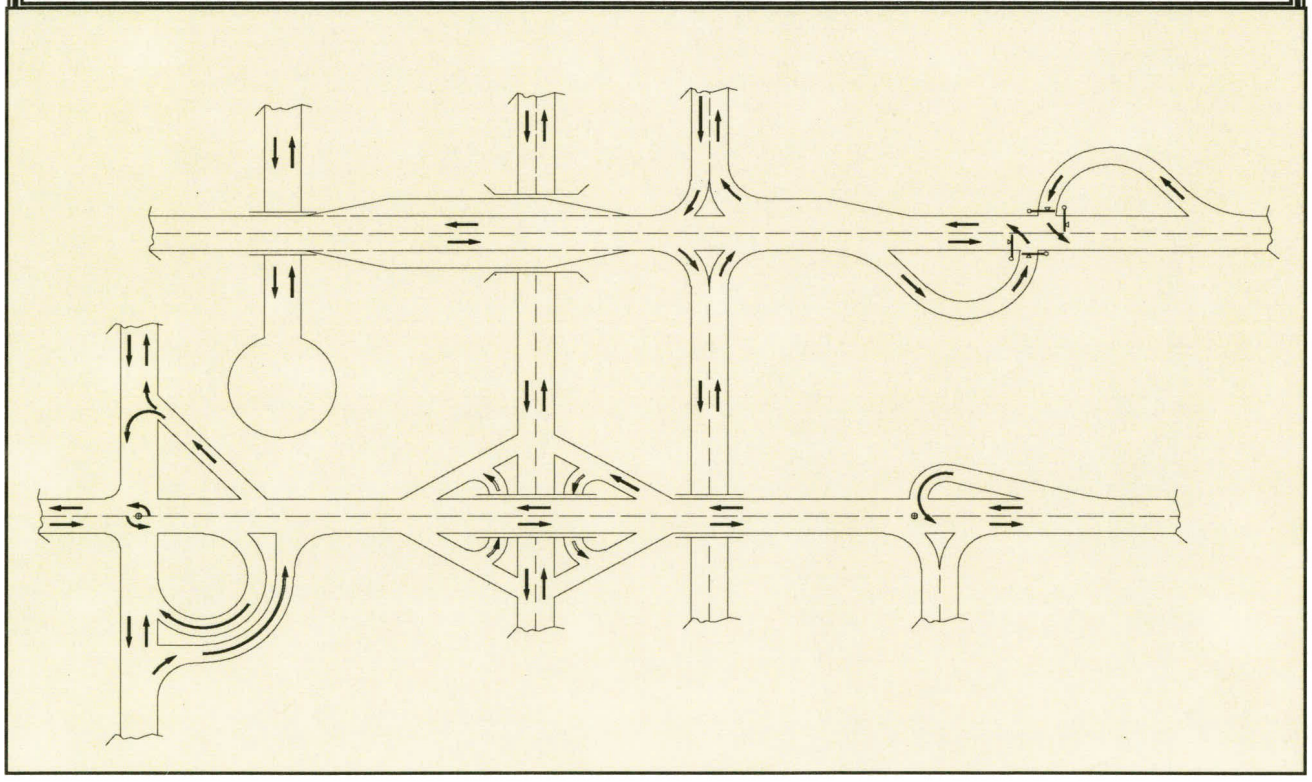
SUPERARTERIAL NETWORK STUDY

PROJECT NO. MPO-96-07

METRO-DADE

DADE COUNTY METROPOLITAN PLANNING ORGANIZATION

Recommended Improvements



Prepared by :

PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

SW 137th Avenue

Existing Geometry

SW 137th Avenue is a north-south arterial extending from SW 176th Street to NW 10th Street. It is a four-lane divided facility with left turn pockets from Kendall Drive (SW 88th Street) to Bird Road (SW 40th Street). East of Bird Road, the geometry changes to a six-lane divided facility to Coral Way (SW 26th Street), and to a four-lane divided facility from Coral Way to SW 8th Street (Tamiami Trail). From SW 8th Street to NW 10th Street, SW 137th Avenue is a two-lane undivided facility. Land use along this corridor is mixed residential and commercial. Residential constitutes the majority of the land uses along SW 137th Avenue. North of SW 8th Street, land uses along SW 137th Avenue are primarily industrial. SW 137th Avenue currently ends at the Rinker Company where sand is shipped to construction sites.

Observed Conditions

SW 137th Avenue carries heavy northbound traffic during the morning peak period and southbound during the afternoon peak period through the study area. Drainage problems were observed during the field visits between Kendall Drive and Coral Way in both directions along SW 137th Avenue, adding to the demand placed on this facility. On rainy days, the right lanes in both directions are completely flooded, causing the facility to operate as a two-lane divided facility.

Delays observed at the intersection of Kendall Drive and SW 137th Avenue were mainly due to heavy traffic on both arterials, with Kendall Drive carrying higher volumes. During the PM peak period, the southbound to westbound right turn forms a queue that extends to SW 79th Street. Cars were observed to turn right at SW 84th Street, enter the shopping center located at the northwest corner of the intersection and exit on Kendall Drive west of the intersection.

Delays observed at the intersection of SW 137th Avenue and Miller Drive (SW 56th Street) are mainly due to the crossing of two major arterials with heavy flow during the peak hours and insufficient capacity on Miller Drive. A similar situation was observed at the intersection of SW 137th Avenue and Bird Road. At that intersection, commuter traffic patterns for the morning peak period produce a heavy volume for the right turn movement northbound to eastbound at SW 137th Avenue and SW 8th Street. The queue for that movement was observed to back up to SW 11th Street. Although that movement is not controlled by a signal, the heavy eastbound movement on SW 8th Street prevents drivers from making the right turn from SW 137th Avenue. Drivers avoid this movement by making a left turn into the shopping center on the southwest corner of the intersection, cutting through the parking lot, and exiting the shopping center onto SW 8th Street westbound west of SW 137th Avenue. The queue reaches SW 142nd Avenue during the morning peak period. Queues, with minimum of ten vehicles, were observed at each of the multiple access points to the shopping center. The average waiting time before entering SW 8th Street from any of the shopping center access was observed to be four minutes.

A similar situation was observed during the afternoon peak period for the westbound to southbound left turn movement from SW 8th Street. Storage capacity for this left turn is

insufficient. Drivers trying to avoid the lengthy wait traveled westbound on SW 8th Street, then northbound, make a left turn into the shopping center, and finally exit the shopping center on SW 137th Avenue south of the intersection. This is illustrated on Figure 1.

Minimum northbound through traffic was observed on 137th Avenue at SW 8th Street. Signal phasing allowing northbound and southbound movements to occur simultaneously would allow sufficient time for the northbound to westbound movement. Additional capacity should be provided on SW 137th Avenue north of SW 8th Street for buses coming out of the maintenance yard, and trucks from the Rinker Company. On this two-lane road, trucks and buses are unable to make the westbound to northbound right turn from SW 8th Street without the use of both lanes, creating conflicts for the westbound SW 8th Street through movement as well as the southbound traffic on SW 137th Avenue.

Future proposed improvements for this area include the extension of SR 836 to SW 137th Avenue, widening of SW 137th Avenue to six lanes from SW 8th Street to the SR 836 extension and construction of NW 12th Street. The SR 836 Extension will greatly increase traffic volumes along SW 137th Avenue. Necessary provisions should be taken now at the intersection on SW 137th Avenue and SW 8th Street to provide adequate capacity, intersection improvements or grade separation, for the future.

Recommended Improvements

Table 1 shows the transportation deficiencies, applicable corrective strategies/techniques and recommended actions at each of the congested location on SW 137th Avenue. Based on the field observation, and additional lane is warranted along Miller Drive north and south of SW 137th Avenue. However, that area is built out and all of the available right-of-way seems to have used for roadway improvements. Right-of-way acquisition along Miller Drive may reveal to be infeasible due to costs and community impact. An alternate solution would be to provide exclusive eastbound and westbound right turns on Miller Drive at SW 137th Avenue. Some right-of-way would still be needed to accommodate the additional turn lanes.

FIGURE 1
Traffic Patterns at SW 137th Avenue and SW 8th Street

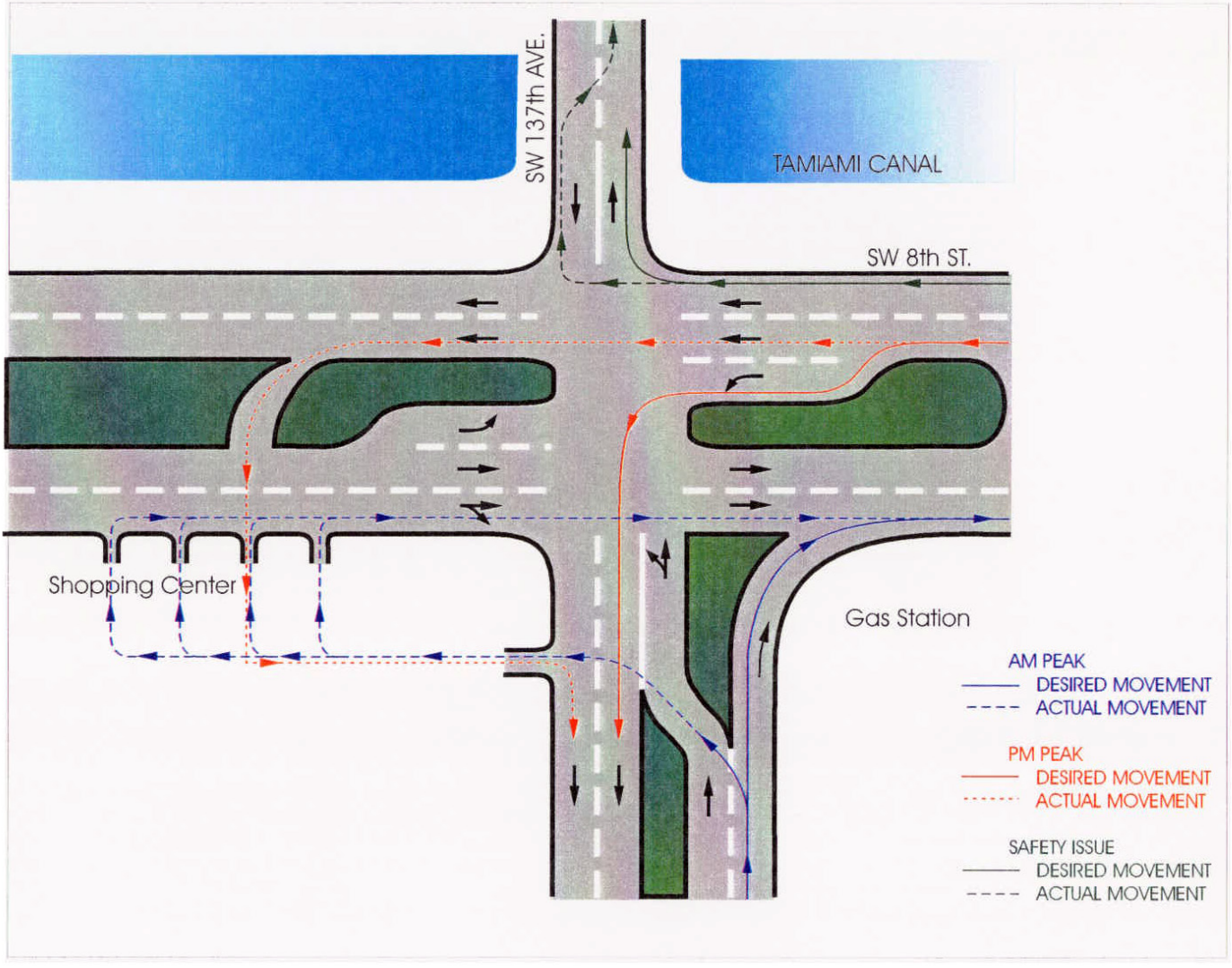


Table 1
SW 137th Avenue (From SW 88th Street to NW 10th Street)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problem	Recommended Actions
1.	SW 137th Avenue @ Kendall Drive	• Insufficient capacity for southbound to westbound RT during the PM peak period	• Signs on SW 137th Ave. encouraging the use of SW 84th St. and SW 142nd Ave. as an alternate route, and access to the shopping center through SW 84th St. (1)		• Same as corrective strategy/technique
		• Crossing of two major arterials	• Grade Separation (2)	• Right-of-way	• Coordinate with Major Improvement Study
		• Insufficient capacity on SW 137th Avenue during the peak periods	• Provide new lanes on SW 137th Avenue from Kendall Drive to Bird Road (3)	• Right-of-way	• Same as corrective strategy/technique
		• Drainage problems on SW 137th Avenue north of Kendall Drive	• Provide adequate drainage (4)		
2.	SW 137th Avenue @ Miller Drive	• Insufficient capacity on Miller Drive causing delays on 137th Avenue during peak hours.	• Provide additional through lanes on Miller Drive (5)	• Right-of-way	• Detailed analysis based on actual traffic counts needs to be performed.
		• Drainage problems on SW 137th Avenue	• Provide adequate drainage (6)		• Same as corrective strategy/technique

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

Table 1 (Continued)
SW 137th Avenue (From SW 88th Street to NW 10th Street)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problem	Recommended Actions
3.	SW 137th Avenue @ Miller Drive	• Insufficient capacity southbound to eastbound LT during the PM peak period	• Increase length of storage bay (7)		• Detailed geometry analysis needs to be performed.
4.	SW 137th Avenue @ Bird Road	• Delays due to crossing of two major arterials with heavy flow during the peak periods	• Increase number of through lanes on Bird Road (8)	• Right-of-way • Environmental problems due to the canal on the south side of Bird Road	• Detailed geometry, traffic counts, and signal timing and phasing analyses need to be performed.
		• Friction due to numerous access points north of Bird Road on southbound SW 137th Ave.	• Driveway consolidation (parking lots are already connected) (9)	• Opposition from business owners	• Same as corrective strategy/technique
4.	SW 137th Avenue between Coral and SW 8th Street	• Drainage problems	• Provide adequate drainage (10)		• Same as corrective strategy/technique
5.	SW 137th Avenue @ 8th Street	• Delays on SW 137th Ave. due to heavy volumes on SW 8th St. Heavy northbound to eastbound and westbound to southbound delays during the AM and PM peak periods, respectively	• Widen 8th Street west of SW 127th Avenue (11) • Increase length of storage bay for westbound to southbound left turn (12) • Connect SW 6th Street to SW 137th Avenue to provide alternate route to SW 8th Street (13)	• Community opposition	• Same as corrective strategy/technique

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

Table 1 (Continued)
SW 137th Avenue (From SW 88th Street to NW 10th Street)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problem	Recommended Actions
	SW 137th Avenue @ 8th Street		• Grade separation (14) (Interim improvement : provide overlap phasing for the north-south movements)	• Right-of-way • Opposition from business owners	
		• High percentage of trucks and school buses. Bridge is not wide enough to accommodate heavy vehicles	• Widen bridge on SW 137th Avenue north of SW 8th Street (15)	• Environmental problems	• Detailed geometry analysis needs to be performed
		• Insufficient capacity on SW 137th Avenue during peak periods	• Provide additional lanes on SW 137th Avenue from Coral Way to SW 8th Street (16)	• Right-of-way	• Detailed analysis needs to be performed
		• Delays due to toll plaza on Turnpike's ramp	• Improve toll collection through the installation of AVI (Automatic Vehicle Identification) (17)		• Coordinate with the Tunpike authorities

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

SW 117th Avenue

Existing Geometry

SW 117th Avenue is north-south arterial extending from Quail Roost Drive to SW 8th Street, with the exception of the unbuilt section between SW 168th Street and SW 152nd Street (Coral Reef Drive). It is a five-lane facility from the Turnpike to Sunset Drive (SW 72nd Street), changing to a four-lane divided facility from Sunset Drive to Bird Road, and a two-lane undivided facility from Bird Road to SW 8th Street. SW 117th Avenue runs parallel to the Turnpike, providing an alternate route to this major freeway for commuters living and/or working in southwest Dade County.

Observed Conditions

Delays observed on SW 117th Avenue from Kendall Drive to the Turnpike northbound off ramp are mainly due to insufficient capacity on the cross streets (Sunset Drive, Miller Drive, and Bird Road), and conflicts between heavy traffic flow on both the cross-streets and SW 117th Avenue.

Toll plaza operation and access ramps to and from the Turnpike also contribute to congestion on SW 117th Avenue near Bird Road. The Turnpike northbound-off ramp is located on SW 117th Avenue within a short distance just south of Bird Road. A combination of short spacing between signals and heavy traffic flow prevents drivers exiting the Turnpike to make necessary lane changes to reach Turnpike's ramps, stay on SW 117th Avenue, and turn on Bird Road. Moreover, additional lane usage indicator signs are needed on northbound SW 117th Avenue south of SW 40th Street (Bird Road) to allow drivers on SW 117th Avenue ample time to make necessary lane changes. Some drivers find themselves trapped in the wrong lane, one of which leads to the Turnpike northbound on-ramp. The additional signs placed further ahead of the intersection would eliminate unnecessary conflict points at the intersection, increasing traffic flow.

From the Turnpike northbound off ramp to SW 8th Street, SW 117th Avenue does not have the capacity to meet the demand during peak periods. During morning peak hours, delays due to the toll plaza on the Turnpike northbound cause the northbound on-ramp to back up, forming a queue that spills over on SW 117th Avenue. SW 117th Avenue is also used by commuters to avoid the toll plaza located on the Turnpike just north of Bird Road. Drivers avoiding the toll plaza proceed on SW 117th Avenue to SW 8th Street, make a left turn onto SW 107th Avenue to the SR 836 eastbound on-ramp. Increasing capacity on SW 117th Avenue will encourage drivers to use this alternate route causing loss of revenue for the Turnpike. Although one of the recommendations is to widen SW 117th Street north of Bird Road, the impact of this widening on toll plaza revenues should also be taken into consideration.

SW 117th Avenue is also used by students entering the Florida International University (FIU) campus located on SW 117th Avenue at SW 17th Street. The heavy volume of FIU students and through traffic on SW 117th Avenue cause a queue to form on SW 117th Avenue northbound that moves at 5 MPH during the peak hours. The excessive demand placed on this facility is aggravated with numerous traffic lights in this section of the road, causing further delays for the commuter.

Proposed plans for the Turnpike toll plaza include relocating the mainline toll plaza further south (closer to Miller Drive), and new toll facilities at the Bird Road northbound on-ramp. Improvements to the Turnpike northbound on-ramp include a two-lane ramp, with an additional 1,000 feet of storage from the existing layout. This would increase the storage capacity for the northbound on ramp and may help alleviate the congestion on SW 117th Avenue. The northbound off-ramp will remain at its present location, south of Bird Road.

Recommended Improvements

Table 2 shows a summary of the transportation deficiencies, corrective strategies/techniques applicable, and recommended actions at each problem location for SW 117th Avenue.

Table 2
SW 117th Avenue (From SW 88th Street to SW 8th Street)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problem	Recommended Actions
1.	SW 117th Ave. @ Kendall	• Delays due to crossings of two major arterials	• Improvements to Kendall Drive to be coordinated with the proposed Major Improvement Study (18)		• Same as corrective strategy/technique
2.	SW 117th Avenue @ 7700 Block	• Traffic signals spaced too close together.	• Signal timing coordination (19)		• Same as corrective strategy/technique
3.	SW 117th Avenue @ Sunset Drive	• Insufficient capacity on Sunset Drive causing delays on 117th Ave. during peak hours.	• Provide additional through lanes on Sunset Drive (20)	• Right-of-way	• Detailed analysis based on actual traffic counts and available right-of-way needs to be performed.
4.	SW 117th Avenue @ Miller Drive	• Insufficient capacity on Miller Drive	• Provide additional lanes on Miller Drive (21)	• Right-of-way	• Detailed analysis based on actual traffic counts and available right-of-way needs to be performed.

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

Table 2 (Continued)
SW 117th Avenue (From SW 88th Street to SW 8th Street)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problem	Recommended Actions
5.	SW 117th Avenue from Turnpike northbound off-ramp to SW 8th Street	• Delays due to exiting traffic from Turnpike northbound-off ramp	• Relocate ramp further south (22)	• Cost • Environmental problems • Community opposition	• Detailed analysis to quantify number of vehicles bypassing Toll Plaza
		• Delays due to friction caused by improper lane usage indicator signs	• Improve signage on SW 117th Avenue south of SW 40th Street (23)		• Coordinate with proposed improvements at Toll Plaza
		• Delays due to crossing of two major arterials at Bird Road with heavy flow during the peak periods.	• Widen Bird Road west of SW 117th Avenue (24)	• Right-of-way • Environmental problems due to the canal on the south side of Bird Road	
		• Delays due to Turnpike northbound on-ramp and mainline Toll Plaza	• Incorporate Turnpike improvements • Provide Automatic Vehicle Identification on future ramps (26)		
		• Insufficient capacity on SW 117th Avenue	• Provide additional lanes on SW 117th Avenue (27)	• Community opposition • Turnpike opposition due to potential loss of revenue	

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

SW/NW 107th Avenue

Existing Geometry

SW 107th Avenue is a north-south major arterial extending from Quail Roost Drive to NW 41st Street to the north, with an unbuilt section between SW 160th Street to SW 104th Street. SW 107th Avenue is a five-lane (with a continuous left turn lane) facility from Kendall Drive to Bird Road, widening to a six-lane divided facility from Bird Road to SW 8th Street. SW 107th Avenue narrows down to a four-lane divided facility from SW 8th Street to NW 41st Street, and to a two-lane undivided facility to NW 58th Street.

Observed Conditions

Delays observed on SW 107th Avenue from Kendall Drive to SW 8th Street are mainly due to crossing of two major arterials with heavy volumes during the peak periods and insufficient capacity on the cross streets.

Very high levels of congestion were observed during the field visits on this facility between SW 8th Street and SR 836. SW/NW 107th Avenue is used in that segment as a bypass route to access and/or exit SR 836 by commuters avoiding the Turnpike Toll Plaza located at Bird Road, and by residents of the surrounding neighborhoods (Sweetwater, Fountainbleau Park). The congestion on SW 107th Avenue is also due to the current lack of north-south arterials crossing SR 836. In much of southwest Dade continuous arterials exist at the one-mile section lines. However, in the case of SW/NW 107th Avenue and SW/NW 87th Avenue between SW 8th Street and NW 36th Street, continuity is offered only at the two-mile section line, placing a demand on this facility that is much greater than the actual capacity. The proposed improvements by the County to improve SW/NW 97th Avenue, include widening and an overpass at SR 836. Other factors influencing the high levels of congestion observed are: slow speed zones for the two schools in the area of SW 107th Avenue and SW 4th Street, the opening of the new FIU campus on SW 107th Avenue and Flagler Street, the high number of businesses along the arterial, and the high population density resulting from numerous apartment buildings and condominiums. At present, FIU is not holding regular classes in this campus, however this fact will change in the near future, placing further demands on SW 107th Avenue.

SW 109th Avenue is used as an alternate route to SW 107th Avenue between SW 8th Street and NW 7th Street during the peak hours, creating very heavy eastbound to northbound left-turn volumes at the intersections of SW 107th Avenue and Flagler Street and SW 107th Avenue and NW 7th Street (Fontainbleau Boulevard).

Between SR 836 and NW 25th Street, the facility has insufficient capacity to meet the demand. Truck traffic accounts for approximately 15 percent of the total traffic volume in the area. As part of the Beacon TradePort development, NW 107th Avenue will be widened to six lanes from NW 12th Street to NW 27th Street. It is expected that the intersection of NW 107th Avenue and NW 41st Street will be one of the busiest intersections in Dade County in the next 10 years, due to an increase in residential, commercial, and industrial land use in that area.

Recommended Improvements

Table 3 shows a summary of the transportation deficiencies, corrective strategies/techniques applicable, and recommended actions at each problem location for SW 107th Avenue. Based on the field observation, and additional lane is warranted along Sunset Drive (SW 72nd Street) north and south of SW 107th Avenue. However, that area is built out and all of the available right-of-way seems to have used for roadway improvements. Right-of-way acquisition along Sunset Drive may reveal to be infeasible due to costs and community impact. An alternate solution would be to provide exclusive eastbound and westbound right turns on Sunset Drive at SW 107th Avenue. Some right-of-way would still be needed to accommodate the additional turn lanes.

Table 3
NW/SW 107th Avenue (From SW 88th Street to NW 41st Street)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problem	Recommended Actions
1.	SW 107th Avenue @ Sunset Drive	• Insufficient capacity on Sunset Drive east and west of SW 107th Avenue	• Provide exclusive right turn lanes eastbound and westbound (28)	• Eastbound right turn lane maybe accommodated by moving existing bus stop further west • Westbound right turn would require right-of-way acquisition	• Detailed analysis based on actual traffic counts needs to be performed • Coordination with MDTA for bus stop relocation
2.	SW 107th Avenue @ Miller Drive	• Moderate delay on Miller Drive east and west of SW 107th Avenue	• Provide exclusive eastbound to southbound and westbound to northbound right turn lanes (29)	• Additional right-of-way may be required	• Detailed analysis based on actual traffic counts needs to be performed
3.	SW 107th Avenue @ Bird Road	• Delay due to crossing of two major arterials with heavy flow during peak periods	• Provide grade separation (30)	• Right-of-way • Opposition from business owners	• Detailed geometry analysis needs to be performed
4.	SW 107th Avenue @ Coral Way	• Heavy Eastbound to northbound left turn movement in the morning peak period	• Additional storage capacity for the left turn movement (31)		• Detailed analysis based on current counts and signal timings needs to be performed
5.	SW 107th Avenue between SW 8th Street and Flagler Street	• Conflicting Turning Movements	• Prohibit left turns except at Flagler, 8th St., and 4th Street during peak hours (32)		• Detailed traffic and geometry analysis needs to be performed.

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

Table 3 (Continued)
NW/SW 107th Avenue (From SW 88th Street to NW 41st Street)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problem	Recommended Actions
	SW 107th Avenue between SW 8th Street and Flagler Street	• Numerous access points within short distance	• Consolidate driveways between shopping centers (33) • Provide access to shopping centers from side streets only (34)	• Community opposition	• Coordinate with the 107th Avenue Arterial Investment Study and proposed PD&E study
		• Insufficient capacity	• Add new lanes on SW 107th Avenue (35) • Widen bridge over Tamiami Canal (36)	• Right-of-way	
			• Provide dual left turn at Flagler (eastbound to northbound) **or** restripe to allow left turn from inside through lane (37)	• Right-of-way needs to be acquired to add left turn lane.	
			• Resurface SW109th Avenue. and encourage SW 109th Avenue as an alternate route between SW 8th Street and NW 7th Street (38) • Shuttle service between FIU campuses (39) • Bicycle path (40)	• Community opposition since 109th Avenue goes through residential area and dead ends at NW 7th Street.	
		• School Zone	• Provide additional access to school directly from SW 8th Street (41)	• Requires canal crossing and going through residential neighborhood.	

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

Table 3 (Continued)
NW/SW 107th Avenue (From SW 88th Street to NW 41st Street)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problem	Recommended Actions
6.	NW 107th Avenue between Flagler Street and SR 836	• Insufficient capacity • Conflicting turning movements	• Add new lanes on SW 107th Avenue (42) • Improve intersection at NW 7th Street and NW 107th Avenue to accommodate rerouted traffic (increase se storage length, improve signal timing) (43) • Provide dual lefts from freeway eastbound off-ramp (44)	• Provision of dual LT should be coordinated with proposed PD&E study.	• Detailed traffic and right-of-way analyses need to be performed
7.	NW 107th Avenue between SR 836 and NW 25th Street	• Insufficient capacity • Truck percentage for the area is 15%	• Add new lanes on NW 107th Avenue (45) • Prohibit trucks during peak hours (46)	• Right-of-way • Opposition from business owners and truck operators.	• Coordinate with Beacon TradePost Center being developed in the area.
8.	NW 107th Avenue from NW 25th Street to NW 41st Street	• Insufficient capacity	• Increase number of lanes on NW 107th Avenue (47)	• Right-of-way would need to be acquired	• Coordinate with Public Works in order to obtain necessary right-of-way from future developments.
9.	NW 107th Avenue @ NW 41st Street	• Crossing of two major arterials	• Provide grade separation (48)	• Right-of-way	• Detailed geometry analysis needs to be performed
10.	NW 107th Avenue north of NW 41st Street	• Lack of continuity	• Provide connectivity to NW 103rd Street (49) • Use design criteria for Superarterial on new segments (50)	• Right of way would need to be acquired to add new segments	• Coordinate with Public Works in order to obtain necessary right-of-way from future developments. • Detailed study needs to be conducted to measure impacts to surrounding roadways

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations.

SW 40th Street (Bird Road)

Existing Geometry

SW 40th Street (Bird Road) runs east-west and extends from SW 157th Avenue to SW 27th Avenue. SW 40th Street is a two-lane facility from SW 157th to SW 147th Avenue, a four-lane divided from SW 147th Avenue to SW 117th Avenue, and a six-lane divided with left turn pockets east of SW 117th Avenue. Land use patterns on Bird Road west of SW 147th Avenue are residential, from SW 147th Avenue to SW 117th Avenue are mixed residential and commercial, and east of SW 117th Avenue are mainly commercial.

Observed Conditions

Major improvements were just completed on Bird Road, increasing overall capacity on this facility. Traffic flows smoothly, except at the intersection of SW 117th Avenue and Bird Road, and east of SW 102nd Avenue. The heavy traffic volumes east of SW 102nd Avenue are due to commuters accessing SR 826. This congestion can be alleviated by providing alternate north-south routes to SR 826 between SW 107th Avenue and SR 826. Existing north-south routes include SW 117th Avenue, SW 107th Avenue and SW 87th Avenue. SW/NW 97th Avenue will be extended in the future over SR 836 and will provide an alternate route to SR 826, potentially diverting some traffic from Bird Road. To provide an alternate route to SR 826, SW 97th Avenue should be extended to NW 41st Street, at a minimum. Other arterials, such as SW 102nd Avenue, would not appear suitable for widening since they transverse residential areas and do not provide continuity north of SR 836. Other factors adding to the congestion on Bird Road include numerous driveways and school zones. The implementation of pedestrian friendly treatments would help reduce congestion in this corridor.

Recommended Improvements

Table 4 shows a summary of the transportation deficiencies observed in the field and the recommended corrective actions.

Table 4
SW 40th Street (Bird Road) (From SW 87th Avenue to SW 157th Avenue)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problem	Recommended Actions
1.	SW 40th from SW 87th Avenue to SW 102nd Avenue	• Delays due to crossing of SW 87th Avenue and SW 40th Street	• Provide alternate route to SR 826 (51) • Provide continuity on crossing arterials every 1/2 mile (52) • Provide adequate capacity on crossing arterials to offer alternate routes to SR 826 (34)	• Community opposition	• Studies are needed to evaluate which arterials can be extended north of Bird Road
2.	SW 40th Street @ SW 107th Avenue	• Delay due to crossing of two major arterials with heavy flow during the peak periods	• Provide grade separation (30)	• Right of way • Opposition from business owners	• Detailed geometry analysis needs to be performed
3.	SW 40th from SW 117th Avenue to SW 147th Avenue	• Insufficient capacity	• Widen Bird Road from SW 147th Avenue to SW 117th Avenue (54)	• Right-of-way and environmental problems	• Same as corrective strategy/technique

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

SW 8th Street (Tamiami Trail)

Existing Geometry

SW 8th Street (Tamiami Trail) extends east-west throughout Dade County. Within Transportation Area 4, SW 8th Street is a four-lane divided facility from SW 177th Avenue (Krome Avenue) to SW 127th Avenue, and a six-lane divided facility from SW 127th Avenue to SW 107th Avenue. Land use along this facility is primarily commercial, and includes numerous shopping centers with multiple access points to the arterial. The Tamiami Canal in located on the north side of SW 8th Street, running along this major arterial for most of its length.

Observed Conditions

The section on SW 8th Street between Krome Avenue and SW 137th Avenue is expected to be one of the busiest corridors ten years from now. Sufficient ROW should be acquired now to accommodate future transportation needs, whether those needs will be an overpass, a continuous flow intersection, or a standard intersection with multiple turn and through lanes in all directions. The lack of right-of-way at many of the intersections from SW 137th Avenue to SW 107th Avenue prevents the implementation of many of the superarterial treatments which are needed.

High levels of congestion were observed on this arterial from SW 142nd Avenue to the ramps to and from the Turnpike during peak periods. During the AM peak period, queues of eastbound commuters start building on SW 8th Street from SW 142nd Avenue and continue for approximately 2 miles up to the Turnpike ramps. The main factor contributing to the congestion level is the heavy volume of commuters accessing the Turnpike ramps. These ramps are tolled and cause traffic to back-up onto SW 8th Street. Provision for electronic toll collection, which is planned for the near future, will help alleviate congestion on SW 8th Street as vehicles are processed faster at the toll plaza. Another factor contributing to the congestion in this area is the inadequate capacity of the cross streets causing high levels of frustration and unsafe driving maneuvers. At the intersection of SW 107th Avenue and SW 8th Street, delays are mainly caused to the crossing of two major arterials with heavy volume of cars during the peak periods. Travel patterns are reversed for this corridor for the PM peak period, however the same factors contribute to the congestion observed during the afternoon peak period.

Future proposed improvements that will have direct impact on this facility include the extension of SR 836 to SW 137th Avenue, widening of SW 137th Avenue to six lanes and construction of NW 12th Street. The SR 836 extension will greatly increase traffic volumes along SW 137th Avenue north of SW 8th Street. Necessary provisions should be taken now to provide adequate capacity (i.e., grade separation) for the future at the intersection on SW 137th Avenue and SW 8th Street. The County is also planning the widening of SW 8th Street west of SW 127th Avenue from a four-lane to a six-lane facility.

The unique geometry of SW 8th Street, due to the canal along the north side of the arterial and the travel patterns along this arterial, lends itself to the application of continuous green lanes or turbo lanes. Turbo lanes are signalized T-intersections where one or more through lanes are not

stopped when the side-street left turn signal phase is active. The implementation of turbo lanes is generally regarded as undesirable due to safety concerns. However, when certain conditions are present, the appropriate design criteria can be implemented in order to minimize safety problems and provide significant operational benefits. Several factors will determine the operational benefits of turbo lanes, such as heavy arterial volumes, heavy side-street volumes, and the volume of left turns from the side street. This is an important consideration, since a condition of moderate to heavy left turn volumes from the side-streets and heavy arterial volumes is usually not conducive to the successful implementation of turbo lanes. Conditions on SW 8th Street are favorable to the application of turbo lanes on several sections of this facility, due to travel flow characteristics and commuter travel patterns along this corridor. Detailed analyses need to be performed to assess the operational benefits of turbo lane implementations.

Recommended Improvements

Table 5 shows a summary of the transportation deficiencies observed in the field and the recommended corrective actions.

Table 5
SW 8th Street (From SW 107th Avenue to SW 177th Avenue)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problems	Recommended Actions
1.	SW 8th Street @ SW 107th Avenue	• Delays due to crossing of two major arterials with heavy flow during peak periods	• Widen SW 107th Avenue north of SW 8th Street (35) • Widen bridge over Tamiami Canal (36)	• Right-of-way • Community opposition	
2.	SW 8th Street from Turnpike to SW 137th Avenue	• Access to shopping centers	• Consolidate access to shopping centers (55)	• Community and business opposition	• Detailed study is recommended to measure the impacts of access management. • Coordinate with business owners and show potential benefit to traffic circulation and safety
		• Insufficient storage for access to Florida Turnpike	• Reduce queue by increasing number of tollbooth and/or provide AVI at tollbooths (56)		• Coordinate with the Turnpike on AVI implementation
		• Inadequate capacity for westbound vehicles making a left turn at SW 122nd Avenue during the PM peak period	• Increase length of westbound to southbound left turn storage bay (57)		• Same as corrective action

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

Table 5 (Continued)
SW 8th Street (From SW 107th Avenue to SW 177th Avenue)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problems	Recommended Actions
3.	SW 8th Street @ SW 127th Avenue	• Conflicts due to absence of drop warning signs	• Provide sign on SW 8th Street westbound indicating right lane drop at the intersection (58)		• Same as Corrective strategy/technique
4.	SW 8th Street @ SW 132nd Avenue	• Delays on cross streets due to heavy volume on SW 8th Street	• Provide enforcement to prevent traffic from blocking intersections along SW 8th Street (59)		
		• Inadequate capacity for traffic wanting to access two major schools on SW 6th Street between SW 129th and SW 127th Avenue during the AM peak period	• Widen bridge at SW 132nd Avenue north of SW 8th Street (60) • Connect SW 6th Street to SW 137th Avenue to provide additional access to schools and residences (13)	• Implementation Cost • Opposition from residential community	• Detailed studies are recommended to measure environmental and other impacts
		• Inadequate capacity for northbound to eastbound right turn lane during the AM peak period	• Relocate bus stop from near SW 8th Street to mid-block on SW 132nd Avenue (61) • Extend E/W LT bays (62)		• Same as corrective action

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

Table 5 (Continued)
SW 8th Street (From SW 107th Avenue to SW 177th Avenue)
Recommended Strategies for Traffic Flow Improvements

	Problem Location	Transportation Deficiency	Corrective Strategy/Technique	Potential Implementation Problems	Recommended Actions
4.	SW 8th Street at SW 137th Avenue	• Delays on cross street due to heavy volumes on SW 8th Street. Heavy northbound to eastbound and westbound to southbound delays during the AM and PM peak periods, respectively	• Widen 8th Street west of SW 127thAvenue (11) • Increase storage of westbound to southbound left turn (12) • Connect SW 6th Street to SW 137th Avenue (13) • Access management • Grade separation (14) (interim improvement: provide overlap phasing for the NB to westbound movement)	• Community opposition • Opposition from business owners	• Same as corrective action
		• High percentage of trucks and school buses. Bridge is not wide enough to accommodate heavy vehicles.	• Widen bridge on SW 137th Avenue (15)	• Environmental problems	• Detailed geometry analysis needs to be performed
		• Delays due to Toll Plaza	• Improve toll collection through the installation on AVI (Automatic Vehicle Location) (63)		

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations

Area Wide Improvements

Table 6 shows some of the recommended improvements to alleviate and or manage congestion throughout Transportation Area 4. These improvements are of a multimodal nature and encourage other modes of travel such as bicycles and walking. Figure 4.2 shows some of the recommended improvements for Transportation Area 4.

Table 6
Strategies for Area Wide Traffic Flow Improvements

Corrective Strategy/Technique	Recommended Actions
• Encourage alternate modes of transportation (carpool and bicycles) • Provide continuous walkways for pedestrian and bicycle use • Pedestrian friendly amenities connecting contiguous shopping areas • Use shopping centers and employment centers for transit stops	• Coordinate with the Bicycle/Pedestrian Coordinator to promote use of these alternate modes within the area
• Provide shuttle between FIU campuses • Provide shelters and bicycle storage facilities at bus stops • Bus bays • Exclusive right-turn lanes • Right turn green arrows during the complimentary left turn movement to increase right turn capacity when U-turn form the left turn can be sacrificed	• Coordinate with MDTA and FIU to investigate the feasibility and development of such programs

Conclusion

Implementation of the Superarterial Network concept will not solve the existing and projected congestion problems in Dade County. The concept however shows that a set of arterials specifically designed to enhance mobility would help alleviate some of the congestion in the area.

Testing of the concept showed that a variety of solutions can be applied to the array of problems on our roadways. These solutions often take the shape of "non-traffic" solutions depending of the problem at-hand. During the testing of the concept, field observation showed that some of the congestion problems had sources other than traffic, such as inadequate drainage along SW 137th Avenue.

Because of the diversity of the area chosen for the preliminary testing, a wide range of application can be seen from implementing the Superarterial Network concept. Solutions for both mature and undeveloped areas were identified in areas ranging from exclusively residential to industrial land uses. The testing also showed that the concept can be applied to alleviate existing congestion problems but also as a means to anticipate future problems. A pro-active approach is highly recommended to reserve the right-of-way necessary for future transportation needs. One example would be the intersection of NW 107th Avenue and NW 41st Street, which will undoubtedly be one of the busiest intersections in Dade County in the next 10 years. Sufficient right-of-way should be acquired now to accommodate future needs and avoid the constraints faced with several of the intersections challenged with congestion problems in the present.

Demand on some roads often needs to be reduced by increasing the capacity, and encouraging the use of parallel facilities. In much of SW Dade continuous arterials exist only on the one-mile section lines, and sometimes on the two-mile section line, as in the case of NW 107th Avenue and NW 87th Avenue between SW 8th Street and NW 36th Street. In northwest areas of Dade County however, through arterials exist on the half-mile section lines as well, alleviating some of the congestion in several of the corridors serving the area.

Preliminary testing of the Superarterial Network concept shows that this concept bridges the gap between the different improvement programs currently in place at the state and county level. By looking at arterials within a specific area, the Superarterial Network broadens the scope of the Resourceful Use of Streets and Highways (RUSH) program and the Project Development and Environmental Study (PD&E) which look at specific spots and single arterials respectively. The concept also compliments these programs while being more focused than the Long Range Transportation Plan (LRTP). Figure 5.1 shows the Superarterial Network, Transportation Areas, and a summary of the improvements for the selected arterials.