TRANSPORTATION SERVICE STANDARDS ELEMENT INTRODUCTION

Element Purpose

The Transportation Service Standards Element establishes the planning directives and priorities for transportation planning and development. This Element accomplishes this by addressing how the community is connected by its various modes of transportation and the management of this transportation system. Through this Element, the City ensures that the community's transportation system is functioning properly. The components considered in this Element include: road networks, mass transit, pedestrian walkways, bikeways and urban trails.

Introduction

West Melbourne is a suburban community in which major uses are separated from one another and vehicles are predominately used to get from place to place. The City vision is to become a more traditional community where a grid based road network interconnects mixed uses and walkable neighborhoods. The vision anticipates a community where most residents are able to walk or ride a bike to local shops and restaurants, community services and professional offices, parks, and even grocery stores. To achieve this vision, the City transportation planning framework seeks to promote an interconnected development pattern with interlinked road and trail systems. The Element builds upon the planning framework developed through the Visioning, Future Land Use, and Housing & Neighborhood Development Elements to identify and foster central community activity areas and improve the connection between them and the surrounding neighborhoods.

Through the planning framework established through the Transportation Service Standards Element, the City has examined itself and delineated areas of mixed use commercial development in the most appropriate places. The City's location along Interstate 95 and US 192 (New Haven Avenue), and being serviced by extraordinary transit, provides the City the unique opportunity to attract and sustain development where it is desired. West Melbourne wishes to foster developments that provide a variety of transportation opportunities—public transportation, pedestrian walkways, and bikeways—while maintaining the character and identity of its established single-family residential areas. The City seeks to achieve this transportation goal by promoting traditional neighborhood developments (TND) patterns and ensuring that the appropriate transportation infrastructure resources are available to meet the community's needs. The associated goals, objectives and policies are structured to create a balance

between competing interests in the intended spirit of concurrency and to truly manage growth, not merely react to it.

Background

West Melbourne is located several miles from the Atlantic Ocean in east central Florida in a region known as the Space Coast. Many of the greatest growth pressures in Florida have been felt in areas with a close proximity to coastal areas. Two major transportation corridors in Florida—I-95 and US 192—dissect the City. I-95 serves as a primary route for north-south traffic along the east coast of Florida and is being used by an increasingly larger number of motorists. The presence of I-95 has exerted growth pressures near the western boundary of the City near interchanges. Future development is expected to be located west of the Interstate. US 192 acts as the City's primary east-west commercial corridor as it links I-95 to the Atlantic coastal area located several miles to the east of the city limits. I-95 and US 192 are operated as part of the State of Florida's road system. The state controls the allocation of funds and determines the alignment of major thoroughfares that connect to these roadways. The importance of these roads gives the State great influence on the local transportation network.

Two other major transportation partners are the Space Coast Transportation Planning Organization (TPO) and Brevard County. The TPO acts as the Space Coast region's primary transportation planning agency as it helps establish transportation planning and capital improvement priorities. The TPO also helps facilitate transportation priorities with state and Federal transportation agencies and organizations. Not including I-95 and US 192, Brevard County operates and manages all other major roadways in the City. As a result of these intergovernmental transportation partnerships, the City is dependent upon a strong coordinated effort to meet the community's transportation needs.

Space Coast Area Transit (SCAT) provides transit services for the Brevard County area. The City ensures new developments support transit services through master planning and transit infrastructure resources. Additionally, the City works with SCAT to ensure the agency offers the appropriate levels of transit service through well-design transit routes, a variety of paratransit, senior, and special needs transit services, well-located park and ride facilities and other needed transit resources. This partnership ensures that the appropriate transit services are offered to meet the needs of the community.

Evaluation and Appraisal Report: Identified Concerns

Concerns related to transportation service standards were discussed in all chapters of the 2009 Evaluation and Appraisal Report (EAR).

- ***Chapter 1—Community Identity and Image:*** Concerns are related to how to utilize the City's transportation system to promote a distinct sense of place, high quality of life, and integrated community identity.
- ***Chapter 2—Community Core, Neighborhood Centers, and Gathering Spaces:*** Concerns are related to utilize the City's pedestrian and bicycle oriented transportation resources to both link together the City's community and neighborhood centers and park areas as well as provide additional park resources.
- ***Chapter 3—Integrated Development Patterns:*** Concerns are related to how to facilitate the development of traditional neighborhoods and mixed use activity centers that utilize a variety of transportation resources to provide the community varied live-work-play opportunities.
- ***Chapter 4—Community Connectivity and Multimodal Transportation Systems:*** Concerns are related to the why multiple transportation opportunities and multimodal transportation master planning strategies are essential to the City's community planning vision.
- ***Chapter 5—Standards for Public Facilities and Infrastructure Systems:*** Concerns are related to how to develop and finance a transportation system that meets the varied needs of the systems' many users—drivers, pedestrians, cyclists, and transit riders.
- ***Chapter 6—Land Development Practices and Design Standards:*** Concerns are related to how to utilize the City's future new and redevelopment planning efforts to foster traditional neighborhoods and interconnected community resources.

According to the EAR, transportation and connectivity issues are critical to the future livability and character of the City. As discussed in EAR Chapter 4—Community Connectivity and Multi-Modal Transportation Systems, many of the community members and public leaders who participated in the Horizon 2030 community planning process, identified transportation problems as a major concern for the City's future. Specifically, the participants said that transportation systems have not kept up with the community's growth and have contributed to a lack of connectivity and sense of place. Indicators of this challenge include increased traffic congestion, lack of sidewalks that connect neighborhoods to surrounding commercial areas and community resources, and strained transportation budgets. As a result, there is a concern that the transportation system is unable to adequately meet current service needs or address future growth demands.

The EAR acknowledged that the transportation problem cannot be addressed by the City alone. Considering West Melbourne is made up of approximately 9.9 square miles and the average daily vehicle trips that travel through the City extend well outside the city limits due to the City's location along two major roadways, it is clear that transportation linkages must be viewed from the regional level.

The understanding that transportation has to be viewed from the regional level has led the West Melbourne to establish and become active participants in a number of regional partnerships. Partnerships include Brevard County, State of Florida Department of Transportation (FDOT), Space Coast TPO, SCAT and the East Central Florida Regional Planning Council (ECFRPC). The EAR recommended that updates to the 1999 Comprehensive Plan establish policies which continue the support of such partnerships and provide for the ability to address the City's transportation issues on a regional level.

In order to address these concerns, the EAR recommended policies that:

- Ensure new development patterns consider transportation system demands.
- Maximize existing transportation systems.
- Address transportation demands caused by growth and expanded development.
- Address how growth and development outside the City's boundaries impacts transportation services inside its boundaries.
- Provide all new development projects with adequate public facilities.
- Improve coordination between transportation systems and infrastructure enhancements.

To assist in the execution of the previous policies, the EAR recommended the City establish practices and tools that integrate design, function, and structure including:

- Ensuring the suburban growth and development of unincorporated West Melbourne supports the community character and quality of life in the City.
- Promoting development practices that mitigate environmental impacts and prevent sprawl.
- Enhancing transitional areas by creating public spaces within the built environment.
- Recognizing the value of traditional neighborhood components—parks and public spaces, integrated public services and infrastructure systems, multi-modal transportation alternatives, distinct character attributes and design features, community housing opportunities, neighborhood centers, and mixed-use village neighborhoods.
- Coordinating future development practices with expansion of public services and infrastructure systems.
- Making certain development pays for itself—both in the short and long term.
- Providing capacity to prepare for and minimize damage from natural events.
- Making services available that meet the needs and demands of a diverse community.
- Establishing development patterns which enable alternative forms of transportation.
- Acknowledging the inherent link between land use and transportation systems.
- Promoting and supporting the unique qualities of West Melbourne's character.
- Enhancing quality of life attributes for a multi-generational community.

- Distinguishing the features that comprise West Melbourne's different neighborhoods and activity centers.
- Strengthening architectural and design components of the City's buildings and development areas.
- Recognizing the value of mixed-use areas to improving community public spaces, connectivity, character, and planning.
- Supporting the community's economic activity centers and economic base.

IDENTIFICATION AND ANALYSIS OF TRANSPORTATION SYSTEMS

Roadway Inventory, Classification, Capacity, and Level of Service

To properly analyze transportation needs and improvements, current mobility conditions must be identified. Roadways must first be inventoried and classified. The current operating level of service is then identified to determine where deficiencies exist. In addition to the roadway network, other transportation modes must also be analyzed. Demographics and growth trends must be factored into the final analysis. All of the above factors, when examined together can be used to determine what types of improvements may be needed to provide a safe and efficient transportation system (see attached "Existing Roadways by Laneage" and "Existing Roadways by Jurisdiction" maps).

Functional Classification Systems

The first step in determining the existing transportation conditions is to develop an inventory using the Functional Classification System for the roadways within the City, as developed by the Federal Highway Administration (FHWA). Functional classifications include arterials, collectors, and local roads. Arterials and collectors can be further separated into principal or minor. The Functional Classification System is also utilized by FDOT, Brevard County, and the TPO (see attached "Existing Roadways by Functional Classification" map).

Functional classifications are defined as follows:

- ***Freeways/Expressways*** are controlled access facilities with separated intersections providing for interregional and/or interstate travel at high operating speeds. Typically, expressways accumulate high volumes of traffic.
- ***Principal (Major) Arterials*** facilitate relatively long trip lengths at moderate to high operating speeds with somewhat limited access to adjacent properties. Major arterials generally serve

major centers of activity in urban areas and have the highest traffic volume corridors. All US numbered routes (including US 192) and Interstate connector roads are major arterial roads.

- ***Minor Arterials*** provide shorter trip lengths than major arterials and generally interconnect and augment major arterial routes at moderate operating speeds, allowing somewhat greater access to adjacent properties than major arterials.
- ***Major Collectors*** collect and distribute significant amounts of traffic between arterials, minor collectors and local roads at low to moderate operating speeds. Major collectors provide for more accessibility to adjacent properties than arterials.
- ***Minor Collectors*** collect and distribute moderate amounts of traffic between arterials, major collectors and local roads at relatively low operating speeds with greater accessibility to adjacent properties than major collectors.
- ***Local Roads*** generally provide access to abutting properties. Local roads possess relatively low traffic volumes, low operating speeds, short trip lengths, and minimal through-traffic movements.

The West Melbourne land development regulations (LDR) classify City roadways in the following manner:

Functional Classification	City Roadways
Freeways/Expressways	Interstate 95 (1-95)
Principal Arterials	US 192 (New Haven Avenue)
	Wickham Road
	Minton Road
	Palm Bay Road
Minor Arterials	NASA Boulevard
	Hibiscus Boulevard
	Diary Road
Major Collectors	Hollywood Boulevard
	Ellis Road
	Sheridan Road
	John Rodes Boulevard
	Eber Road
	Henry Avenue

According to the LDRs, all roadways not listed on this table are classified as local roads.

Florida's Strategic Intermodal System (SIS) was established in 2003 to enhance the state's economic competitiveness by focusing limited state resources on those transportation facilities that are critical to Florida's economy and quality of life. The SIS consists of primarily interstate roadway systems including I-95 (north-south freeway) which passes through the western city limits. I-95 has two interchanges serving the West Melbourne area located at US 192 and Palm Bay Road. These interchange connectors

increase the traffic circulation throughout West Melbourne's roadway system. As a principal east-west arterial that connects the eastern coastal communities to the Florida's central region, US 192 is also a contributing roadway to the SIS system.

Traffic Generators

West Melbourne is a suburban residential community located on the edge of a larger economic and business center area which features industries such as space technologies, tourism, medical, health and wellness care and education. West Melbourne is also located in a key position along I-95 since principal arterials US 192 and Palm Bay Road link the interstate to populated coastal communities and economic and employment areas. West Melbourne's position as a residential area located in a key transportation corridor is the basis for its traffic generation analysis (see attached "Major Traffic Generators" map).

West Melbourne's traffic generation and roadway impacts come from both internal and external factors. The internal factors are based on the suburban residential land use pattern which compels people to drive for daily errands, shopping, and work. The external factors are based on the residential nature of the community. Many residents travel to and from the City for work in the adjacent larger economic area. The City is located along several major transportation routes which facilitate traffic through the City as people travel in to and out of the area.

In addition to these general characteristics that influence traffic generation, there are certain destinations in and around the City which generate a large amount of traffic. These generators include major commercial centers, schools, medical facilities, recreation facilities, industrial parks, and airports.

Some of the most significant traffic generators that affect the City of West Melbourne are:

- Commercial centers located along U.S. 192 and Palm Bay Road
  - Melbourne Square Mall (outside city limits)
  - The Shoppes of West Melbourne
  - Melbourne Square Promenade (outside city limits)
  - Hammock Landing
  - Walmart
- Industrial centers located along and near Ellis Road and NASA Boulevard
  - Fortune Cookie Industrial Park
  - Dow Central Park Office Industrial Plaza
  - Ellis Road Industrial Center
  - Industrial Center East
  - NASA Corporate Center
  - Harris Corporation

- Schools
  - Meadowlane Elementary
  - Meadowlane Intermediate
  - Central Junior High
  - Imagine School
- Melbourne International Airport (outside city limits) and associated uses:
  - Airport Corporate Center
  - Airport Industrial Area
- Wuesthoff Hospital (outside city limits)
- U.S. Post Office

Traffic generation factors greatly influence the traffic on a roadway and impacts the level of service (LOS) which provides information about how well the roadways are operating (see the analysis provided in TSS Table 1 and 2).

ROADWAY LEVELS OF SERVICE

The determination as to whether the existing roadways can adequately serve existing and future demands is predicated upon the ability to estimate the maximum amount of traffic a roadway can safely accommodate. The establishment of threshold standards for different classifications of roadways is called levels of service (LOS). LOS is used to identify needed system improvements, either by expansion of existing roadways, constructing new roadways, creating parallel roadways, or the use of alternative modes of travel.

The principal objective of capacity analysis is to estimate the maximum amount of traffic that can be accommodated by a given roadway. However, capacity analysis is best used to estimate the traffic-carrying ability of a given roadway over a range of defined operational conditions using LOS criteria. Roadways do not operate well at capacity because they are not designed to that optimal standard.

The concept of LOS is defined as a qualitative measure describing operational conditions of traffic and the perception of those conditions by motorists and passengers. A level of service category generally describes these conditions in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience and safety. There are six levels of service with LOS “A” representing the best operating condition and LOS “F” the worst. Operating conditions under these LOS standards (as defined in Highway Capacity Manual 2000) are:

- ***LOS "A":*** Motorists are unaffected by the presence of others in the stream of traffic. Freedom to travel at desired speeds and to maneuver within the stream of traffic is extremely high. The general level of comfort and convenience is excellent.
- ***LOS "B":*** Freedom to travel at desired speeds is relatively unaffected, but there is a reduction in the freedom to maneuver within the stream of traffic. The level of comfort and convenience is less, because of the presence of others in the stream of traffic begins to affect individual motorist behavior.
- ***LOS "C":*** Motorists become significantly affected by the interactions with others within the stream of traffic. Traveling at the desired rate of speed is affected and maneuvering within the stream of traffic requires substantial effort on the part of the motorist. Comfort and convenience decline noticeably at this level.
- ***LOS "D":*** Speed and freedom to maneuver are severely restricted, and a poor level of comfort and convenience is experienced by the motorist. Minimal increases in traffic will generally cause operational problems at this level.
- ***LOS "E":*** Operating conditions are at or near capacity. All speeds are significantly reduced. Freedom to maneuver is difficult. Comfort and convenience are extremely poor and motorist frustration is generally high.
- ***LOS "F":*** Operating conditions at this level are forced or have broken down. This condition exists wherever the amount of traffic approaching a point exceeds the amount that can traverse the point. Queues typically form at such locations. Operations are characterized by stop-and-go waves; vehicles may proceed at reasonable speeds for short distances and then be required to stop in a cyclical fashion. Comfort and convenience are extremely poor and frustration is high.

These general definitions apply primarily to roadways having uninterrupted traffic flows, such as freeways. For each type of roadway facility, LOS activities are based on one or more operational parameters or "measures of effectiveness." Basic measures of effectiveness used to define LOS for different types of roadways include: (a) average travel speed, (b) density, (c) delay, and (d) volume.

Existing Level of Service Standards

In Florida, LOS analysis is based on a theoretical 100th highest hour (the traffic conditions in the 100th hour if all hours of traffic in a year were ranked from highest to lowest). The first 29 hours are generally considered "event related" traffic which could occur over Memorial Day or Fourth of July peak on a road serving the beaches. For another part of the roadway network, the first 29 hours could result from unusually high traffic redirected to surface streets due to a crash on I-95. The 30th highest hour is

considered the highest "normal" traffic, equivalent to the heaviest PM-peak hour traffic during peak season which is often used for road design.

The 100th highest hour is specified as the planning analysis hour, and it is used in the State's LOS analysis procedures. For consistency, Brevard County and the West Melbourne have adopted the 100th highest hourly volume design for LOS determination. The 100th highest hour is roughly equivalent to an average PM-peak hour during peak season.

The achievement of the 100th highest hour standard would provide an acceptable compromise between economic efficiency and the availability of adequate service levels. This factor takes into account the unique nature of the region's seasonal population fluctuations and the resulting peak periods of traffic volumes. It represents a community tolerance level, which equates to accepting deficient conditions for approximately two hours per day including: (a) every Friday afternoon throughout the year, and (b) every Wednesday through Friday afternoons during the winter season at urbanized locations, such as the intersection of US 192 and Minton Road.

The LOS standard described above provides an overall goal toward which the City and County can strive to achieve. However, the adoption of a LOS "C" peak hour for constrained and backlogged roadways would not be financially feasible based on the 100th hour design criteria. Currently constrained County roadways are defined as exhibiting a LOS lower than the adopted standard and not being able to attain the adopted standard because prohibitive cost or environmental limitations prevent the construction of at least two additional through lanes. Backlogged County roadways are defined as roadways operating below the adopted standard which do not have prohibitive financial or environmental constraints but are not scheduled for major capacity improvements in the County's Five-Year Schedule of Capital Improvements. The LOS for constrained roadways (prohibited due to physical or other policy limitations) or backlogged roadways (currently un-funded in the Five-Year Schedule of Capital Improvements) is to maintain the current LOS with minimal degradation.

The adoption of a LOS standard for State roadways must consider the standard adopted by FDOT. If the City were to adopt a higher LOS standard on State roadways, the burden would rest on the City to prove that such a LOS could be maintained.

The City's acceptance of constrained and backlogged roadways on both the State and County transportation systems presumes an additional responsibility on the part of the County in its review and approval of development orders. The City's determination is based upon the need to maintain the existing LOS of such roadways and to not allow the existing operating conditions to be degraded.

As indicated on Table TSS-1 (and shown on the attached "Existing Roadways by Current LOS" map), the analysis of existing LOS for major roads within West Melbourne indicates that most roadways in are operating at a LOS "E" or better.

Table TSS-1
Level of Service for Major Roads within the City Limits

Functional Classification	Roadway	Minimum LOS
Rural Principal Arterial	I-95	D
Principal Arterial	Palm Bay Road	E
	Wickham Road	E
	Minton Road	E
	US 192	E
Minor Arterial	Hibiscus Boulevard	E
	NASA Boulevard	E
	Dairy Road	E
Major Collector	Eber Road	E
	Ellis Road	E
	Hollywood Boulevard	E
	John Rodes Boulevard	E
	Sheridan Road	E

State Highway System Levels of Service

In 2002, FDOT adopted revised LOS standards for roads on the State Highway System, and in 2009, FDOT again revised the level of service standards in the document "2009 Quality/Level of Service Handbook". These standards are to be used to indicate FDOT system deficiencies, assist in determining work program priorities, review local government and metropolitan planning organization comprehensive transportation plans and review traffic circulation impacts related to Developments of Regional Impact (DRI) and other large developments affecting the State Highway System.

The 2002 State Highway System LOS standards for roads, as reflected in the "2009 Quality/Level of Service Handbook" are intended to further the overall concept of growth management. Relative to the previous level of service standards, these standards (along with the service or "capacity" volumes associated with the various LOS designations) promote or encourage development in existing urban areas, the use of public transit, bicycling, or other alternative modes of transportation and the efficient use of existing highways. These standards more clearly recognize the importance of the different functions (mobility versus access) and the importance of exclusive transit facilities within the State

Highway System. The FDOT handbook recognizes or acknowledges the acceptance of some highway congestion as a trade-off for other urban area amenities and the fact that necessary improvements to many roads on the State Highway System are constrained due to physical or policy barriers or are backlogged beyond current Five-Year Work Programs.

Due to the complexity of the 2009 LOS standards, minimum LOS for roads on the State Highway System cannot be characterized by a single LOS designation, such as LOS "C". Under these standards, LOS for roads on the State Highway System are determined based upon a number of factors, including the location of the road in relation to the general character of adjacent land use development (rural vs. urban), whether or not the road is designated on the Florida Intrastate Highway System (FIHS), the degree to which property access to the road is limited or controlled, number of lands, whether or not the road includes or parallels an exclusive transit facility, whether or not the road is located within a designated Transportation Concurrency Management Area (TCMA) and whether or not improvements to the road are constrained or backlogged.

When applied to State roads located in rural or "urbanizing" areas, these LOS standards are generally more stringent (have a higher LOS) than the standards for similar roads located in urban communities and municipalities. Under the 2009 standards, the minimum LOS for multi-lane roads in rural areas is LOS "B". Two lane highways have a minimum LOS "C". Urbanized or "transition" areas have a minimum LOS "C". The minimum LOS for roads designated on the FIHS in urbanized areas with a population under 500,000 is LOS "C". Non-intrastate roads in such areas are given a minimum LOS "D". The minimum LOS for all roads that include or are parallel to exclusive transit facilities (generally located in urbanized areas with a population over 500,000) is LOS "E".

The minimum LOS for all roads with backlogged or constrained conditions is the current LOS with minimal degradation. Backlogged improvements are not funded in FDOT's Five-Year Work Program. Constrained conditions exist when improvements are prohibited due to physical or other policy limitations.

Table TSS-2—Existing Level of Service Analysis

ROAD	FROM	TO	No. OF LANES			ADOPTED STANDARD					EXISTING		
				ROAD	TYPE	LOS	C VOLUME	D VOLUME	LOS E VOLUME	LOS Volume	VOLUME AADT	LOS	Available Capacity
I-95/ SR 9[1]	West Eau Gallie Blvd/518	New Haven Ave/ 192	4	State	Urban Principal Arterial-Interstate	D	55200	67100	74600	67100	74000	D	600
	New Haven Ave/ 192	Palm Bay Rd					55200	67100	74600	67100	83000	F	-15900
John Rodes Blvd / CR 511	Eau Gallie / 518	Ellis Rd	2	County	Urban Major Collector	E	9100	14600	15600	15600	12790	C	2810
	Ellis Rd	Sheridan Rd					9100	14600	15600	15600	11250	D	3350
	Sheridan Rd	New Haven Ave/ US 192					9100	14600	15600	15600	10860	D	3740
Wickham Rd / CR 509	Eau Gallie / CR 518	Nasa Blvd	4	County	Urban Principal Arterial	E	21400	31100	32900	32900	39490	F	-6590
	Nasa Blvd	Greensboro Dr					21400	31100	32900	32900	29940	D	1160
	Greensboro Dr	Sheridan Rd					21400	31100	32900	32900	29940	D	1160
	Sheridan Rd	New Haven Ave/ US 192					21400	31100	32900	32900	28740	D	2360
Minton Rd / CR 509 / SR 514	New Haven Ave/ US 192	Henry Ave	4	State	Urban Principal Arterial	E	26000	32700	34500	34500	32080	C	2420
	Henry Ave	Milwaukee Ave					26000	32700	34500	34500	35400	F	-2700
	Milwaukee Ave	Wingate Blvd					26000	32700	34500	34500	33200	E	-500
	Wingate Blvd	Eber Blvd					26000	32700	34500	34500	31230	D	1470
	Eber Blvd	Hield Rd					26000	32700	34500	34500	30600	D	2100
	Hield Rd	Palm Bay Rd					26000	32700	34500	34500	29490	D	3210
Evans Rd	Nasa Blvd	Hibiscus Blvd	4	County	Urban Major Collector	E	21400	31100	32900	32900	15850	C	17050
	Hibiscus Blvd	New Haven Ave / US 192					21400	31100	32900	32900	19700	C	11400
Hollywood Blvd	New Have / US 192	Henry Ave	2	County	Urban Major Collector	E	9100	14600	15600	15600	11090	C	4510
	Henry Ave	Florida/Wingate Blvd					9100	14600	15600	15600	13380	D	1220
	Florida/Wingate Blvd	Eber Blvd					9100	14600	15600	15600	12830	D	1770
	Eber Blvd	Palm Bay Rd					9100	14600	15600	15600	13590	D	1010
Dairy Rd	Hibiscus Blvd	New Haven Ave/ US 192	2	County	Urban Minor Arterial	E	9100	14600	15600	15600	13380	C	2220
	New Haven Ave/ US 192	Edgewood Dr	4				21400	31100	32900	32900	23100	D	8000
	Edgewood Dr	Florida Ave					21400	31100	32900	32900	21290	C	9810
	Florida Ave	Eber Blvd					21400	31100	32900	32900	22740	D	8360
	Eber Blvd	Madison / Range Dr					21400	31100	32900	32900	18850	C	12250
	Madison / Range Dr	Palm Bay Rd					21400	31100	32900	32900	18500	C	12600
Ellis Rd	Wickham Rd / CR 509	Greensboro Dr	2	County	Urban Major Collector	E	9100	14600	15600	15600	10900	C	4700
	Greensboro Dr	John Rodes Blvd / CR 511					9100	14600	15600	15600	7840	C	6760
Nasa Blvd[2]	Eddie Allen Rd	Wickham Rd / CR 509	4	County	Urban Minor Arterial	E	21400	31100	32900	32900	23410	C	9490
Hibiscus Blvd[3]	Airport Blvd	Evans Rd	4	County	Urban Minor Arterial	E	21400	31100	32900	32900	15276	C	17624
New Haven Ave / US 192 / SR 500	Airport Blvd	Dairy Rd	4	State	Urban Principal Arterial	E	26000	32700	34500	34500	35050	F	-550
	Dairy Rd	E Mall ent					26000	32700	34500	34500	37390	F	-4690
	E Mall ent	W Mall ent					26000	32700	34500	34500	33760	E	-1060
	W Mall ent	Hollywood Blvd					26000	32700	34500	34500	34580	F	-1880
	Hollywood Blvd	Windover Sq ent					26000	32700	34500	34500	40100	F	-7400
	Windover Sq ent	Dayton Blvd					26000	32700	34500	34500	41960	F	-9260
	Dayton Blvd	Meadowlane Ave					26000	32700	34500	34500	38070	F	-5370
	Meadowlane Ave	Wickham Rd / CR 509					26000	32700	34500	34500	36130	F	-3430
	Wickham Rd / CR 509	John Rodes Blvd / CR 511					26000	32700	34500	34500	29490	D	3210
	John Roades Blvd / CR 511	I-95					26000	32700	34500	34500	25350	C	7350
Eber Blvd	Dairy Rd	Hollywood Blvd	2	County	Urban Major Collector	E	9100	14600	15600	15600	12580	C	3020
	Hollywood Blvd	Minton Rd / CR 509 / SR 514					9100	14600	15600	15600	8790	C	5810
Palm Bay Rd / SR 516	Port Malabar Blvd	Dairy Rd	4	State	Urban Principal Arterial	E	26000	32700	34500	34500	41090	F	-6590
	Dairy Rd	Hollywood Blvd					26000	32700	34500	34500	42500	F	-9800
	Hollywood Blvd	I-95 East Ramp					26000	32700	34500	34500	49060	F	-16360
	I-95 East Ramp	Culver Dr					26000	32700	34500	34500	38410	F	-5710
	Culver Dr	Athens Ave					26000	32700	34500	34500	30780	D	1920
	Athens Ave	Minton Rd / CR 509 / SR 514					26000	32700	34500	34500	27820	D	4880

1. Volumes obtained from FDOT 2007 Counts
2. 2006-2007 Brevard County Traffic Count Volumes were used
3. 2005 Counts where used

Information indicates that the following roadways are failing:

- I-95 fromUS 192 to Palm Bay Road (FDOT)
- Wickham Road from Eau Gallie Boulevard to NASA Boulevard (Brevard County)
- Minton Road from Henry Avenue to Milwaukee Avenue (Brevard County)
- US 192 from Airport Boulevard to East Mall Entrance (FDOT)
- US 192 from West Mall Entrance to Wickham Road (FDOT)
- Although the Palm Bay Road segment was shown as failing in the 2009 EAR, six-laning is complete and the LOS has improved to an acceptable level.

All the above failing roadways are located within the city limits but are not maintained by the City. Therefore the City utilizes intergovernmental coordination practices with FDOT and Brevard County to assess and mitigate the impacts to these roadways. FDOT currently has the following projects (see also Table FLU-10) budgeted for construction. With the exception of the street lights for US 192, all of the projects will result in an improvement to currently failing roadways within the City.

Table TSS-3

FDOT Projects from Five-Year Work Plan 2008-2013

Road	Description	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Palm Bay Road from Minton to Pinewood Dr	Add Lanes and Reconstruct	$5.13M	$1.6M	$0	$98K	$0
Palm Bay Rd from Minton Rd to Conlan	Add Lanes and Reconstruct	$3.97M	$0	$0	$0	$0
Wickham Rd at Nasa Blvd & Ellis Rd	New Road Construction	$11.19M	$4.75M	$9.92M	$0	$0
US 192 at Dairy Rd	Add Left Turn Lanes	$0	$0	$600K	$0	$0
US 192 from I-95 to Dairy Rd	Street Lights	$110K	$0	$0	$0	$0

Concurrency Management

In 2008, the City updated it adopted a Concurrency Management Ordinance (CMO) as part of its land development regulations (LDR). This ordinance implemented the LOS requirements established in the 1999 Comprehensive Plan, and the City will update and revise the CMO to be reflective of the Horizon 2030 Comprehensive Plan within one year of adoption of the comprehensive plan. The CMO ensures that adequate public facilities and services are available concurrent with the impacts of development. This assessment is achieved by requiring development orders to be evaluated according to the potential impacts on established LOS standards.

Transportation concurrency requires developers to certify that the LOS on an existing road system is not degraded by proposed development. Since 1994, the City has implemented the concurrency management review process to ensure that concurrency is met by new developments. For traffic circulation, a minimum LOS "E" must be maintained for US 192 as defined by the State Department of Transportation Level of Service Standards and Guidelines Manual. According to Tables TSS 1 and 2, the City's concurrency management standards are largely being met. Table TSS-3 indicates FDOT has established a work plan to bring roadways not meeting the adopted LOS standards into compliance.

The City requires that concurrency must be met before final approval is granted to begin construction for every proposed development. West Melbourne will not grant final approval for new site plans or subdivisions unless a traffic impact statement or study indicates that the proposed project will not cause roadways to drop below the adopted minimum LOS. If a negative impact is demonstrated in the traffic impact statement or study, development will not be permitted to begin until the LOS deficiency is remedied. Alternate means of transportation, such as SCAT, will be encouraged by the City to remedy some of the impact of new development. Close coordination with Brevard County and SCAT will be necessary to further develop transit routes within areas of new growth. The City has set the adopted LOS standards to be the same as surrounding jurisdictions for arterials and collectors, to bring uniformity to planning and capital improvement efforts in the area. It is unreasonable to expect two different LOS on similar roadway segments of an affected facility, or the expenditure of funds for capital improvements, without the cooperation of another local government to fund an improvement on another facility where the improvement crosses into more than one jurisdiction. Adjacent governmental agencies can approve a development project within their city limits that will impact the roadways in adjacent communities which can result in a deficient roadway segment in the adjacent community. Coordination and an ongoing effort of intergovernmental coordination, including sharing local project data, will ensure transportation needs will be met throughout the south Brevard County area.

Access Management Strategies

The Florida Center for Urban Transportation Research has developed the concept of access management strategies (AMS) for Florida communities. AMS is a long-range planning guide which coordinates access to public roads with surrounding developments. The plan reviews the best practices to reduce negative traffic and pedestrian impacts by implementing good design principles. Utilization of the AMS by the City will improve the overall transportation system.

Emergency Evacuation

West Melbourne is not a coastal city but is still very much impacted by evacuation processes during major hurricanes. US 192 is a primary east-west corridor, an SIS connector, and is used for a main evacuation route for cities in south Brevard County. US 192 intersects with I-95 near the western city limits. I-95 is also part of a primary evacuation route for the entire east coast of Florida. In West Melbourne, the main traffic congestion during evacuation processes is located where US 192 passes under I-95 and becomes a two lane rural highway. US 192 is the only inland route available for south Brevard County (see attached "Evacuation Routes" Map).

FUTURE ROADWAY GROWTH AND TRANSPORTATION IMPROVEMENTS

Space Coast Transportation Planning Organization

The Space Coast Transportation Planning Organization (TPO) was established in 1978 following the passage of the Federal Highway Act of 1974. The TPO is a regional, multi-jurisdictional transportation planning agency which is responsible for leading the transportation planning efforts in the Space Coast to help establish the region's transportation project priorities and ensure local transportation projects are coordinated between jurisdictions.

The TPO board consists of 19elected officials from various local governments. In addition to the organizational board, TPO has several advisory committees including the Technical Advisory Committee (TAC), the Citizens Advisory Committee (CAC), and the Bicycle, Pedestrian & Trails Advisory Committee (BPTAC).

The TPO is responsible for planning and programming for the expenditure of state and federal (not local) transportation funds. They also provide technical guidance to local governments regarding transportation planning issues. As a result, the TPO develops several work products, including annual project priorities, a five-year transportation improvement program (TIP) which is developed cooperatively with FDOT and a long range (20-year) transportation plan (LRTP). It is important to note that the TPO is a planning agency but implementing and funding the transportation projects is left to agencies such as FDOT, Brevard County, SCAT and local municipalities.

Every five years the TPO updates the Long Range Transportation Plan (LRTP). The current 2030 LRTP was adopted on April 8, 2010. The plan defines strategic transportation projects linked with growth and

important community objectives along with the ability to meet long-term mobility needs with projected funding. The 2030 Highway Needs System Plan for South Brevard County shows a number of roadway improvements planned for the future (see attached "Local Future Traffic Circulation Plan" map).

The adopted LRTP includes a number of fully funded planned roadways within the 2009-2014 work plan. These funded roadways consist of:

- Widening I-95 to six lanes.
- Adding a center turn lane on Wickham Road from NASA Boulevard to Ellis Road.
- Widening Palm Bay Road to six lanes (construction complete).

Additionally, the plan has a number of fully funded planned roadways included within the 2015-2035 work plan. These funded roadways consist of:

- Widening Ellis Road to six lanes from John Rodes Boulevard to Wickham Road.
- Create the new St John's Heritage Parkway as a four lane roadway with related I-95 interchanges.
- Widening US 192 to six lanes.

Roadway Improvement Funding

Funding is the major constraint for roadway remedies. The City will continue to pledge its share of the local option gas tax in the future as it has in the past. In addition to gas tax funding, the City will utilize transportation impact fees where possible to offset the City's share of the financial burden. Brevard County and FDOT are responsible for most of the roadway network within the city limits. A jurisdiction with a population of less than 20,000 cannot be expected to solely fund such improvements. The City shall continue to require development to pay for the impact it creates though impact fees, roadway improvements, and/or right-of-way dedication. As in the past, the City will require all new development to submit a traffic statement of study detailing the potential impacts created by the proposed project. If the project impact creates an unacceptable LOS, development will only occur if the necessary improvements to restore an acceptable LOS to the roadway are planned and funded or the developer can restore the roadway network to an acceptable level of service by improving the transportation network within the development.

Transportation planning in West Melbourne is an ongoing cooperative process. West Melbourne depends on Brevard County and the TPO significantly in regards to determining transportation needs and assessments such as data collection of current conditions of the transportation system and current needs. FDOT District 5 uses a regional model to assess future needs and then uses this data along with input from the local planning organizations to create the FDOT Adopted Work Program. The TPO uses

the current and future data along with the regional model to determine the Transportation Improvement Plan and the LRTP as required by State law.

The City implements these roadway financing commitments through its established road impact fee which it collects through a partnership with Brevard County. Through this partnership, the City collects County road impact fees from all applicable developments. These fees provide a fair and equitable method of raising funds to improve county roads. Additional roadway funding sources are derived from FDOT, such as roadway enhancement funding and the Transportation Regional Incentive Program.

ALTERNATIVE MODES OF TRANSPORTATION: TRANSIT, RAIL, PEDESTRIAN TRAILS, AND AIR

Multi-Modal Alternatives Approach to Transportation Services

Besides roadways, the City's existing transportation system is also comprised of mass transit service provided by Space Coast Area Transit (SCAT). The City will be reviewing ways that residents and those working in the City can more easily utilize the transit available. West Melbourne will also continue to work with SCAT to evaluate the alternate routes and days and hours of operation. Bicycles paths and pedestrian sidewalks are another important component of the City's transportation system. The City's sidewalks currently do not provide pedestrian and bicycle access along all segments of major roadways. As part of its commitment to linking the community together through an integrated, multi-modal transportation system that provides transportation alternatives, the City will work towards identifying and prioritizing needed facilities during this planning period to increase options for alternate transportation modes for the residents of the City.

Recognizing the importance of an interconnected, multi-modal transportation system and the need to address the impact of vehicles on the walkabiliy/bikeablility of the community, the City has established a Multi-Modal Transportation Element which focuses on the need to develop a variety of transportation alternatives. The Multi-Modal Transportation Element goals, objectives, and policies are a tool that will help the City become pedestrian friendly and bicycle accessible..

Developments that are built according to the land use and transportation planning patterns in the Multi-Modal Transportation Element will feature traditional mixed use transportation planning practices including:

- A complimentary array and range of land uses.
- Interconnected networks of streets designed to encourage walking and bicycling.

- Appropriate densities and intensities within walking distance of bus stops.
- Daily activities within walking distance of residences.
- Public uses, streets and gathering places that are safe, comfortable and attractive for the pedestrian.
- Creating vehicular parking that does not interfere with pedestrian, bus, auto and truck travel modes.

Modal Split and Vehicle Occupancy

Extensive fixed route transit service in West Melbourne has not been possible, due to several factors including:

- A suburban development pattern.
- Disconnected land use system and street layout.
- City's location in relationship to major employment centers and destinations.
- Overall population demographics.

As a result of the factors, nearly all trips in the city are by automobile. On corridors served by public transit, the modal split is less than one percent transit. Vehicle occupancy rates were determined by Brevard County for use in the Long Range Transportation Plan (LRTP). The average vehicle occupancy rate in Brevard County 1.1 persons per vehicle for home based work trips and 1.4 persons per vehicle for all other trips.

Transit

West Melbourne does not supply public transportation to it's residents. SCAT is Brevard County's Community Transit Coordinator (CTC). SCAT is an independent governmental entity partially funded by the Board of County Commissioners and provides fixed route service, vanpools, park-and-ride and paratransit services, including trips for the transportation disadvantaged population. The characteristics of public transit facilities are documented in the 2008-2013 Transit Development Plan (TDP). Currently, SCAT operates 16 fixed routes throughout Brevard County with four of the routes serving West Melbourne (see "Existing Mass Transit System" map). Utilizing the transfer routes set within SCAT's fixed route system, a resident of West Melbourne can travel almost anywhere within the county.

The usefulness of transit is measured by frequency of service (headway), availability during peak hours, peak hour capacities, and location. The following paragraphs describe some of these indicators.

In general, fixed routes offered by SCAT operate from 6 am to almost 9 pm to cover the peak hours during the work week, with limited weekend hours. In 2005, countywide, per the 2008-2013 TDP, SCAT

had 1.45 million riders with a fleet of 176 vehicles. In 2005, according to the SCAT 2008-2013 TDP, the average number of riders per hour on SCAT's fixed routes was 17. Typical headways (frequency of service) on SCAT's fixed routes are one hour. Headways or frequency of service is the primary determinant of the quality of transit from the perspective of the transit rider. The shorter headways, the more convenient it is for the potential transit rider to choose transit over other modes of travel.

The 2008-2013 TDP contains short and long term recommendations for improving SCAT's services. Data on the peak hour headways of Route 25, one of the major routes that traverses many sides of West Melbourne (Minton, US 192, Norfolk Parkway) is not available. However, US 192 has been identified in the 2008-2013 TDP as one of eight "key corridors" where the focus will be on improving frequency of fixed route stops, extending service times and perhaps implementing premium types of services. The western terminus of the US 192 route is two miles west of I-95, approximately at the location of the proposed St. Johns Heritage Parkway.

Peak hour capacity cannot be determined as the main route that traverses West Melbourne, Route 25 does not have peak hour or ridership information in the 2008-2013 TDP.

Hammock Landing, located at the northwest intersection of I-95 and Palm Bay Road, has a SCAT transfer station with service being provided per the DRI Development Order for this project. The transfer station used to be at Walmart in West Melbourne, but this was changed when the larger area was provided in Hammock Landing to accommodate this function. In keeping with SCAT principles stated in their TDP, SCAT provides transit to all major employment areas in West Melbourne, and there are numerous transit stops located along the arterials that traverse the city. The City supports the expansion and addition of routes throughout the city to help decrease vehicle miles traveled and provide opportunities for multi-modal transportation, and through our participation in the Space Coast TPO we will coordinate with SCAT on future plans.

SCAT's areas of support to the city include: Car/Vanpool Matching, Fixed Route Buses, Employer Parking Incentive Programs, developing Park-N-Ride locations, Telecommuting options, a Vanpool Leasing Program, Alternative Work Scheduling, Bicycle Commuting, Pedestrian Commuting or a combination of the above elements.

The TPO 2035 LRTP highlights a 2008 rider survey of SCAT riders that found SCAT ridership can be characterized in the following ways:

- Transit is becoming increasingly competitive versus other modes of travel. The percentage of riders who identified convenience as their most important reason for riding the bus more than doubled over the last five years to almost 13 percent.

- For one out of five riders, SCAT is their only option for making a trip. Riders in the 18 or younger and 60 or older age ranges are most dependent on SCAT.
- Access to an automobile and the ability to drive continue to be major factors in the decision to ride the bus. Over three-fourths of riders identify these two reasons as most important in their decision to ride the bus.
- SCAT has become an increasingly viable option for residents to get to work. Over one-fourth of all SCAT trips are for work, compared to one-fifth in 1999.
- Making SCAT routes highly accessible remains a key objective. About three out of four SCAT riders walk to get to the bus, while almost ten percent ride a bike.
- A majority of SCAT riders use the bus on a regular basis. Over 85 percent of riders take the bus every week.
- A majority of SCAT riders are new to the system. Over one third have been riding for less than six months, while two-thirds have been riding for less than two years.

The study also found that—consistent with SCAT coverage, headway times, and routes—85 percent of the riders are from Cocoa, Cocoa Beach, and Melbourne. Thus, it could be argued that West Melbourne ridership may increase it SCAT increased service frequency and coverage areas and if the city encouraged use of SCAT services through improved multi-modal planning, including additional park and ride facilities.

Bicycle

According to the Florida Bicycle Association, bicycling is one of the most efficient modes for shorter local trips. The availability of bicycle facilities plays an important role in encouraging the use of bicycles as a mode of travel. In communities that have a good bicycle network, considerable shares of shorter vehicular trips are substituted by bicycle trips. Additionally, bicycling offers the potential for recreation and positively contributes to the health of the residents.

The lack of bicycling facilities is a concern to the residents of the City of West Melbourne. This issue was raised in the Horizon 2030 visioning process in November 2007. The current TPO Bicycle Plan was adopted in 1988 and the TPO developed a comprehensive pedestrian plan in 1993. The TPO LRTP includes goals, objectives, and policies that address pedestrian and bicyclist needs. A Brevard County trail system is currently under development.

Pedestrian

All modes of travel begin and end with walking, therefore, the existence of pedestrian facilities and amenities is integral to the success of all other travel modes. The success of transit is directly dependent on the availability of pedestrian infrastructure around transit stops.

The City of West Melbourne has limited interconnected sidewalks which may be the reason why walking accounts for a very small percent of travel within the City. Some areas in the residential subdivisions have sidewalks on both sides of the road, while others have none.