transportation analysis – appendix C

I. INTRODUCTION

The Dr. Martin Luther King, Jr. and Veronica S. Shoemaker Boulevards (MLK and VSS) Revitalization Plan provides a comprehensive plan for the revitalization of the Dunbar community, the MLK, VSS corridors, and other streets. With careful planning, engineering and implementation, safe and healthy streets can be built to handle the movement of people and goods while contributing to the creation of a viable and highly desirable community. During the December 2005 design charrette, Hall Planning & Engineering (HPE) worked as part of the Dover Kohl & Partners team in the Master Plan process to assist with the transformation of the character of this important community and its transportation corridors.

The purpose of the charrette was to propose design solutions that could create a livable urban character for the Dunbar community along revitalized Dr. Martin Luther King, Jr. Boulevard and Veronica S. Shoemaker Boulevard corridors, while simultaneously preserving the function of MLK and VSS corridors as major traffic corridors.

The charrette process included interviews with stakeholders, including the citizens of the Dunbar community, City of Fort Myers Public Works, Police Department, City staff, LeeTran and the Florida Department of Transportation (FDOT) to identify transportation issues and future plans for the area. HPE studied the area's transportation systems, existing streets, traffic speeds along MLK, traffic patterns on MLK, Ford Street, Edison Avenue, Hanson Street, VSS and surrounding streets, as well as the street design for the section of VSS currently under construction. This appendix includes findings and specific recommendations for improvements to pedestrian and roadway features.

II. CORRIDOR ISSUES

A. IDENTIFY A SPECIFIC VISION FOR URBAN DESIGN PATTERNS

The urban design vision for Dr. Martin Luther King, Jr. Boulevard and Veronica S. Shoemaker Boulevard, as refined by the design team during the charrette, is for specific locations along the MLK and VSS to become more urban in character, with walkable mixed use development, on-street parking, short block faces, buildings oriented to the street, and maintenance of a network of street north and south of the MLK and east and west of VSS corridors to provide local circulation.

From a transportation planning context, HPE recognizes a fundamental tension in the design of the MLK and VSS corridors, between the need to move large volumes of traffic and the desire to create a walkable thoroughfare to support the revitalizing Dunbar community. The challenge of the charrette was to create some balance in this tension.

Much of America's suburban land development pattern results from street and highway networks dictating urban structure. Highways designated as arterials change little as they approach developed areas. Generally speeds drop from 55 to 45 and 35 miles per hour, but on-street parking is usually not allowed in emerging areas, and is often removed from older areas.

Most existing development in the study area, and Fort Myers in general, consists of conventional strip-center, automobile-oriented land uses with large parking lots between the street and the front doors of buildings. Outside of the central part of downtown Fort Myers, all of the major arterial streets have those kinds of development patterns and land uses. The study area contains numerous vacant properties with potential for revitalization. Unless a new vision and new land use patterns are put in place for the Dunbar community, auto-dominated land uses will continue and walkability will take a back seat to the motor vehicle. The land uses adjacent to these transportation corridors must include wider sidewalks to facilitate pedestrian traffic, parking on-street to support local business, and mixed use development, with retail, office and residential units located in buildings at the back of sidewalk. Higher density is also needed to support the growth of transit along the corridor.

MLK has been constructed as a suburban and rural road, when in fact it is located in an urban area as it passes through the Dunbar area, approaching downtown Fort Myers. This mismatch between street design and context is important and applies to both MLK and VSS. Suburban and rural road design encourages automobile use by discouraging other forms of transportation. This design is more appropriate for a suburban or rural area where local traffic is a smaller part of the traffic mix and through traffic comprises the major use of the street. In an urban area, however, local travel comprises a much greater percentage of trip making. If made by automobile, these additional trips contribute to congestion.

Transportation planning has begun to recognize that in urban areas, additional street widening beyond the leap from two lanes to four provides diminishing returns in terms of transportation system efficiency. In urban or urbanizing areas, the most productive way to maintain transportation system efficiency is by shifting trips to other modes whenever possible. Local trips of short length and great frequency can often be made by other modes such as walking, bicycling, or transit, if these

modes are supported as part of the transportation system. A suburban and rural road design does not support these modes. MLK does provide minimal alternative mode support through bicycle lanes and sidewalks. However, due to long blocks and high speeds, the street is not optimal for walkability. Consequently, there is every reason to expect most local trip making to occur by automobile, which threatens the long-term viability of this important corridor.

One benefit of an urban street system is that a network of streets provides multiple routes to destinations. In the case of MLK, there are several parallel east-west streets which could provide additional connectivity and allow MLK to operate more efficiently. In order to reach these streets, additional north-south connectors are required to complete an urban transportation network. Veronica S. Shoemaker Boulevard is exactly such a connector, but the physical design of its new segments are not optimal to fulfill this role.

In fact, VSS is even more suburban and rural in design than MLK. Whereas MLK provides bicycle lanes and sidewalks, VSS provides neither of these on portions of the street. Therefore, as VSS eventually suffers from the same congestion problems as other urban streets, there will be few opportunities to shift travel to alternative modes.

One of the goals of the charrette was to increase urbanism and walkability along the MLK and VSS corridors. The suburban street design of these streets is contrary to this goal. In order to achieve sustainable infill development, walkability must be incorporated into the DNA of the urban fabric in the area. Specifically, lower travel speeds along the street must be achieved, as well as providing for pedestrian travel through sidewalks, shade, street enclosure and other elements of walkability.

B. IMPROVING THE THOROUGHFARE NETWORK

Arterial street designs, by definition, tend to exclude intersections with side streets, leading to longer block size (600 to 1,000 feet or more) and speeds of 45 miles per hour or more, both of which cause difficulty for pedestrians. The arterial design concept emerged from a rural heritage and rarely serves urban peak travel demand due to exclusive reliance on the single facility serving a single mode – the motor vehicle. The two corridors in this study area have these traits.

Generally speaking from a design perspective, both the MLK and VSS corridors are currently configured as suburban arterial design, with four 12' lanes of traffic, medians, no on-street parking, and design speeds of 45 and 55 miles per hour, posted speeds of 30, 40 and 50 miles per hour, and operating speeds in the 40 and 55 miles per hour range. Sidewalks and/or multi-use paths are provided on both sides of the street in many locations, but roads have limited signals in their corridors, providing limited crossing opportunities for pedestrians.

Signalized intersections are infrequent along MLK and VSS in order to provide a greater automobile level of service. There are very few continuous streets parallel to MLK and VSS corridors within the study corridor, therefore requiring much of the local traffic to use MLK and VSS corridors for even fairly short trips.

To achieve urban places that encourage pedestrians, bicycles, and transit vehicles as part of the mobility mix, the patterns of proposed development must be specified during the community planning stage. Next, transportation plans for balanced mobility can be crafted with walkability considered first and vehicle mobility second. This is not to imply that motor vehicle mobility will be dramatically reduced, but that pedestrians, being exposed to the open environment, are more vulnerable than when they are drivers, and solutions for their comfort are more complex. Often greater walkability yields only small reductions in vehicle capacity, even though vehicle speeds are lower.

C. IMPROVING SPECIFIC INTERSECTIONS

In the case of MLK and VSS, where substantial suburban-style road construction has recently occurred, there are limited opportunities to provide high levels of walkability along the entire road corridor. However, development can be focused to occur in a walkable fashion at key intersections over time. Dividing a long road corridor into walkable intersections helps create smaller block sizes, which are themselves more walkable, as well as break up the entire corridor into a series of walkable components.

Under this type of design, the overall character of the road itself changes as the road enters and leaves a walkable intersection area. Speeds are slowed through increased enclosure, decreased lane width, the addition of on-street parking, and related speed management techniques. Since both MLK and VSS have been recently reconstructed, modifications to the curb line are not recommended as part of this report, although modifications can be made in the future as intersections are redeveloped. Keeping the curb lines in place means that the most significant modifications will

occur behind the curb line and the sidewalk, on what is now private property. As property adjacent to the intersections is redeveloped, the walkability features can be added.

The key elements that need to be added to the intersections to create walkability include narrower through lanes, increased enclosure through landscaping (trees) and building mass, and the addition of on-street parking. A design of this type is known as an "Avenue Section" and is conceptually illustrated in Figure 1.

D. TREE PLACEMENT

Whenever walkability is a design goal, planning guides including the authoritative "Guide for the Planning, Design, and Operation of Pedestrian Facilities" by AASHTO support the placement of rows of street trees between the sidewalk and the vehicle traffic lane. A conceptual view of this type of design, as it would be applied to VSS, is shown in Figure 2.

In contrast, Section 138-72 of the Fort Myers Growth Management Code specifically indicates that street trees are to be placed behind the sidewalk, outside of the public right-of-way (ROW). A conceptual view of this requirement, as applied to VSS, is shown in Figure 3.

The Fort Myers code is consistent with suburban arterial design but is contrary to walkable design. Unless changed, it will seriously hamper all attempts to create pedestrian-friendly streets in Fort Myers.

By requiring street trees to be located outside the ROW instead of between the vehicle lane and the sidewalk, the Fort Myers code limits the effectiveness of enclosure as a speed management tool, deprives pedestrians of the buffer effect of street trees, and limits the options of designers to place trees in the optimum locations for pedestrian comfort. The negative effects of the Fort Myers code's tree placement on the pedestrian environment and the street enclosure are shown in Figures 4 and 5.

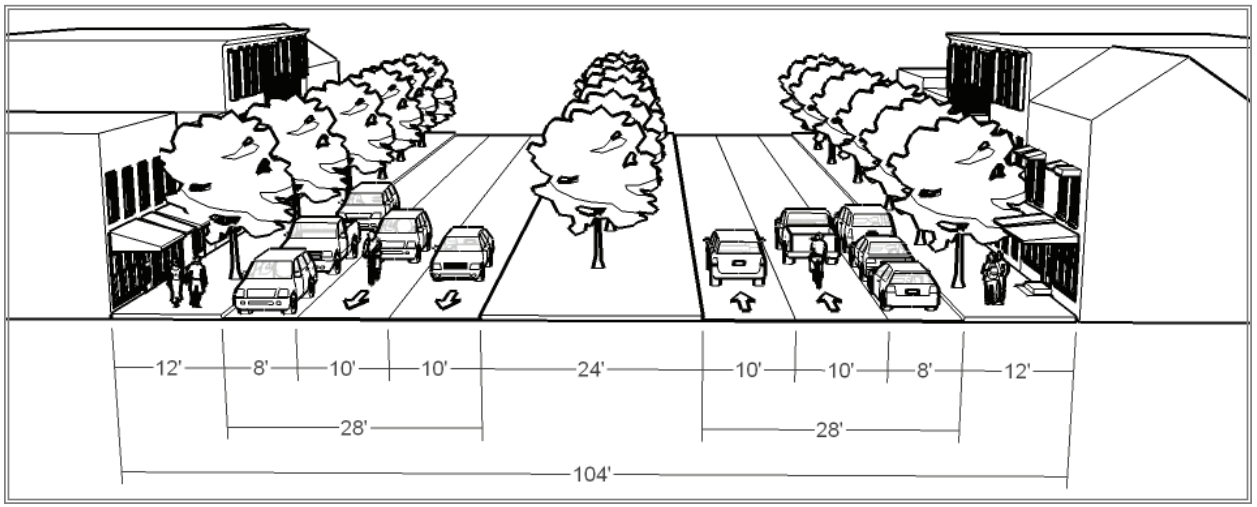

Figure 1: Avenue Section

The city should reconsider this section of the code and allow street trees to be placed as required for good walkable development. An optimal design, with trees placed on both sides of the sidewalk for maximum shade and pedestrian comfort, is shown in Figure 6.

E. PROVIDING MOBILITY FOR ALL MODES

Bicycling is a popular and primary mode of transportation for a number of adults, and there are existing bike lanes on both corridors, but the high vehicle operating speeds, high truck traffic, and the apparent lack of confidence of bicycle riders tends to discourage cyclists from using the street for bicycling. Instead, virtually all of the cyclists resort to using the sidewalk (see Figure 7) along the MLK and VSS corridors, and the same behavior should be expected along the new segments of VSS.

Sidewalk riding is usually unsafe and problematic for many reasons, which will not be discussed here. Currently, the majority of users are riding at very slow speeds and with the currently low utilization of MLK and VSS by pedestrians there is not

ACTION STEP # 19
TREE PLACEMENT

Rows of street trees should be placed between the sidewalk and traffic lanes in order to make sidewalks attractive to pedestrians.

- The city's Growth Management Code should be amended to eliminate the insistence in Section 138-72 that rows of street trees be placed only between sidewalks and buildings.

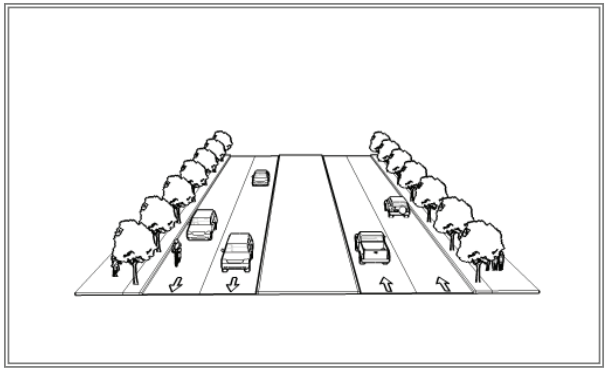

Figure 2: AASHTO recommended placement of trees between sidewalk and travel lanes.

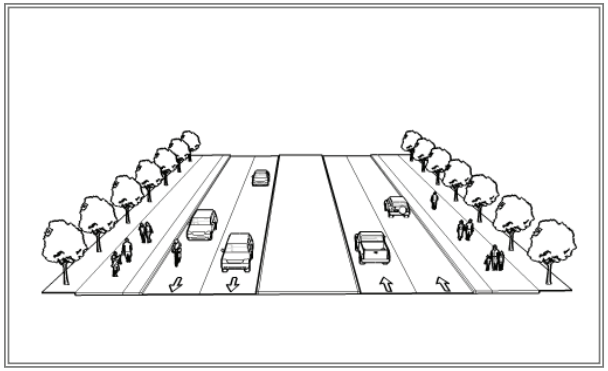

Figure 3: Fort Myers required placement of trees outside of ROW.

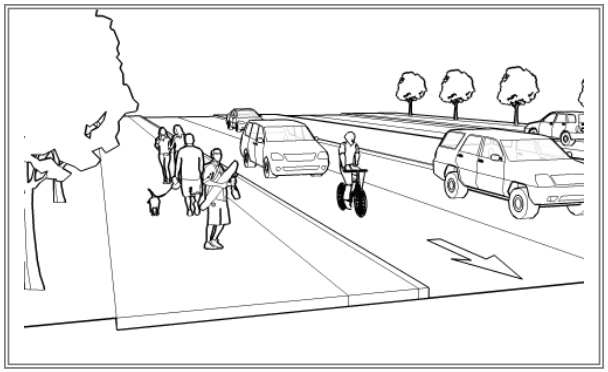

Figure 4: Trees outside ROW leave pedestrians exposed.

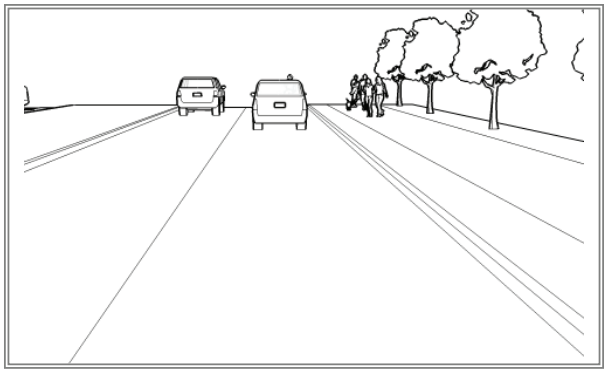

Figure 5: Trees outside ROW offer no enclosure and encourage faster travel speeds adjacent to unprotected pedestrians.

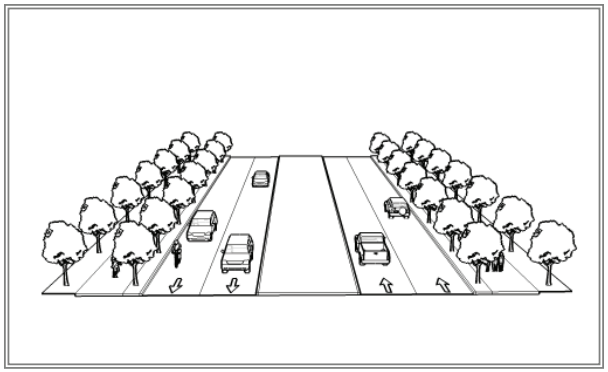

Figure 6: Recommended design – trees adjacent to travel lanes and outside of ROW/Back of sidewalk

Figure 7

an imminent problem with bicycle and pedestrian conflicts. This could become more problematic as revitalization becomes a reality, and more pedestrians are using the sidewalks along these corridors.

III. THE TRANSPORTATION CHALLENGE – DR. MARTIN LUTHER KING, JR. BOULEVARD

A. EXISTING CONDITIONS & ISSUES

Dr. Martin Luther King Jr. Boulevard runs east and west connecting downtown Fort Myers through the Dunbar community to Ortiz and I-75 (see Figure 8). MLK was recently widened to a median-divided four-lane suburban highway by the Florida Department of Transportation (FDOT). During the widening, access management was implemented, controlling crossing and turning movements through the corridor. Extensive landscaping was installed along with decorative lighting, bike lanes, and sidewalks, greatly improving its appearance.

The right-of-way purchased for the widening eliminated many businesses along MLK, reducing pedestrian activity along the corridor. With a strong tradition of neighborhood-oriented businesses and many vacant lots, there is considerable opportunity for revitalization.

1. Dr. Martin Luther King, Jr. Boulevard And The Strategic Intermodal System

MLK is part of FDOT's "Strategic Intermodal System" (SIS) because of LeeTran's new transfer center in downtown Fort Myers, which is considered a SIS Hub (see the SIS Goals in Figure 9): Hubs are ports and terminals that move goods or people between Florida regions or between Florida and other markets in the United States and the rest of the world. These include commercial service airports, deepwater seaports, spaceports, interregional rail and bus terminals and freight rail terminals.

Interstate 75 is also an SIS Corridor: Corridors are highways, rail lines and waterways that connect major markets within Florida or between Florida and other states or nations.

Since MLK connects I-75 and the LeeTran transfer center, it is considered to be a SIS Connector: Connectors are highways, rail lines and waterways that connect hubs and corridors.

FDOT's state investment policy will allocate 75 percent of state discretionary transportation capacity funding to the SIS by 2015, up from approximately 62 percent today. Therefore, funding of projects for MLK would have a higher priority for approval than the rest of the state system. Projects that improve the efficient movement of passengers and goods onto and off of SIS hubs will be eligible for funding, but most internal functions on the hubs will not be funded by FDOT with SIS funds.

SIS Goals

1. **A safer and more secure transportation system for residents, businesses and visitors**
2. **Effective preservation and management of Florida's transportation facilites and services.**
3. **Increased mobility for people and for freight and efficient operations of Flori da's transportation system**
4. **Enhanced economic competitiveness and economic diversification**
5. **Enriched quality of life and responsible environmental stewardship**

Figure 9

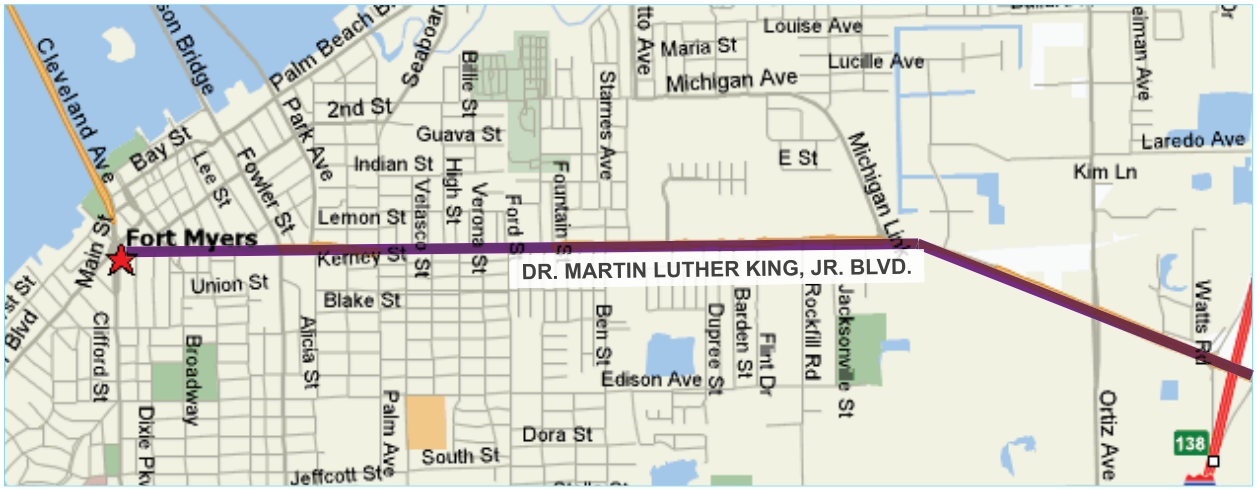

Figure 8

2. Traffic Data

FDOT traffic counts of average daily traffic in 2004 are shown on Figure 10. Based on those counts, the existing four lane MLK provides a level of service of C approaching D. The traffic data also reveals that MLK carries a high percentage of truck traffic; traffic with 10% or more trucks is considered high truck traffic by FDOT. The businesses located in the industrial areas to the south of MLK generate the majority of this truck traffic. The opening of new segments of VSS, plus the future extension of Hanson and Edison, will greatly reduce truck traffic along MLK.

3. Speed

Further challenging to the pedestrians and bicyclists in the MLK corridor is the speed of vehicles moving through the corridor. During the charrette, an evaluation of speeds in the section (posted at 30 miles per hour) between Palm and VSS was performed. The vast majority of motorists were traveling in the 38 and 45 miles per hour range, while several were clocked at speeds over 50 miles per hour, see Figure 11. These speeds combined with the heavy traffic volumes and large signal spacing creates a very challenging environment for the pedestrian. In order to create a safer and more pedestrian friendly environment, the speeds will need to be managed.

Figure 11

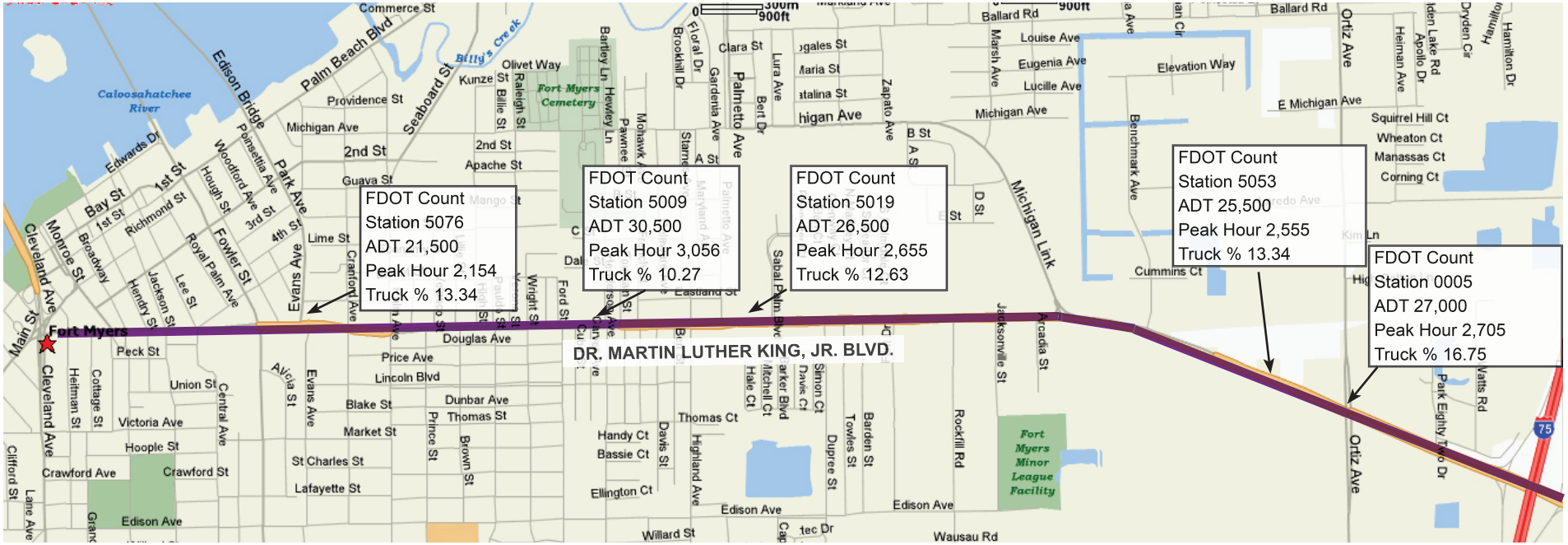

Figure 10

One cause for the speed is the design of the roadway. Since the road is designed for 45 miles per hour, the roadway feels extremely comfortable to drive at this speed and even faster. When driving through the corridor from Evans to Ortiz, the only physical change in the roadway is that the sidewalk is moved right up to the curb where the 30 MPH speed limit is posted. Consequently, there is almost no visual cue to drivers that the roadway is supposed to be different and that drivers should slow down, other than the easy-to-miss sign noting the lower speed limit.

Likewise, the developments of property adjacent to the corridor are few and many are set well back from the roadway. Therefore there is little sense of enclosure, which is necessary to create a different feel for the driver. Those conditions and the small number of pedestrian friendly businesses contribute to a lower level of pedestrian activity.

Figure 12

4. Signals

From a transportation design perspective, the roadway was designed primarily to serve motorized vehicle movements. As mentioned above, the design speeds were 45 and 55 miles per hour and as a result, the geometry and other features are typical of a higher speed roadway, even in the sections that are currently posted at 30 miles per hour. This is not atypical of designs used in major urban areas throughout the state.

The current signal spacing does not adequately provide for pedestrian movements across MLK. Signals are currently located at Evans Avenue, Cranford Avenue, Palm Avenue, Ford Street, VSS, Michigan Link and Ortiz Avenue. The approximate signal spacing is shown in Table 1.

With the exception of the spacing between Evans Avenue, Cranford Avenue, and Palm Avenue, all of the signal spacing is in the range of ½ - 1 mile apart. This spacing is intended to reduce delay to the automobile. However, it also means that pedestrians have very few opportunities for protection when crossing MLK. Since the spacing between signals is so large, most of the pedestrian crossing occurs randomly throughout the corridor as shown in Figure 12.

Table 1: The approximate signal spacing

Section of Dr. Martin Luther King, Jr. Boulevard	Distance Between Signals
Evans Avenue– Cranford Avenue	1,056 feet
Cranford Avenue – Palm Avenue	528 feet
Palm Avenue – Ford Street	2,640 feet
Ford Street – VSS	2,112 feet
VSS – Michigan Link	5,280 feet
Michigan Link – Ortiz Avenue	4,200 feet

5. Trucks

Our interviews with the City revealed that there is a significant demand for expansion in the industrial area, so it is important to the local economy for truck traffic and future growth in truck traffic to be accommodated. Presently a significant percentage of the truck traffic is using Ford Street next to the Quality life Center as shown in Figure 13. When the four laning of Veronica S. Shoemaker Boulevard is complete, the majority of truck traffic will shift to VSS. This will positively impact pedestirans at the intersection of Ford Street and MLK, and between Ford Street and VSS, as the percentage of trucks decreases.

Figure 13

6. Transit

LeeTran, the transit provider for Lee County, recently adopted their new 2030 Transit Element in the Lee County MPO 2030 Transportation Plan. Plans for existing bus lines identified in this new document include increasing the frequency of service in and across the MLK corridor, providing bus stop shelters, and replacement of the existing bus inventory. LeeTran has bike racks on 100% of their fleet and they have received an award for the high percentage (4%) of bicyclists using the transit system.

LeeTran will also be studying the possibility of implementing Bus Rapid Transit (BRT) both north-south and east-west in the study area. The north-south routes to be considered are the Seminole Gulf Railway/US 41 corridors and the east-west routes include MLK/Lee/Colonial Boulevards & Veterans Parkway. The east-west corridor is intended to serve from downtown Fort Myers to Lehigh Acres. They plan to phase in the system with a goal to have a full-scale BRT system operation in place.

The Intermodal Center located at Evans Avenue and MLK provides an opportunity for transit to become a more viable force in the study area, and should be strongly considered in plans for the revitalization of the Dunbar community.

B. FUTURE HIGHWAYS PLANS

The Lee County Metropolitan Planning Organization's MPO's 2030 Long Range Transportation Plan, 2005 Update shows that there is a plan to widen MLK to six lanes within the study area, between Michigan Link and Teter Road, just east of I-75, as shown in Figure 14, below. The FDOT's 2006-2010 Adopted Work Program lists right of way currently being purchased between Michigan Link and Ortiz Avenue for future six laning of MLK. Since the SIS has an important part role in the FDOT's future transportation plans, funding of SIS projects will have a high priority for funding, making them more likely to occur. There are no other plans shown in the FDOT or MPO plan for six laning of MLK west of Michigan Link.

C. SUMMARY OF ISSUES

There are three major transportation challenges for MLK:

1. The high speed suburban highway design encourages only one travel mode.
2. Limited protected crossings for pedestrians
3. The built environment adjacent to the corridor does not support higher levels of pedestrian activity.

D. RECOMMENDATIONS

The urban design vision for Dr. Martin Luther King, Jr. Boulevard corridor, as refined by the design team during the charrette, is for specific locations along the MLK to become more urban in character, with walkable mixed use development, on-street parking, short block faces, buildings oriented to the street, and a grid or network of thoroughfares north and south of the MLK corridor to provide better local circulation. Those locations are:

- MLK/Cranford
- MLK/VSS
- MLK/Dupree-Rockfill
- MLK/Ortiz
- VSS/Edison
- VSS/Hanson
- VSS/Winkler

At some point after the city has selected the desired urban character for MLK and adjusted its regula-

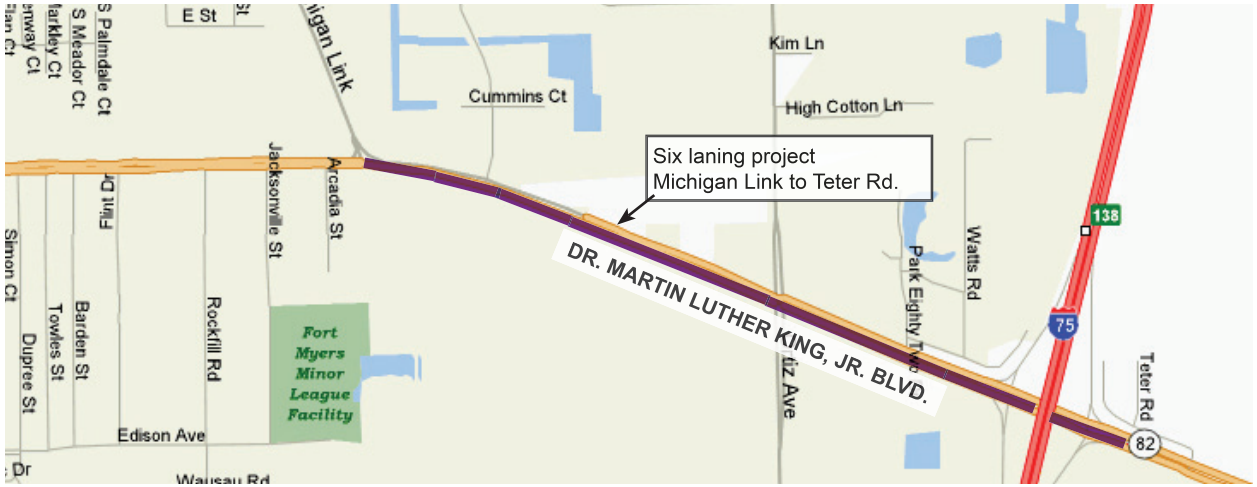

Figure 14

tions accordingly, MLK can be modified to manage speeding by making minor changes in its layout. This change can be implemented with fairly minor changes to the physical configuration of the roadway by adding on-street parking at key locations as described on this page.

On-street parking conflicts with two goals of the recent widening project. One is the FDOT goal of having MLK function as a high volume SIS arterial. The other is the local Bicyclist & Pedestrian Coordinating Committee, who has created a plan with designated bike lanes on all state roads.

The reason for this conflict is the constrained right of way in the corridor. The new cross section consists of four 12' lanes with 5' designated bike lanes and 6' sidewalks at the back of curb. Generally, the right of way for the road is at the back of sidewalk. Since the construction project was completed recently, obtaining additional right of way is unlikely.

The only viable way to get on-street parking in the proposed urban places in the corridor is to eliminate the designated bike lanes in combination with reducing the lane widths. Ideally, traffic lane widths would be reduced from 12' to 10', but with current high levels of truck traffic, 11' lane widths are recommended. This narrowing could provide 2' additional, that in combination with the 5' bike lane could provide a 8' wide parking stall (measured to the face of curb, including the gutter pan). The proposed cross-section is shown below in Figure 15. Table 2 presents rough cost estimates to replace bike lanes with on-street parking and pave 6' of additional sidewalk (which would have to be placed on private property).

These changes in combination with wider sidewalks and the other characteristics of properly designed urban form will create higher levels of activity and manage the speeds to the intended 30 miles per hour posted speed limit. This will make the corridor safer for pedestrians traveling along and across MLK and make it safer for bicyclists to travel in the roadway. With the lower traveling speeds, experienced bicyclists will will be able to more safely share the travel lanes with motor vehicles.

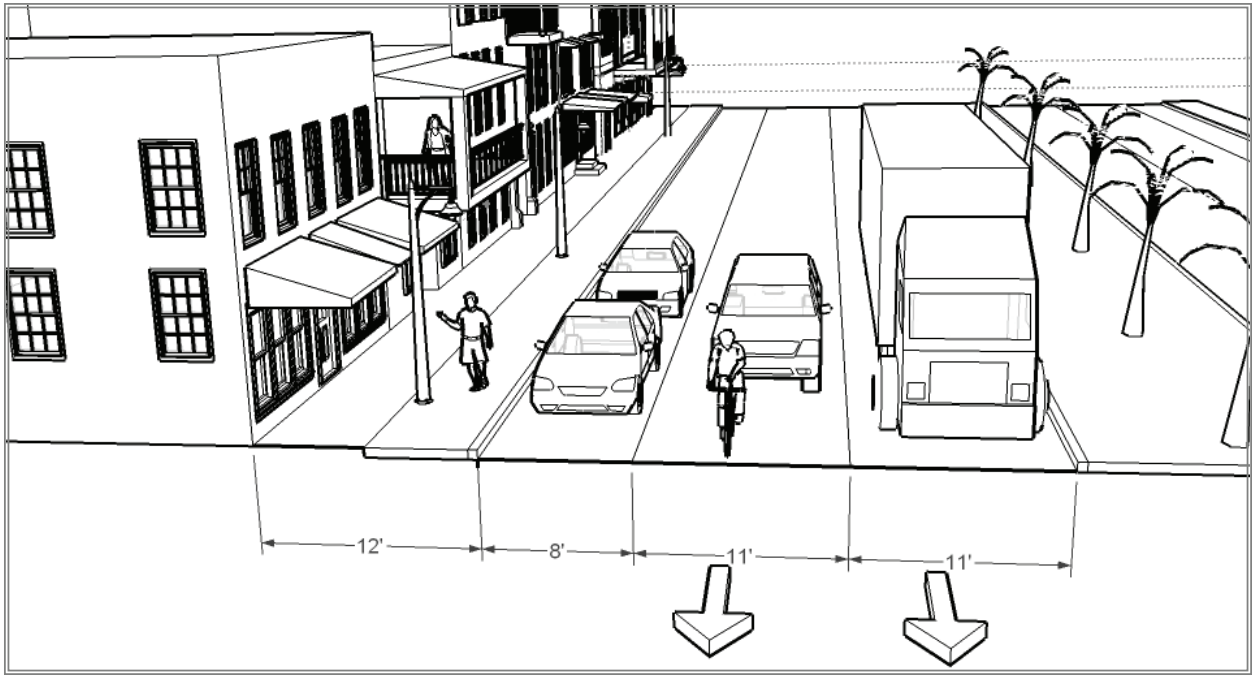

Figure 15: Proposed adjustment to MLK cross section at key pedestrian locations

Table 2: Rough Cost Estimates to Replace Bike Lanes With On-Street Parking and Pave 6' Additional Sidewalk				
Item	Quantity	Unit	Unit Cost	Estimated Cost
Remove Striping Cranford Ave. to Palm Ave. south side	600	LF	$1.53	$918
Remove Striping Ford St. to Clemente Park, north side	700	LF	$1.53	$1,071
Remove Striping Highland Ave. to VSS, both sides	800	LF	$1.53	$1,224
Remove Striping VSS to Sable Palm Blvd., south side	400	LF	$1.53	$612
Stripe Parking Bays, Cranford Ave to Palm Ave south side	600	LF	$0.35	$210
Stripe Parking Bays, Ford Street to Clemente Park, north side	700	LF	$0.35	$245
Stripe Parking Bays, Highland Ave. to VSS, both sides	800	LF	$0.35	$280
Stripe Parking Bays, VSS to Sable Palm Blvd., south side	400	LF	$0.35	$140
Widen Sidewalk 6’ Cranford Ave. to Palm Ave., south side on private ROW	600	LF	$42.00	$25,200
Widen Sidewalk 6’ Ford St. to Clemente Park, north side on private ROW	700	LF	$42.00	$29,400
Widen Sidewalk 6’ Highland Ave. to VSS, both sides on private ROW	800	LF	$42.00	$33,600
Widen Sidewalk 6’ VSS to Sable Palm Blvd., south side on private ROW	400	LF	$42.00	$16,800

IV. THE TRANSPORTATION CHALLENGE – VERONICA S. SHOEMAKER BOULEVARD

A. EXISTING CONDITIONS & ISSUES

Veronica S. Shoemaker Boulevard (VSS) is becoming as a major north-south transportation corridor, beginning on the south end at Colonial Boulevard, continuing through the Dunbar community and connecting at the north end to Palm Beach Boulevard (Figure 16).

Veronica S. Shoemaker Boulevard was created by renaming Palmetto Avenue and connecting the existing sections of former Palmetto Avenue with the new roadway. The missing sections are nearing completion in June 2006. VSS will be a four lane divided suburban highway from Colonial Boulevard to just south of Dr. Martin Luther King, Jr. Boulevard.

The section of Veronica S. Shoemaker Boulevard between Colonial Boulevard and Edison Avenue has suburban character with four twelve-foot travel lanes, five-foot designated bike lanes, a raised median, and curb-and-gutter drainage. The design speed of this area is 45-55 miles per hour. There is a multi-use trail on the east side and a sidewalk on the west side of the road. The road becomes a one-way pair of travel lanes for the last few hundred feet prior to the intersection with MLK, and connecting to the one-way pair of travel lanes north of MLK. Typical sections for this street are shown as photographs in Figures 17 and 19.

The section between MLK and Michigan will consist of one-way pairs with the northbound alignment located just west of the Pepsi property and the southbound section along the existing two lane section of VSS. The one-way pairs are more urban in character, so speeds will be reduced between MLK and Michigan.

The remaining section of Veronica S. Shoemaker Boulevard is located between Michigan Avenue and Palm Beach Boulevard. Between Michigan Avenue and Brookhill Drive, just south of Billy's Creek, VSS is a two lane road with no sidewalks and a large open ditch on the west side of VSS behind a guardrail and the line of trees shown in the Figures 19 and 20.

North of Billy's Creek, the roadway is two lanes (Figure 21), with a sidewalk on the west side of the road adjacent to Terry Park. Many of the citi-

Figure 17

Figure 18

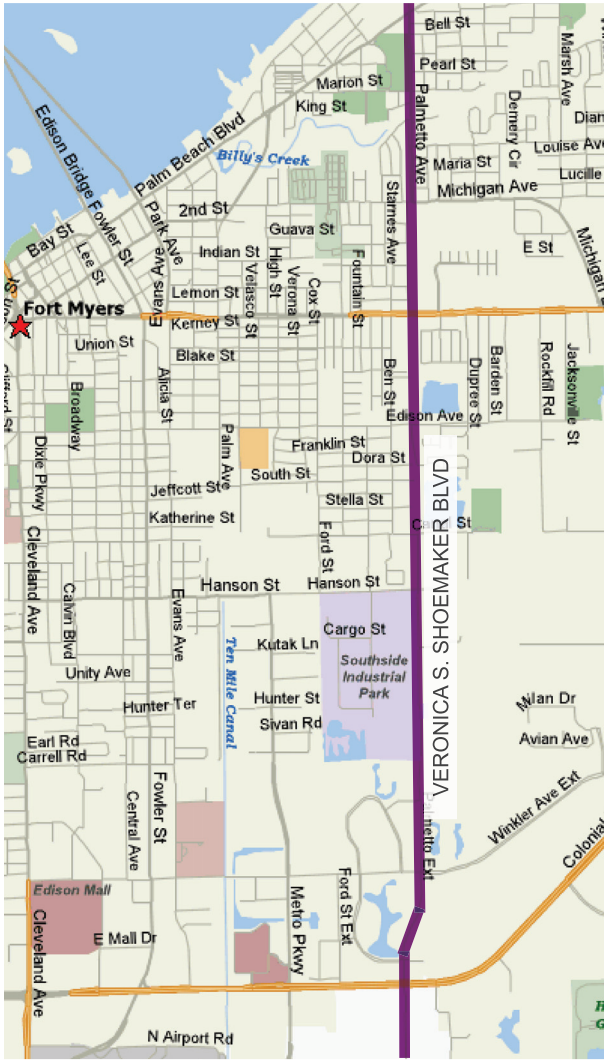

Figure 16

zens and business owners who use or live along the two-lane section of Veronica Shoemaker are very concerned about the traffic impacts of the four-lane section of Veronica Shoemaker ending at Michigan, fearing that the increased traffic using the four-lane section is going to create severe congestion as the roadway transitions to two lanes.

1. Traffic Data

Since the construction of Veronica S. Shoemaker Boulevard is not complete, the current traffic counts south of MLK have no relevance to the recommendations in this plan. There is a permanent traffic count station north of MLK, and the counts for 2004 are 9,100 ADT. The count station is on the two lane section between Marion Street and Palm Beach Boulevard. It will be important to monitor the effects of traffic growth on this section once the four laning of VSS to Michigan is complete. The results of that growth may place the four laning of VSS north of Michigan higher on the MPO's Transportation Plan.

2. Speed

A speed study was not performed on the southern or northern portions of Veronica S. Shoemaker Boulevard. Most of the southern section is still under construction so there is limited traffic at present. Since the corridor is designed similarly to MLK's suburban highway section, speeds should be expected to be in the 50+ miles per hour range in the 45 MPH section. As the roadway approaches MLK, speeds should be expected to drop closer to 40+ miles per hour, similar to that on MLK. North of Michigan, drivers are generally driving close to the speed limit due to the narrower two lane roadway. The speeds should remain about the same on the section north of Michigan until the four laning is completed all the way to Palm Beach Boulevard.

3. Signals & Stop Signs

From a transportation design perspective, the roadway was designed primarily to serve motorized vehicle movements. As mentioned previously, the design speeds are 45-55 miles per hour and as a result, the geometry and other features are typical of a higher speed roadway, even in the sections that will be posted at 30 miles per hour. This is not atypical of designs used in major urban areas throughout the state. The primary consideration is to move motorized vehicles at high volumes, higher speeds, and with little disruption to traffic movements. In the same fashion as MLK, signal spacing along VSS is provided with the motor vehicle in mind. The current signal spacing does not adequately provide for pedestrian movements across VSS. Signals will be located at Winkler Avenue, Edison Avenue, MLK, Michigan Avenue and Palm Beach Boulevard. There are stop signs located at the intersections of Veronica S. Shoemaker Boulevard with Colonial Boulevard, Hanson Street, Canal Street and Marion Street. The approximate spacing between traffic control features is shown in Table 3.

The spacing of intersections with some form of traffic control to allow pedestrians to cross is greater than a quarter mile, and most are a half mile or more. These spacings are intended to reduce delay to the automobile, but the unintended side effect is that pedestrians have very few opportunities where traffic must stop to allow pedestrians to cross VSS. Signals do provide more opportunity for pedestrians to cross, because automobiles will not necessary yield to pedestrians at stop signs. In the same

Figure 19


Figure 20


Figure 21

way MLK performs, most of the pedestrian crossings will occur randomly throughout the corridor.

4. Trucks

As discussed previously, there will continue to be high truck volumes in the region, especially on Veronica S. Shoemaker Boulevard between Edison Avenue and MLK. When VSS is complete, a significant percentage of the truck currently using Ford Street will shift to VSS, due to the general direction of flow (to the east), the higher possible travel speeds, and ease of turning movements for tractor trailers. This will make VSS less desirable to pedestrians due to the noise and smoke created by heavy trucks.

5. Transit

Currently, transit service runs north to Palm Beach Boulevard on VSS but plans are not in place to operate south of MLK.

B. CURRENT CONSTRUCTION PROJECT

HPE reviewed the construction plans for extending VSS from Michigan Avenue to Colonial Boulevard. As a result of that review the following issues were identified that should be considered in light of the goals of the charrette.

VSS is designed for 45 miles per hour for most of the section between Colonial Boulevard and MLK. The speed limit is reduced to 35 miles per hour approaching MLK, but there is no change in street design that would send a signal to drivers to reduce speed. Changes in street design could include narrowing the lanes, increasing enclosure through buildings or plantings, adding on-street parking, and providing shorter block lengths by increasing the number of intersections. The critical feature of any solution is that there must be a visible indication to the driver that the street section has changed and requires lower driving speeds. Narrower lanes and increased enclosure are two of the more effective ways to achieve this indication. Lines of street trees, for instance, can help reduce driver speeds.

To achieve walkability and increased urbanization of the area, the design speeds must be lowered. This can be done in several ways, including narrower lanes, shorter blocks, greater enclosure, and on-street parking. There is no need to apply these design features along the entire length of either street – in fact, doing so could be counterproductive. On-street parking, for instance, should only be used in places where people are likely to park on the street. Otherwise, the empty parking spaces create a wide open pavement width which can encourage speeding.

On the section from Colonial Boulevard north to MLK, the design has a 5' sidewalk on the east side, and an 8' multiuse path on the west side. There are no bike lanes. The lack of bicycle lanes is critical. Although the area around the VSS extension is very suburban today, it will be urban in the future. Bicycle lanes provide for fast bicycle transportation today, and in the future can be turned into on-street parking as urban development type buildings are built at the back of sidewalk along the street.

An urban transportation system manages congestion by distributing traffic over a grid or network of smaller streets, rather than concentrating trips onto a few very wide arterial streets. MLK is constrained to 4 lanes, having just been rebuilt, and VSS is also designed to be four lanes. Four lanes is a very reasonable size for an urban street, in terms of walkability, if the street is designed to discourage high speeds (>35 miles per hour) and encourage walking and bicycling.

In order to maximize the efficiency of these streets, the street network must be highly interconnected. This is contrary to conventional suburban and rural street design, which strives for limiting any connections to the arterial road system. In an urban area

Table 3: The approximate spacing between traffic control features

Section of Veronica S. Shoemaker Boulevard	Traffic control feature	Distance btwn intersections
Colonial Boulevard - Winkler Avenue	Stop sign	2,540 ft.
Winkler Avenue - Hanson Street	Signal	6,650 ft.
Hanson Street - Canal Street	Stop sign	1,380 ft.
Canal Street - Edison Avenue	Stop sign	2,570 ft.
Edison Avenue - Dr. Martin Luther King, Jr. Blvd.	Signal	2.620 ft.
Dr. Martin Luther King, Jr. Blvd. - Michigan Link	Signal	2,660 ft.
Michigan Link - Marion Street	Stop sign	2,695 ft.
Marion Street - Palm Beach Boulevard	Signal	1,820 ft.

with many types of trips occurring, the best model is one that accommodates a choice of routes and modes, which is a highly interconnected network. Under this model, links or streets that become congested can be bypassed by taking another route. This approach requires sufficient additional links and connections in the network. Because cyclists and pedestrians are much more sensitive to trip length than automobile drivers, this approach also accommodates pedestrian and bicycle trips better, because it allows the construction of shorter routes from shorter segments. Suburban street design creates long block sizes and long uninterrupted segments of roadway, and therefore longer routes, which are undesirable for walking and bicycling transportation.

C. FUTURE HIGHWAY PLANS

The Lee County Metropolitan Planning Organization (MPO) 2030 Transportation Plan has two widening projects identified for Veronica S. Shoemaker Boulevard. The section from Michigan Avenue to Marion Street is one project and the section from Marion Street to Palm Beach Boulevard the other. The MPO's Transportation Plan improvement for both of these projects is widening the road from two to four lanes. There is no time shown in their plan for when this would occur. Based on the current design for Veronica S. Shoemaker Boulevard, it is safe to assume that the City would continue with designing primarily for vehicle movement through the corridor. Further investigation into these plans should be performed because this revitalization plan may be able to influence the design of the future widening, creating an environment that is more sensitive to the pedestrian's needs. In particular, the Avenue treatment described in Section II.C should be implemented as part of any new construction or reconstruction.

D. SUMMARY OF ISSUES

To sum up the major transportation challenges:

1. High speed suburban and rural highway design encourages only one travel mode, the automobile
2. Limited crossing opportunities for pedestrians
3. Sidewalks missing in sections north of MLK
4. Facilities not supportive to bicycling
5. The built environment adjacent to the corridor does not support higher levels of pedestrian activity

E. RECOMMENDATIONS

The urban design vision for the Veronica S. Shoemaker Boulevard corridor, as refined by the design team during the charrette, is for specific locations along the VSS to become more urban in character, with walkable mixed use development, on-street parking, short block faces, buildings oriented to the street, and a grid or network of thoroughfares along the VSS corridor to provide better local circulation. Those locations are:

- VSS/MLK
- VSS/Edison
- VSS/Hanson
- VSS/Winkler

At some point after the city has selected the desired urban character for VSS and adjusted its regulations accordingly, traffic speeds will need to be managed to walkable levels by physical changes such as the Avenue treatment described in Section II.C. To expand the opportunity for people to use another travel mode, transit should be expanded along VSS both north and south of MLK.

As development patterns continue, additional locations will be needed to provide for safe pedestrian crossing. A monitoring plan to determine where those locations will be should be developed to ensure that pedestrians are provided for as infill development continues.

A principal rule of urban transportation planning is start with the pedestrian. Plan for the pedestrian first, and the other modes will be able to work. Without sidewalks, for instance, transit does not have a chance of being an attractive mode choice, forcing greater reliance on the automobile. More automobiles mean more congestion, and without sidewalks, there are no options for safe trips other than the automobile. Therefore, the section of VSS north of MLK should include sidewalks. Failure to include sidewalks will ultimately degrade the efficiency of both MLK and VSS, because it will require additional trip making via automobile.

The AASHTO Guide to Design of Bicycle Facilities recommends 10' for the width of a shared use path. The path shown in the design of VSS is 8'.

The AASHTO Guide recommends against the use of a shared use path in lieu of on-street bike lanes. VSS is shown without bike lanes. HPE recommends that bike lanes be included on VSS.

Finally, at the locations designated as walkable mixed use districts, the characteristics of a properly designed urban form must be fully developed, including on-street parking using the Avenue design. This will create higher levels of pedestrian activity and manage the traveling speeds to walkable levels, making the corridor safer for pedestrians traveling along and across VSS, and make it safer for bicyclists traveling along the roadway.

V. THE TRANSPORTATION CHALLENGE – NEIGHBORHOOD STREET SYSTEM

A. EXISTING CONDITIONS & ISSUES

Previous sections have discussed the importance of providing an interconnected grid of streets to encourage bicycle and pedestrian activity, thereby reducing the dependence on automobile traffic. There is a fairly good grid system of streets in the Dunbar community. What is missing is continuity in the grid, due to interruptions by features such as drainage canals and empty lots such as that shown in Figure 22.

Sidewalks are essential in urban neighborhoods to create a safe environment for walking. There are sidewalks on many neighborhood streets in Dunbar and the rest of the study area; however, there are still opportunities to improve the system. There are areas where there is only a sidewalk on one side of the street; where there are no sidewalks; where sections are incomplete (Figure 23); and where maintenance of sidewalks is not being performed (Figure 24).

Many of the streets in the neighborhood are wider than necessary, which contributes to drivers traveling too fast in areas where people of all ages are bicycling, walking, playing, and socializing. As a result, the installation of traffic calming features (Figure 25) becomes more and more common. These features have the positive result of reducing traveling speeds of automobiles, but can have negative side effects such as higher maintenance, poor ride ability, and increased response times for emergency services.

B. RECOMMENDATIONS

Locations for potential connections should be evaluated throughout all neighborhoods, and priorities set for connection based on potential for improving pedestrian/bicycle activity along with the usual factors includes cost and ease of construction. A good example is the drainage ditch that runs adjacent to Clemente Park. There are several locations north of MLK where enclosing the ditch by use of a box culvert would allow several connections to be made in the street system, facilitating east-west movement by all modes of travel and improving access to the elementary school and to the park.

The city should improve connectivity of the sidewalk system by ensuring that all streets have sidewalks on both sides, completing missing sections of sidewalks, and maintaining sidewalks to ensure that they are passable for pedestrian use. A brief analysis of all neighborhoods could identify locations, establish priorities for improvements, and establish budgets to complete the sidewalk system.

Figure 22

Figure 23

Figure 24

Figure 25

In terms of general placement criteria, Figure 26 is a drive thoroughfare type. This type of street is designed with narrow lanes and parking on one side of the street, sidewalks, and street trees. This section is appropriate for locations where one side of the street is open space such as a park or pond. The next section, shown in Figure 27, is a Road thoroughfare. This thoroughfare type also has ten-foot lanes to manage traffic speeds, but no on-street parking. This section should be used in locations where there is no demand for on-street parking. Sidewalks and street trees are still provided. The final section, shown in Figure 28, is a Street thoroughfare type. This thoroughfare has narrow lanes and parking on both sides of the street, and should only be used where sufficient parking demand exists to keep the parking spaces at least half filled. Sidewalks and street trees are provided. None of these proposed sections includes bike lanes, as these sections should manage traffic speeds sufficiently to allow bicycles to share the lane with automobiles.

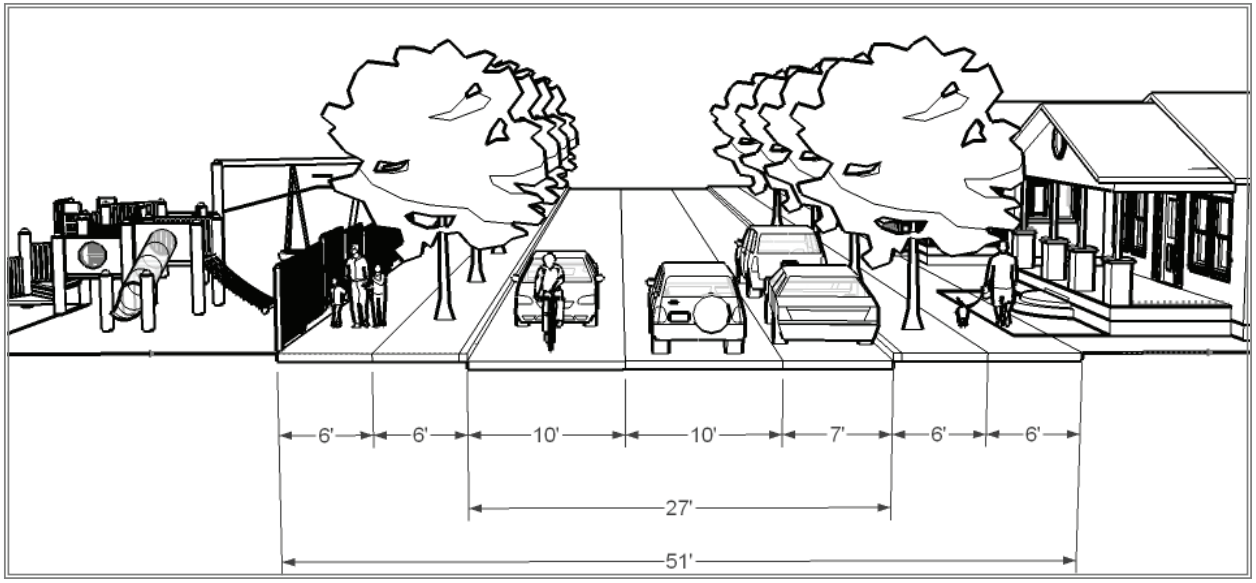

Figure 26: DR 51 27 7/10/10

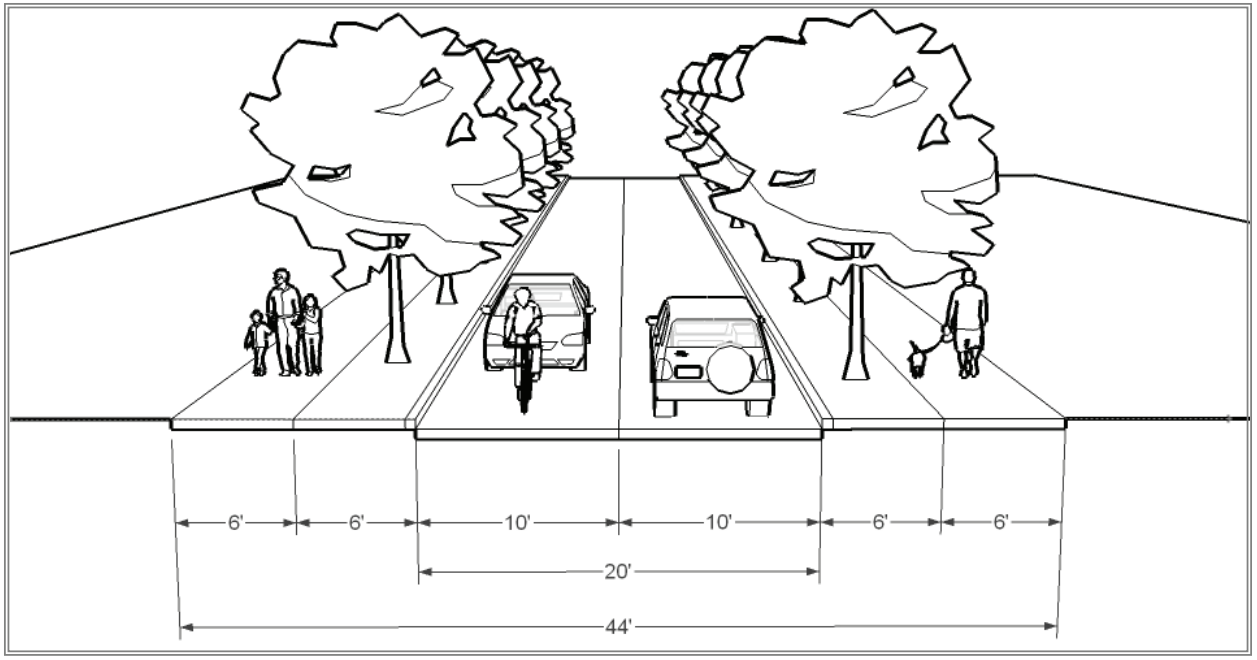

Figure 27: RD 44 20 10/10

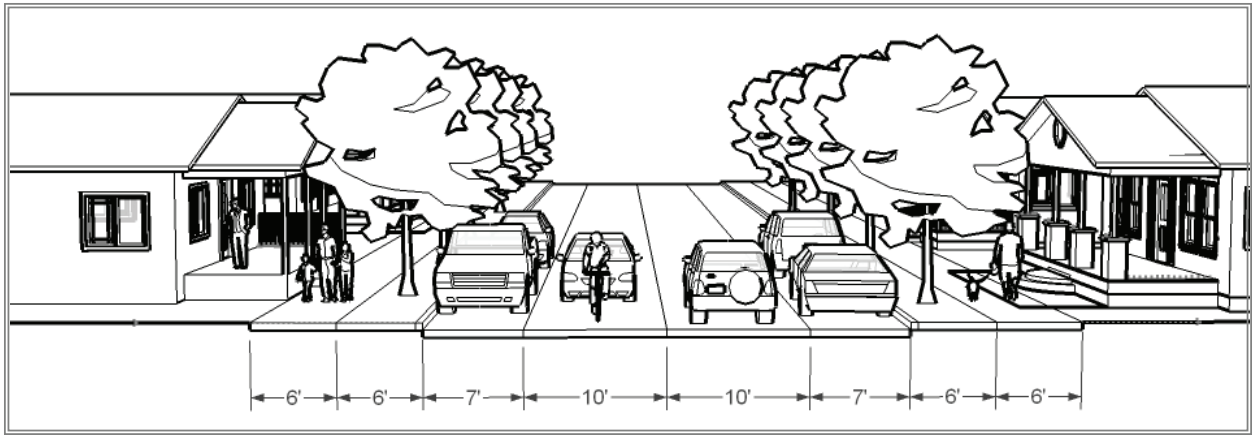

Figure 28: ST 58 34 7/10/10/7